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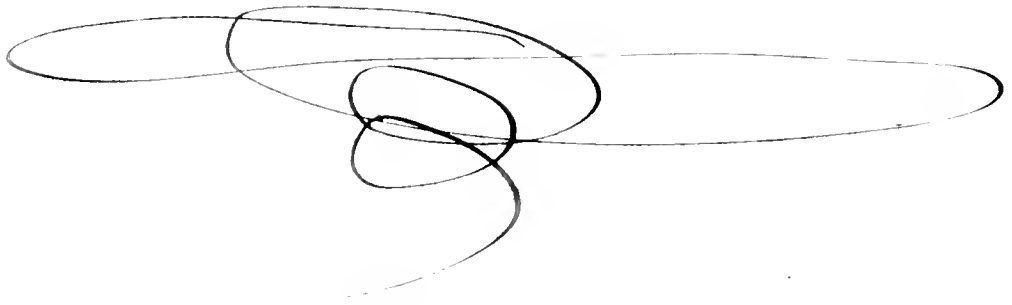

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ROSES (H.P.) for Forcing, been potted since October. Several thousands, best sorts for market, all on the Manetti. Price on application to
JAMES KELMAN, Chingford, Essex.

To the Trade, &c.

ROSES.—Now ready, in great quantities, New and Tea and Noisette Roses, in Pots (best sorts only). CATALOGUES free.
EWING AND CO., The Royal Norfolk Nurseries, Norwich.

The Oxford Roses, on Cultivated Seedling Briar.

GEORGE PRINCE'S Priced and Descriptive CATALOGUE now ready. All Roses are grown exclusively on the above stock at this establishment.
14, Market Street, Oxford.

Special Culture of Fruit Trees and Roses.

THE DESCRIPTIVE and ILLUSTRATED CATALOGUE of FRUITS (by THOMAS RIVERS) is now ready; also CATALOGUE of Select ROSES. Post free on application.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

Fruits.—Roses.

A. M. C. JONGKINDT CONINCK'S Wholesale TRADE LIST of FRUITS and ROSES is now ready, free on application.
Large quantity of home-grown, very sound bulbs of LILIUM AURATUM.
Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

Roses.

CHARLES TURNER can still supply strong Plants of all the leading varieties, of different heights and in pots, including the fine new kinds, Miss Hassard, Rev. J. B. M. Camm, John Stuart Mill, and Royal Standard. FRUIT TREES are also very fine this season.
A DESCRIPTIVE CATALOGUE of the above may be had on application.
The Royal Nurseries, Slough.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy.
The Ottershaw Nursery, Chertsey.

Hyacinths, Tulips, &c.

WM. CUTBUSH AND SON beg to announce that their Descriptive Priced CATALOGUE of HYACINTHS, TULIPS, CROCUS, and other BULBS, &c., is now ready. It contains their usual fine assortments, which have for many years held the highest reputation. Post free on application.
Highgate Nurseries, London, N.

To the Trade.—Seed Potatos.

H. AND F. SHARPE are prepared to make Special Offers of SEED POTATOS grown on their own Farms from the finest selected stocks. Their List this season comprises all the English and American varieties worthy of cultivation. The prices will be found very moderate.
Seed-growing Establishment, Wisbech.

NEW PEAR, "LUCY GRIEVE."—First-class Certificate; described in Dr. Hogg's new *Fruit Manual*, and in our own CATALOGUES.
E. G. HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, N.W.

Splendid New Apple,

LADY HENNIKER, sent out by EWING AND CO., Norwich. Strong maiden plants, 3s. 6d. each, 21s. for seven; 2-yr. plants, 5s. to 7s. 6d. each.

GRAPE VINES.—Strong and extra strong, thoroughly ripened without bottom-heat, for immediate Fruiting and for Planting: the leading varieties.
CATALOGUE and Prices on application.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

Vines, Vines, Vines.

B. S. WILLIAMS begs to announce that his stock of VINES is now in fine condition, and ready for sending out. It comprises all the leading kinds, strong Canes of Pearson's Golden Queen.
For prices and description see BULB CATALOGUE.
Victoria and Paradise Nurseries, Upper Holloway, London, N.

WANTED—20,000 HAZEL, 1-yr., YELLOW PROVENCE ROSES (true), and STRIPED PROVENCE ROSES (true).
State price, &c., to
EWING AND CO., Norwich.

WANTED, from 50 to 100 well grown VARIEGATED HOLLIES, about 3 feet; also strong blooming plants of CHRISTMAS ROSE, for cash.
W. AND J. BROWN, Nurserymen, Seedsmen, &c., Stamford.

RHODODENDRONS (Standard).—Wanted, a number of the above, with 3 to 3½ feet clean stems, and heads of about 2 feet in diameter. State price to
THOMAS METHVEN AND SONS, Leith Walk Nurseries, Edinburgh.

WANTED to Purchase, 200 STANDARD APPLE TREES, clean straight stems, 6 feet. Address, stating lowest price for cash, to
H. T. BATH, Nurseryman, Lymington, Hants.

SUTTONS' COMPLETE COLLECTIONS of choice VEGETABLE SEEDS for One Year's Supply contain only the best sorts

SUTTONS' £3 3s. COLLECTION of VEGETABLE SEEDS for a Large Garden. Carriage Free.

SUTTONS' £2 2s. COLLECTION of VEGETABLE SEEDS for an Ordinary Size Garden. Carriage Free.

SUTTONS' £1 1s. COLLECTION of VEGETABLE SEEDS for a Smaller Garden. Carriage Free.

SUTTONS' 15s. & 12s. 6d. COLLECTIONS of VEGETABLE SEEDS for Small GARDENS.

SUTTON AND SONS, Seedsmen by Appointment to the Queen and H.R.H. the Prince of Wales, Reading, Berks.

Important to the Trade.

LILIUM AURATUM. Bulbs are now arriving from Japan in fine condition, and being Sold Weekly at very low prices, at
STEVENS' ROOMS, 38, King Street, Covent Garden, London, W.C. Catalogues on application.

PALMS and other TREES for Sale—suitable for Winter Gardens, Aquariums, and large Conservatories. Messrs. FLETCHER, LOWNDES AND CO., of 13A, Great George Street, Westminster, are instructed to Sell by Private Treaty a lot of choice Palms and other Trees, the property of a gentleman. No agents need apply.

Planting Season.

SEEDLING and TRANSPLANTED FOREST TREES, &c.
List of Prices may be had on application to
W. P. LAIRD AND SINCLAIR, Nurserymen, Dundee, N.B.

SPANISH CHESTNUTS, a large quantity, 3 feet; ASH, SPRUCE, BIRCH, and ALDER, stout, well-grown, and transplanted, to be Sold.
G. CHORLEY, Midhurst, Sussex.

Green Screens, for Shutting Out Unsightly Objects.

LOMBARDY POPLARS, fine large, 20 to 30 feet high, 3s. to 5s. each. Delivered on Rail.
T. JACKSON AND SON, Nurseries, Kingston, Surrey.

For Sale, to Clear the Ground.

PORTUGAL LAURELS, a large quantity, very good, bushy, 2 feet, 25s. per 100.
ENGLISH YEWS, good bushy, 1½ foot, 21s. per 100.
WILLIAM BUNTING, Nurseryman, Colchester.

MAGNIFICENT NEW HARDY EVERGREEN FLOWERING SHRUB, &c.—For particulars see our advertisement in *Gardeners' Chronicle* of Nov. 19 and 26. See also Catalogue, free on application.
The NEW PLANT and BULB COMPANY, Lion Walk, Colchester.

W. HALSTEAD has to offer the following which are very fine and well rooted, at reasonabl prices:—100,000 LARCH, fine, transplanted, 2½ to 3 feet 5000 ASHTON SEEDLING GOOSEBERRY, fine, transplanted; 2000 VICTORIA RED CURRANTS, fine, transplanted. Prices on application.
The Nurseries, Lancaster.

LOUIS LEROY, NURSERYMAN, Angers, France.
FRUIT and ORNAMENTAL TREES and SHRUBS—Roses, Camellias, Rhododendrons, Azaleas, Gardenias, Magnolias. Speciality for Nursery Stocks, Pear Seedlings, Quinces, Plum Seedlings, Mahaleb Cherries, Paradise, Doucin, and other Stocks. CATALOGUES sent on demand.

Strawberries for Forcing.

CHARLES TURNER can supply extra strong plants in 6-inch pots of the following varieties:—President, Keens' Seedling, Sir C. Napier, British Queen, Sir J. Paxton, and La Grosse Sucrée.
The Royal Nurseries, Slough.

SEAKALE, ASPARAGUS, and RHUBARB—Extra strong, for immediate Forcing and Planting. Prices upon application.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

The Best Celery is

LEICESTER RED—1s. per packet.
The best SAVOY is KING COFFEE, 1s. per packet; with many other choice stocks of Seeds. TRADE PRICED LIST on application.
HARRISON AND SONS, Seed Growers, Leicester.

Mangel and Swede.

JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself.
Bardney Manor, Lincoln.

SNOWFLAKE POTATO, splendid new variety from America, extraordinary cropper and splendid quality. Fine ENGLISH GROWN SEED, price 1s. per lb., 6s. per peck of 14 lb., 21s. per bushel of 56 lb.; much cheaper by the sack or ton. Orders of 21s. and upwards carriage paid.
DANIELS BROTHERS, Seed Growers, Norwich.

SALES BY AUCTION.

Bulbs from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, January 3, at half-past 12 o'Clock precisely, FIFTEEN CASES of BULBS, arrived from Holland, in large and small lots to suit all buyers.

On view the morning of Sale, and Catalogues had.

Rare Lilies and Other Roots.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, January 6, at half-past 12 o'Clock precisely, RARE LILIES and OTHER ROOTS, including the following Genera, in many species and varieties, with descriptive notes:—Achimenes, Alliums, Alstroemeria, Amaryllis, Antholyza, Babiana, Begonia, Bobartia, Brunsvigia, Caladium, Chlidanthus, Coburgia, Colchicum, Crinum, Crocosma, Curcuma, Cyclamen, Cyrtanthus, Dioscorea, Erythrina, Erythronium, Eucharis, Eurycles, Frittilaria, Gastronema, Gesnera, Griffinia, Habranthus, Hæmanthus, Helleborus, Hippeastrum, Iris, Ismene, Ixia, Lachenalia, Nerine, Nymphæa, Oxalis, Pæonia, Pancratium, Pardanthus, Phycella, Scilla, Sparaxis, Spigelia, Sternbergia, Trileleia, Tropæolum, Tulipa Greigii, Tuberoses double, Urceolina, Watsonia, Zephyranthes, &c.; also an importation of 6000 BULBS of LILIUM AURATUM, just arrived from Japan in very fine condition.

On view the morning of Sale, and Catalogues had.

WANTED to RENT on LEASE, within easy distance of London, from ONE to SIX ACRES of LAND for Nursery Purposes, with House thereon or attached. Send full particulars to

A. B. C., Verralls, Newsagent, Bromley, Kent.

To Market Gardeners.

TO BE DISPOSED OF, the LEASE of 75 ACRES of first-class MARKET GARDEN and FRUIT PLANTATION, with excellent Buildings, situate close to London. Apply to

Mr. MALCOLM SEARLE, Market Garden Auctioneer, 2, Bond Court, Walbrook, E.C., who has 600 ACRES of LAND to LET.

FARMS FOR SALE in Worcestershire, Herefordshire, and Pembrokeshire. To pay 4 per cent. TO LET, 287 ACRES near Bromyard.

D. THOMAS, near Bromsgrove.

Transit Agency for Plants, Seeds, &c.

C. J. BLACKITH AND CO., late BETHAM & BLACKITH, Cox's and Hammond's Quays, Lower Thames Street, London, S.E.—Forwarders to all parts of the World.

MESSRS. FRASER AND BENTON, HORTICULTURAL AND AGRICULTURAL AUCTIONEERS AND VALUERS, Romford and Grays, Essex.

Window Glass, Sheet Lead, Paints, &c.

THOMAS MILLINGTON AND CO., IMPORTERS and MANUFACTURERS. New LIST of PRICES, very much reduced, on application.

87, Bishopsgate Street Without, E.C.

Metallic Hothouse Builder to Her Majesty.

HENRY HOPE (late Clark & Hope, formerly Clark), HOTHOUSE BUILDER and HOT-WATER APPARATUS ENGINEER.

55, Lionel Street, Birmingham. Established A.D. 1818.

BOOKS of DESIGNS, 5s. each.

☞ The Extensive Ranges of Metallic Hothouses in the Royal Gardens, Windsor and Osborne, were executed at this Establishment.

GOVERNMENT EMIGRATION.

SYDNEY, NEW SOUTH WALES.—Passages are provided for Married Couples not exceeding 40 years of age, with or without children; and Single Men and Women not exceeding 35 years of age; being FARMERS, MECHANICS, MINERS, LABOURERS, and FEMALE DOMESTIC SERVANTS, on payment of the following rates:—12 years and not exceeding 40, £5 10s.; 1 year and under 12, £2 15s.

For passages and all further information, apply to the AGENT-GENERAL, at 3, Westminster Chambers, Victoria Street, London, S.W.

Evening Lectures to Working Men.

ROYAL SCHOOL OF MINES, Jermyn Street.

The SECOND COURSE of this SESSION, consisting of SIX LECTURES on the MANUFACTURE of IRON and STEEL, by Dr. PERCY, F.R.S., will be commenced on MONDAY, January 10, at 8 o'Clock. Tickets can be obtained by Working Men only on MONDAY EVENING, January 3, from 7 o'Clock. Only one Ticket can be issued to each applicant, who is requested to bring his name, address, and occupation written on a piece of paper, for which the Ticket will be exchanged. TRENHAM REEKS, Registrar.

To the Subscribers of the

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Your VOTES and INTEREST are solicited at the NEXT ELECTION (January 20, 1876) for STEPHEN WEST, of Stoke Newington, aged 73, who has been a Gardener all his life, and is now disabled by Rheumatism and slight Paralysis. He is a widower and childless, and without any income, the Club to which he had subscribed above 40 years having lately broken up through age and death of members. He has at present a small allowance from the family of his late Master, with whom he lived above 17 years.

The New Japan Apple.

PYRUS MAULEI, is now distributing, at 21s., 15s., and 10s. 6d. each. It is as hardy as the common Apple, blossoms at the same time; the flowers are of a vivid orange-scarlet, fruit of a bright transparent lemon colour, very fragrant, about the size of the Golden Pippin Apple, which is produced in the greatest profusion.

The jam of this season has been tasted by some of the best judges and connoisseurs, and pronounced exquisite, and perhaps superior to any English or foreign fruit.

W. MAULE AND SONS, The Nurseries, Bristol.

SEED ORDERS should now be made out and, as Seeds will be generally inferior in quality this year, they should be obtained early and from reliable Houses. Send at once for HOOPER'S CATALOGUE. It is the "best published." An "exhaustive compilation on Gardening subjects."—*Weekly Dispatch*. You will get well served if you send your orders to

HOOPER'S, Covent Garden Seed Stores, London, W.C.

Choice Novelties in Vegetables, Flowers, and POTATOS.—See

SUTTONS' AMATEUR'S GUIDE, Post free for fourteen stamps.

SUTTONS' SHORT SELECT SEED LIST, gratis and post free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS, also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both Single and Double; with every sort of Early Spring Flowers. LIST on application.

Mr. WEBB, Calcot, Reading.

CHOICE HYBRID GLADIOLI.—The Gladiolus being a special feature in our business, we respectfully invite Growers of this magnificent Autumn Flower to send for the New CATALOGUE of our Prize Varieties before making their annual purchases. In it all the best sorts are described, and the prices quoted are very moderate.

ROBERTSON AND GALLOWAY, Seed Merchants and Nurserymen, 157, Ingram Street, Glasgow.

To the Trade.

Home-grown GARDEN and AGRICULTURAL SEEDS.

H. AND F. SHARPE'S Wholesale Special Priced LIST of the above Seeds of 1875 growth is now ready; it comprises all the best sorts in cultivation. The quality is very fine, and the prices will compare favourably with those of other growers.

Seed Growing Establishment, Wisbech.

CUCUMBER and MELON SEED.

DUKE OF EDINBURGH CUCUMBER (Daniel's), saved from seed had direct from the raiser. Per packet, 1s.

TELEGRAPH CUCUMBER (true), per packet, 1s.

DUKE OF EDINBURGH MELON (Sutton's), new Scarlet-flesh. Per packet, 1s.

LITTLE HEATH (Monro's). Per packet, 1s.

The four varieties for 3s. Stamps with orders.

WILLIAM BRYANT, The Nursery, Rugby.

DAVIS'S PRIZE JERSEY SHALLOT, grown from seed, for exhibition and culinary use; large—10 to 12 inches in circumference—handsome, and very mild in flavour. Stock very limited this season; 1s. per packet. Agents, Messrs. HURST & SON, 6, Leadenhall Street, London, E.C.

VIOLETS, Victoria Regina, King and Queen doubles, 4s. per dozen.

ASPARAGUS (Connover's Colossal), and SEAKALE roots.

B. R. DAVIS, Seed Warehouse, Yeovil, Somerset.

To the Trade Only.

MONRO'S DUKE OF EDINBURGH CUCUMBER.—The above-named Cucumber having given the highest satisfaction this year, I beg to state that I again intend sending it out myself. Every seed offered is of my own growing and true, no other sort being cultivated here. Price 10s. per 100 seeds. Post Office Orders payable at Potters Bar, or Barnet, N.

PRIZES OFFERED.—J. MONRO will again give in Prizes at the Great Show of the Royal Horticultural Society, to be held at South Kensington, July 10, 1876, £1 for best brace, 15s. for second, 10s. for third. The same amount in prizes will be awarded at the Great International Exhibition in Scotland, to be held at Dundee, September 7, 1876. List of Firms having seeds direct from J. MONRO will be published in the *Gardeners' Chronicle*.

HOLLIES, RHODODENDRONS, &c.

HOLLY, screw-leaved, 12 to 16 inches, 60s. per 100.
,, common, 12 to 15 inches, 16s. per 100.
,, stocks for working, 6 to 9 inches, 8s. per 100.
RHODODENDRONS, hybrid, 6 to 9 inches, 10s. per 100.
CUPRESSUS LAWSONIANA, 5 to 6 feet, 24s. per dozen
THUJA LOBBII, 6 to 7 feet, 24s. per dozen.
PRIVET EVERGREEN, 2 to 3 feet, 16s. per 1000.
,, oval-leaved, 2 to 3 feet, 40s. per 1000.
CHESTNUT, Horse, 5 to 6 feet, 8s. per 100.

The above all recently transplanted. CATALOGUES free.

HENRY DERBYSHIRE, Darley Hill Side Nursery, near Matlock, Derbyshire.

New Roses.

WM. PAUL AND SON beg to offer the following NEW ROSES:—

STAR of WALTHAM, 7s. 6d. to 10s. 6d. each.
QUEEN of WALTHAM, 5s. to 7s. 6d. each.

These have been acknowledged by many of our first Rose amateurs, who had seen them blooming in the Nurseries here, to be two of the best novelties of the season.

Coloured Plates, free by post, 1s. each.

250,000 ROSES, new and old, now on Sale, of superior qualities, at very reasonable prices. Priced Descriptive CATALOGUE free by post.

PAUL'S Nurseries, Waltham Cross, Herts.

To Market Gardeners and Others.

SUTTON AND SONS can offer

Suttons' Ringleader Peas	Veitch's Perfection Peas
Suttons' Racehorse Peas	Scimitar Peas
Little Gem Peas	Bedman's Imperial Peas
Fortyfold Peas	Harrison's Glory Peas

Suttons' Improved Early Champion Peas.

Of true stocks, at moderate prices for large quantities.

Reading, Berks.

TO THE TRADE

AUSTRIAN PINES, 3 to 4 feet, transplanted, 15s. per 100
CRIMSON CHINA ROSES, 20s. per 100.
COMMON CHINA ROSES, 20s. per 100.
DOUBLE WHITE PRIMROSES, 16s. per 100.
LONICERA FLEXUOSA, strong, in pots, 6s. per dozen.
PINUS EXCELSA, 5 feet, transplanted, fine, 12. per dozen.
LAURUSTINUS, 1½ to 2 feet, 25s. per 100.

J. MORSE, Nurseryman, Dursley, Gloucestershire.

Evergreen Hedges.—Box, Green Hollies, and LIGUSTRUM OVALIFOLIUM.

R. NEAL, having a very large Stock of the above, can offer the same by the 100 or 1000 at a very low rate.

Also 10,000 ACER CAMPESTRIS, from 5 to 8 feet in height, clean-grown stuff.

Price on application.

The Nurseries, Wandsworth Common, S.W.

W. HANDSCOMB, NURSERYMAN, Aspley Guise, Woburn, Beds, has to offer the following:—

10,000 EVERGREEN PRIVETS, 2½ to 3 feet.
10,000 ENGLISH OAK, 5 to 7 feet.
1,000 HORSE CHESTNUT, 8 to 10 feet.
300 WEEPING BIRCH, 8 to 14 feet.
300 SILVER FIR, 6 to 8 feet.
500 SILVER FIRS, 3 to 4 feet.

Also a large quantity of LAURELS, &c.

Price on application.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post free their GENERAL LIST of SEEDS, which includes their special stocks of

WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

ROSES on MANETTI STOCKS, Dwarf Hybrid Perpetual—30,000 at 40s. per 100; special offer per 1000.

ROSE, MADAME LACHARME, H.P., the finest White Rose known for Forcing or Blooming in Pots; the flowers are of the most beautiful form, and produced with the greatest certainty. Dwarf plants from open ground, with three and four branches, fine, at 9s. per dozen, 40s. per 100; special offer per 1000.

BLACK ITALIAN POPLAR, 3 to 4 feet, 25s. per 1000

AQUILEGIA GLANDULOSA, the most beautiful of all the Columbines; strong flowering plants in pots 6s. per dozen, 30s. per 100. Address,

HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

AVENUE TREES.

	Girth 4 ft. from ground.
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10 inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8 ,,
MAPLES, Norway, 12 to 16 feet high ..	5 to 8 ,,
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10 ,,
,, Scarlet, 10 to 14 feet high	8 to 10 ,,
,, Double, 10 to 14 feet high	8 to 10 ,,
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10 ,,
ELMS, 15 to 18 feet	7 to 9 ,,

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.

Knap Hill Nursery, Woking, Surrey.

GRAND NEW HARDY FRUIT —DIOSPYROS KAKI.

A very truthful Engraving of this grand acquisition is given in the *Gardeners' Chronicle*, December 18, 1875. For further particulars see our Advertisement in *Gardeners' Chronicle*, Nov. 19 and 26, 1875; also our CATALOGUE, free on application.

THE NEW PLANT AND BULB COMPANY, Lion Walk, Colchester.

LILIUM AURATUM, in magnificent condition and at Low Prices. See SPECIAL LIST, free on application.

THE NEW PLANT AND BULB COMPANY, Lion Walk, Colchester.

Lilies, all Known Kinds (Home-grown).

THE NEW PLANT and BULB COMPANY invite intending Purchasers to send for one of their CATALOGUES, which, in addition to Lilies, contains a selection of the best Hardy Flowering and other Plants in cultivation, all remarkably good, and such as will give a fine effect next season. The Trade liberally dealt with.

Lion Walk, Colchester.

SURPLUS NURSERY STOCK. WHOLESALE PRICES.

ARAUCARIA IMBRICATA, 1½ to 2 feet, 24s.; 2 to 2½ feet, 30s.; 2½ to 3 feet, 40s.; 3 to 3½ feet, 48s. per doz.
BOX, Tree, 2 to 3 feet, 15s. per 100, £5 per 1000.
CUPRESSUS LAWSONIANA, 5 to 7 feet, 18s. per doz.; 8 to 12 feet, 3s. to 5s. each.
PICEA NORDMANNIANA, 3 to 4 feet, 42s. per doz.
PINUS AUSTRIACA, 6 to 7 feet, 18s. per doz.
PRIVET OVALIFOLIUM, 6 to 7 feet, 25s. per 100.
THUJA CHINENSIS, 4 to 6 feet, 12s. to 18s. per doz.
,, WAREANA, 4 to 6 feet, 15s. per doz
THUJOPSIS BOREALIS, 5 to 7 feet, 24s. to 30s. per doz.
YEW, English, very bushy, 3 to 4 feet, 24s. per doz.
WELLINGTONIA GIGANTEA, 5 to 6 feet, 60s. per doz.
SPRUCE FIR, extra fine, 2 to 3 feet, 5s. per 100.
LARCH FIR, 3½ to 4½ feet, 5s. per 100, 40s. per 1000.
SCOTCH FIR, 2¼ to 3½ feet, 25s., 3½ to 4½ feet, 35s. per 1000.
ACACIA, white, 10 to 12 feet, 9s. per doz.
ALDER, common, 10 to 12 feet, 9s. per doz.
CHESTNUT, Horse, 8 to 10 feet, 6s. per doz.; 10 to 12 feet, 9s. per doz.
POPLAR, Black Italian, 12 to 16 feet, 12s. per doz.
,, Lombardy, 12 to 14 feet, 12s. per doz.
,, Abele, 10 to 12 feet, 9s. per doz.
DWARF ROSES, very strong, 25s. per 100.

WILLIAM BRYANT, The Nursery, Rugby.

CATALOGUES

OF

Trees, Shrubs, Roses and Fruit Trees,

ALSO

CLEMATIS, &c., for 1875-76,

Free by Post on application to

GEORGE JACKMAN AND SON,

WOKING NURSERY, SURREY.

HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,

KNAP HILL NURSERY, WOKING, SURREY.

NOW READY,

NURSERY CATALOGUES FOR 1875-76.

WILL BE SENT POST FREE UPON APPLICATION.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),

EDINBURGH,

AND

54, BISHOPSGATE STREET WITHIN, LONDON, E.C.

BUSINESS ESTABLISHED, 1770.

ABIES EXCELSA AUREA

(THE GOLDEN SPRUCE).

MESSRS. J. & C. LEE

Beg to announce that they now intend to send out this magnificent tree. When planted in the full sunlight the whole tree is suffused with the richest gold.

First-class Certificate from the Floral Committee of the Royal Horticultural Society.

Well-established Plants, 21s. each. A few of extra sizes, 31s. 6d. and 42s. each.

The usual allowance to the Trade.

ROYAL VINEYARD NURSERY AND SEED ESTABLISHMENT, HAMMERSMITH, LONDON, W.

OSBORN & SONS

BEG TO ANNOUNCE THAT THEIR ANNUAL

CATALOGUE of KITCHEN GARDEN and FLOWER SEEDS

For 1876

IS NOW READY, AND WILL BE FORWARDED, POST FREE, ON APPLICATION.

It contains a choice selection of all the best and most approved kinds of Vegetable and Flower Seeds, also the leading Novelties, including:—

OSBORN'S FORCING FRENCH BEAN, which has been proved one of the best and most prolific.

OSBORN'S SELECT RED BEET (or Dell's Crimson).

OSBORN'S WINTER WHITE BROCCOLI, undoubtedly one of the best, if not the best mid-winter variety in cultivation.

FULHAM NURSERIES, LONDON, S.W.

GENUINE SEEDS.

JOHN & CHARLES LEE

(Seedsmen to the Queen),

Invite attention to their new and extensive

CATALOGUE OF SEEDS FOR 1876.

This Catalogue has been prepared with their usual care, and contains every Novelty—whether home-grown or foreign, with the most minute and useful descriptions of both

VEGETABLE AND FLOWER SEEDS.

The Prices of every article are the very lowest, considering the first-rate quality of the various stocks offered.

The long standing of the House of Lee (125 years) is a sure guarantee of the excellence of their Seeds and the soundness of their trading.

CATALOGUES MAY BE HAD, POST FREE, ON APPLICATION.

ROYAL VINEYARD NURSERY AND SEED ESTABLISHMENT, HAMMERSMITH, LONDON, W.

To the Trade.

DICK RADCLYFFE AND CO. have still on offer, CAPE FLOWERS, per 1000 or 10,000; DRIED FLOWERS and GRASSES, in Bouquets, Baskets, Wreaths, &c. A first-class assortment. Special Prices and LIST on application. A few SNOWDROPS to offer cheap.

SEED LISTS on application.

128 and 130, High Holborn, W.C.

SCOTCH FIR, True Native Highland.—For Sale, about 50,000 magnificent SCOTCH, 2 to 2½ feet.

ABIES DOUGLASII, 4 to 5 feet; THUJA GIGANTEA, 4 to 5 feet; CEDRUS ATLANTICA, 6 to 8 feet; COMMON HOLLY, 4 to 6 feet; CUPRESSUS LAWSONIANA, 4 to 6 feet.

All fine rooted stuff, grown in a very exposed private Nursery. Prices on application to

HOGG AND ROBERTSON, Nurserymen, &c., 22, Mary Street, Dublin.

To the Trade and Others.

BEANS, Early Longpod and Windsor; ONION SEED, fine white Spanish; POTATOS, Early Goodrich; ASPARAGUS, forcing and other plants; CABBAGE Plants, best stocks, most approved sorts, in any quantities, cheap and good. Lowest cash prices, &c., on application to

FREDERICK GEE, Seed Grower, &c., Biggleswade, Beds.

To Noblemen, Gentlemen, and Others who are REPLANTING this AUTUMN.

R. NEAL begs respectfully to call the attention of the above to his large and varied stock of Hardy SHRUBS, FRUIT, FOREST, and ORNAMENTAL TREES, ROSES, RHODODENDRONS, CLIMBING PLANTS, &c., which are now in fine condition for removal. An early inspection invited.

CATALOGUES may be had on application.

The Nurseries, Wandsworth Common, S.W.

Australian Seeds and Plants.

SEEDS of TIMBER TREES, PALMS, SHRUBS, &c. Plants indigenous to Australia, New Zealand, and Fiji, including ARAUCARIAS, TREE FERNS, variegated FLAX, &c. Orders may be left with our London Agents, Messrs. C. J. BLACKITH AND CO., Cox's Quay, Lower Thames Street, London, E.C., for transmission.

SHEPHERD AND CO., Nurserymen and Seedsmen, Darling Nursery, Sydney, New South Wales. (Established 1827.)

Lilies by the 100 or 1000.

For Planting in Borders, Shrubberies, among Rhododendrons, Massing in Beds, or Grouping among Shrubs.

MR. WILLIAM BULL, being an annual importer from their native habitats of immense numbers, can offer Choice and New LILIES, also the well-known ordinary showy sorts, at very low prices when taken in quantity.

Special quotations on application.

Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Gilbert's New Melon—A. F. Barron.

W. AND J. BROWN are favoured by Mr. R. Gilbert, Burghley Gardens, with sending out the above New Melon, being assured that it is in advance of any preceding it. Received First-class Certificate at the Stamford Horticultural Show: see *Gardeners' Chronicle*, November 20, 1875. Price per packet, 3s. 6d.; Trade terms on application.

Nurseries, Stamford and Oakham.

New Broccoli.

CHRISTIE'S SELF PROTECTING LATE WHITE.—The finest late Broccoli in cultivation.

Mr. NISBET, *Gardener to* Sir Thomas Whichcote, Bart., *Oswarly Park, says*:—"Having seen Mr. Christie's Broccoli growing for the last three seasons I have no hesitation in recommending it as being the finest of all Broccolis I have yet seen, and for hardiness of constitution I know of no Broccoli to compare with it."

The above has been selected from numerous testimonials received in favour of this very valuable Broccoli for late use.

Per packet, 1s. 6d.

A limited quantity to offer to the Trade. Price on application.

EDMUND PHILIP DIXON, Seed Merchant and Nurseryman, Hull.

DAVID LLOYD AND CO. (LIMITED).

CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, is absolutely smokeless, and the fires when made up will last for six hours, rendering night stoking unnecessary.

Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following:—

J. T. RUBERY, 8B, Rumford Place, Liverpool.

SUMMERS AND BOULTON, Dawley, Shropshire

HORTON AND PERRY, Merchants, Wolverhampton.

THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.

R. AND J. TAYLOR, 17, Vachel Road, Reading. [ham.

AGENTS WANTED.

Notice to the Trade.

HOME SAVED SEEDS DIRECT FROM THE GROWER.

CHARLES SHARPE AND CO.'S Wholesale CATALOGUE of SEEDS is now ready, and will be forwarded post free on application.

AGRICULTURAL SEEDS.

CHARLES SHARPE & CO. have the choicest stocks of TURNIP, MANGELS, CARROTS, &c., carefully saved from selected stocks, and at the lowest prices consistent with good quality. CLOVERS and GRASSES, on market terms, samples and prices of which will be sent on application.

KITCHEN GARDEN SEEDS

Peas and Beans have been well secured, and, by careful hand-picking, the samples are made equal or superior to any sent out in the Trade. Brassicas, Lettuce, Radish, &c., are the purest selection of their respective kinds.

SEED POTATOS.

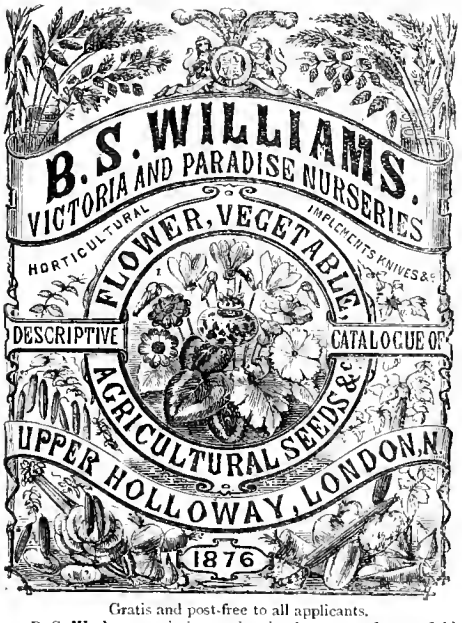
CHARLES SHARPE & CO., from their position in the midst of a great Potato-growing district, are in a position to offer Seed Potatos at very advantageous quotations. The new American Varieties can also be offered, fresh imported Seed, per Barrel or Ton, on the best terms. For prices see CHARLES SHARPE & CO.'s Special Descriptive LIST of Seed Potatos.

FLOWER SEEDS

of every description, at lowest rates.

CHARLES SHARPE AND CO., Seed Growers and Merchants, Sleaford.

DAVISON AND CO., White Cross Nurseries, Hereford, offer the following :—
APPLES, Cider sorts, 7 to 8 feet, 22s. per dozen, £8 per 100, £75 per 1000.
,, Dessert, 6 to 7 feet, 18s. per dozen, £7 per 100, £65 per 1000.
ROSES, Dwarf, selected from Rose Catalogue, 8s. per dozen, 60s. per 100, £25 per 1000.
,, Standard, selected from Rose Catalogue, 16s. per dozen, £6 per 100, £50 per 1000.
AMERICAN ARBOR-VITÆ, 3 to 4 feet, 20s. per 100.
AUSTRIAN FIR, 2½ to 3½ feet, 15s. per 100; 3½ to 4½ feet, 25s. per 100; 5 to 6 feet, 35s. per 100; all fine plants.
BEECH, common, 5 to 6 feet, 12s. per 100.
BIRCH, Weeping, 5 to 6 feet, 10s. per 100.
COTONEASTER, 2 to 3 feet, 20s. per 100.
CHESTNUT, Horse, 6 to 7 feet, 25s. per 100.
LAUREL, Common, 4 feet, 30s. per 100.
,, Portugal, 2 to 2½ feet, 40s. per 100.
PINUS INSIGNIS, 3 to 4 feet, 70s. per 100.
SCOTCH FIRS, 7 feet, 25s. per 100.
THUJA LOBBII, 2 to 3 feet, 30s. per 100.
ABIES ALBERTIANA, 4 feet, 15s. per dozen.
,, DOUGLASII, 7 to 8 feet, 60s. per dozen.
,, NORDMANNIANA, 2½ to 3 feet, 27s. per dozen.
,, ,, very fine, 3 to 4 feet, 48s. per dozen.
,, PINSAPO, 4 to 5 feet, 72s. per dozen.
ARAUCARIA IMBRICATA, 2 to 3 feet, 42s. per dozen.
ACER, sorts, 9 to 10 feet, 18s. per dozen.
AILANTUS, 8 to 9 feet, 30s. per dozen.
BERBERIS JAPONICA, 3 feet, 18s. per dozen.
BEECH, Common, 7 to 8 feet, 9s. per dozen.
BIRCH, Silver Weeping, 9 to 10 feet, 9s. per dozen.
BIOTA AUREA, 1½ foot, 24s. per dozen.
,, ELEGANTISSIMA, 1½ to 2 feet, 42s. per dozen.
CATALPA SYRINGIFOLIA, 7 to 8 feet, 18s. per dozen.
CUPRESSUS LAWSONIANA, 4 feet, 12s. per dozen.
CEDAR, Red, 4 to 5 feet, 12s. per dozen.
CHESTNUTS, Horse, 7 to 8 feet, 12s. per dozen.
,, ,, Scarlet, 7 to 8 feet, 24s. per dozen.
LABURNUM, 9 to 10 feet, 24s. per dozen.
LIME, 10 to 12 feet, 20s. per dozen.
SYCAMORE, 7 to 8 feet, 9s. per dozen.
ONTARIO POPLAR, 12 feet, 18s. per dozen.
YEWS, Pyramid, 5 to 6 feet, 30s. per dozen; 8 to 9 feet, fine, 7s. 6d. each.
ASPARAGUS, Giant, 15s. per 1000; Connover's, 30s. per 1000.
SEAKALE, 2-yr., 10s. per 100.



Gratis and post-free to all applicants.

B. S. W. begs to intimate that in the event of any of his Customers not receiving this CATALOGUE, if they will communicate with him, a Copy will be sent.

LEE'S NEW SWEET-SCENTED VIOLET, "PRINCE CONSORT."

Flowers very large, deep bluish-purple at first opening, but changing to blue afterwards; very sweet-scented; footstalks long, stout, mostly erect; growth compact, foliage large, very deep green, nearly circular, very handsome, hardy.

This is a most advanced improvement on "The Czar" in every way. Flowers twice the size, nearly round in shape; foliage the same in some respects, but much deeper green, and much more compact in growth—altogether a handsome plant.

"LEE'S VICTORIA REGINA"

is often compared with "The Czar," but should more justly be compared with "Devoniensis," and is a most decided improvement on that variety in everything except colour, than which there is not its ("Devoniensis") equal in cultivation. Its habit is much more compact, and it is much more robust in its growth, better colour foliage, which is itself fragrant. But "Prince Consort" you may justly compare with "The Czar;" like "Victoria Regina," however, it is an almost perpetual bloomer.

Plants of the above (although ready) will not be sent out until the last week in February, 1876. This will give time for any inquiries respecting it, but *it will not be sent out* AT ALL *unless the number and amount exceed a considerable limit*, as the blooms are more valuable than the plants, except the number from orders should reach this limit (for he has no one to compete with him in gathered flowers while he keeps it to himself). As the demand for gathered flowers of "Victoria Regina" cannot easily be met on account of the favour it finds in "the markets," its beauty and fragrance being such as far to surpass every other variety, even more may be expected from "Prince Consort," and he has no wish to palm it upon any one. Orders, however, will be booked as received, at 10s. 6d. for four plants and 6d. package; or 30s. for one dozen plants, and 1s. for package; less than four plants not sent out. "Victoria Regina," 6s. per dozen plants; not less sent out.

N.B.—I consider "Prince Consort" to he worth over £1000 to me while I retain it, and I do not intend to let it out for less.

GEORGE LEE, F.R.H.S., Market Gardener, Clevedon, Somerset.

CERASUS LAURO-CERASUS CAMELLIÆFOLIA

(THE CAMELLIA-LEAVED LAUREL).

This extraordinary and elegent LAUREL was raised by Mr. WOOD, of Woodbridge, in Suffolk, on whose behalf we are now offering it for the first time to the public. The leaves are light green, like the common Laurel, but differ from it in shape in being elegantly curled, like a Camellia leaf, or more closely resembling in form the beautiful Croton volutum.

The effect of the plant, grown as a pyramid and well pruned, is peculiarly striking, and if planted close as an edging plant, and pinched well back, it produces a very neat and pleasing appearance.

We propose to distribute this well-known variety at the following low prices, being desirous of seeing it largely used, as it deserves to be, for the purposes above-mentioned :—

Per Plant, 5s.; per dozen, 42s. Special offer to the Trade.

J. & C. LEE,

ROYAL VINEYARD NURSERY AND SEED ESTABLISHMENT, HAMMERSMITH, LONDON, W.

NEW PEA—"DR. MACLEAN."

Price, 7s. 6d. per Quart; 4s. per Pint.

Dr. Maclean Pea, from a Photograph.

CHARLES TURNER

Is much pleased in again being able to introduce a new Pea in "Dr. Maclean," and which is, in his experience, the finest Pea in cultivation.

"Dr. MACLEAN" is a blue wrinkled Marrow, coming in after "Advancer" and before "Premier." Height, 3 feet to 3 feet 6 inches, of very vigorous growth, but its chief recommendation is its wonderful productiveness, producing a third more Peas on the same space of ground than any other variety, and the flavour is of the first quality.

The popular Peas sent out by C. TURNER, viz., "Little Gem," "Advancer," "Wonderful," "Premier," and "Princess Royal," fine as they are, have stood no chance in comparison by the side of "Dr. Maclean," in trials of the three past seasons.

Very favourable opinions of the Horticultural Press and of many eminent Gardeners who have grown this Pea are given in CHARLES TURNER'S SEED CATALOGUE, which may be had on application. Also a CATALOGUE of ROSES, FRUIT TREES, SHRUBS, PLANTS, and BULBS.

THE ROYAL NURSERIES, SLOUGH.

TO THE TRADE.

HUGH LOW & CO.

HAVE TO OFFER IN QUANTITY

DWARF MAIDEN PEACHES, NECTARINES AND MOOR PARK APRICOTS;

ALSO DWARF-TRAINED TREES OF THE SAME.

Prices on application.

CLAPTON NURSERY, LONDON, E.

GARDENERS' CHRONICLE SHEET ALMANAC.

THE "GARDENERS' CHRONICLE" ILLUSTRATED SHEET ALMANAC *for* 1876 (an entirely new and original design) *is issued (gratis) with the "Gardeners' Chronicle" for* THIS DAY, SATURDAY, *January* 1.

The Almanac may be had separately, mounted on rollers, price 6d. post free.

PUBLISHED BY

W. RICHARDS, 41, WELLINGTON STREET, STRAND, LONDON, W.C.

PAXTON'S CALENDAR.

NOW READY, A NEW AND THOROUGHLY REVISED EDITION OF THE

COTTAGER'S CALENDAR

OF

GARDEN OPERATIONS.

ORIGINALLY COMPILED BY THE LATE SIR JOSEPH PAXTON, M.P.

OPINIONS OF THE PRESS.

"We are quite glad to see this useful little book once more, and it is like a whiff of perfume from the heather in bloom to read on the wrapper 'two hundred and twenty-first thousand.' We advise all who are interested in the promotion of cottage gardening to sow this little book broadcast."—*Gardeners' Magazine.*

"The information conveyed in this little book is well adapted for all persons having small plots of ground. The necessary operations for each month are clearly laid down, and are of a thoroughly practical nature. The sorts of both fruit and vegetables are well selected, many of them being excellent in quality. To our readers who are interested in the cultivation of their flower and kitchen gardens, we can safely recommend this as being a most concise and useful work."—*Bell's Messenger.*

"It has been carefully revised by an experienced gardener, and the lists of vegetables, fruit, and flowers have been corrected by the substitution of the most approved modern kinds, in place of those which were mentioned in the first edition, and many of which have ceased to be worthy of cultivation. It is a thoroughly sound, practical treatise; but it has been so long before the public, and so deservedly appreciated, that any special commendation of it now is unnecessary."—*Midland Counties Herald.*

"This is a handy volume, consisting of seventy pages of letterpress and illustration, containing much and varied information likely to prove useful to all cottagers, &c., who possess a garden. To all such, who require a cheap and reliable book of reference, we heartily recommend it."—*Lloyd's.*

Price 3d., Post Free 3½d.

W. RICHARDS, 41, WELLINGTON STREET, STRAND, LONDON, W.C.

WELLINGTONIA GIGANTEA

AUREA VARIEGATA.

	Feet.	Inches.
Height	24	6
Circumference of Branches	32	6
„ of Trunk	3	4
Season's Shoot	1	6

Originated at the Lough Nurseries, Cork.

They have been Planted by the following Royal and Noble Hands:—

His Royal Highness the Prince of Wales, at Sandringham.
Her Royal Highness the Princess of Wales, at Blenheim (to mark her visit).
His Royal Highness the Duke of Edinburgh, at the Vice-Regal Lodge.
His Excellency the Lord Lieutenant, at Althorpe.
His Grace the Duke of Devonshire, at The Castle, Lismore.
His Grace the Duke of Leeds, at Gog-Magog, Cambridge
Her Grace the Duchess of Manchester, Belfast Botanic Gardens.
His Grace the Duke of Manchester, at Tangragee and Kimbolton Castle.
His Grace the Duke of Marlborough, at Blenheim. House.
His Grace the Duke of Wellington, at Strathfieldsaye and Apsley
Most Noble the Marquis of Waterford, at Curraghmore.
Right Hon. the Earl of Abergavenny, at Eridge Castle, Tunbridge Wells.
Right Hon. the Earl of Annesly, at Castlewellan, County Down.
Right Hon. the Earl of Aylesford, at Packington Hall, Warwick.
Right Hon. the Earl of Bective, at Underly Hall, Westmor-
Right Hon. the Earl of Cork, at Marston Hall, Frome. land.
Right Hon. the Earl of Clancarty, at Garbally, Ballinasloe.
Right Hon. the Earl of Devon, at Powderham Castle, Exeter.
Right Hon. the Earl of Ducie, at Sarsden House, Chipping-Norton.
Right Hon. the Earl of Dunraven, at Adare Manor, County Limerick.
Right Hon. the Earl of Harrowby, at Sandon Hall, Staffordshire.
Right Hon. the Earl of Powis, at Walcot Park, Dumbartonshire.
Right Hon. the Earl of Sefton, at Croxteth Hall, Liverpool.
Right Hon. the Earl of St. Germans, at St. Germans, Cornwall.
Right Hon. the Earl of Warwick, at The Castle, Warwick.
Right Hon. the Earl of Wicklow, at Shelton Abbey, Arklow.
Right Hon. the Countess of Kingston, at The Castle, Michelstown.
Right Hon. Lord Berwick, at Attingham Hall, Shrewshury.
Right Hon. Lord Doneraile, at The Court, Doneraile.
Right Hon. Lord Otho Fitzgerald, at Oakley Park, Windsor.
Right Hon. Lord Hawkshaw, at Hollycombe, Hants.
Right Hon. Lord Huntingfield, at Heveningham, Suffolk.
Right Hon. Lord Kenlis, at Virginia Lodge, County Cavan.
Right Hon. Lord Poltimore, at Poltimore Park, Exeter.
Right Hon. Lord Powerscourt, at Powerscourt, County Dublin.
Right Hon. Lord Skelmersdale, at Lathom House, Ormskirk, Lancashire.
Right Hon. Lord Wrottesley, at The Hall, Staffordshire.
Right Hon. Lady Langdale, at Eyewood, Herefordshire.
Right Hon. Lady Russell, at Chequer's Court, Herts.
Right Hon. Lady Pollen, at Redenham Hall, Andover.
Right Hon. Lady Rolle, at Bicton, Exeter.
Right Hon. Lady Tennisson, Carrick-on-Shannon, County Long-
Sir Thomas Acland, Bart., at Killerton, Exeter. ford.
Sir Henry Becher, Bart., at Ballygibben, Mallow.
Sir James Colquhoun, Bart., at Rosshhu, Dumbartonshire.
Sir C. Mills, Bart., at Hallingdon Court, Uxbridge.
Sir D. Norreys, Bart., at The Castle, Mallow.
Sir Richard Wallace, Bart., at Sudbourn Hall, Suffolk.

And by the leading Nobility and Gentry in the Kingdom.

The last-named had 40 splendid Trees for Avenue planting.

PRICES.

*1st Size—	Grand Specimens	5 feet	£5	5	0
2d „	Splendid Plants .	4 „	3	3	0
3d „	Very fine ...	3 „	2	2	0
5th „	Stout and good...	2 „	1	1	0
6th „	Nice little Plants	1 „	0	10	6

* From the first set of plants, and same as those at Sandringham, Blenheim, Althorpe, and had by the Nobility chiefly.

All removed Spring 1875.

RICHARD HARTLAND,
LOUGH NURSERIES, CORK.

MR. LAXTON'S NEW PEAS FOR 1876.

MESSRS. HURST & SON

Have been entrusted with the introduction of the following Two First-class New Peas raised by MR. LAXTON, and which are recommended as being of very high quality and distinct:—

THE SHAH.

A short-strawed, early white wrinkled marrow, of the same height and as early as "Ringleader," described by the Royal Horticultural Society as having very full pods, produced abundantly, and containing from eight to nine very large Peas of very fine quality, and as being an exceedingly fine and and early prolific white wrinkled variety. First-class Certificate Royal Horticultural Society.

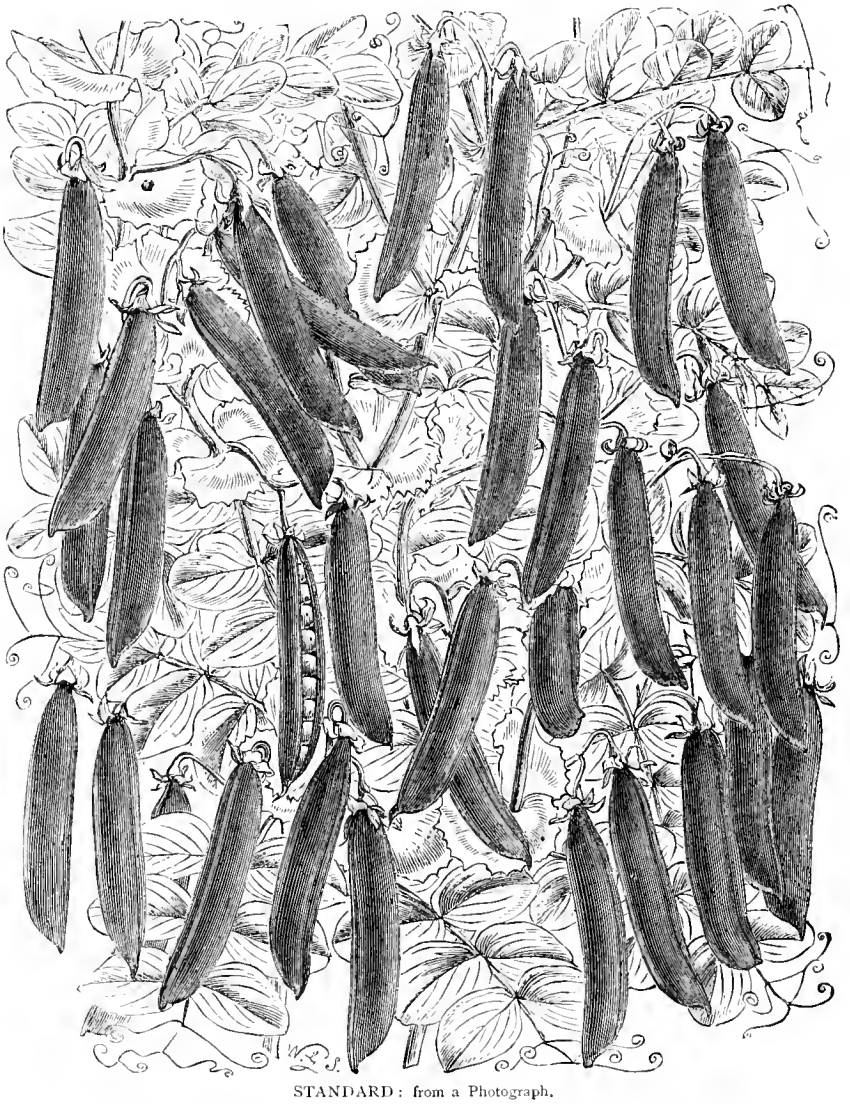
Price 5*s. per sealed quarter-pint packet.*

STANDARD.

Unquestionably the most useful maincrop blue wrinkled Pea yet raised, and will take the same place as a prolific market Pea of high quality amongst blue wrinkled marrows as "Fillbasket" has in round Peas. Described by the Royal Horticultural Society as having long curved pods containing from nine to eleven Peas of large size and excellent quality in each; and as being a very handsome and prolific Pea.

Mr. Laxton, in a letter to us, says, "I cannot find a fault with this Pea," and Mr. Gilbert, of Burghley, says of it, "It is certainly the best Pea I know." Height 3 feet.

Price 5*s. per sealed quarter-pint packet.*



STANDARD: from a Photograph.

The following Novelties of 1875 *can also be supplied:—*

SUPPLANTER.

A first-rate Exhibition Pea of fine quality—the earliest of the "Veitch's Perfection" type. Height, 3 feet, handsome, and very prolific, producing very large pods in pairs; plant very robust and vigorous. First-class Certificate.

Price, 5*s. per sealed half-pint packet.*

CONNOISSEUR.

A most distinct and delicious late Pea, raised from "Ne Plus Ultra." Height 6 feet.

Price 5*s. per sealed half-pint packet.*

UNIQUE.

A very handsome and prolific dwarf early Pea with long deep green coloured pods, coming into use at the same time, and of the same height as "Little Gem." First-class Certificate.

Price, 5*s. per sealed half-pint packet.*

DR. HOGG.

An early "Ne Plus Ultra," coming in one week after Dillestone's. Height, 3 feet. The earliest green wrinkled marrow, very sweet, and of a beautiful deep green colour. First-class Certificate.

Price 5*s. per sealed half-pint packet.*

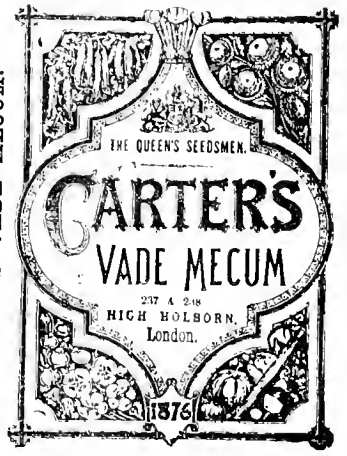
£20 will be offered in Prizes for Mr. Laxton's Peas in 1876, viz.:—£10 in Four Prizes at the Royal Horticultural Society's Show, in July next, for any six varieties introduced by us, to include the "Shah" and "Standard," 50 pods of each; and £10 to repeat the Prizes at the Society's Provincial Exhibition.

"Omega," the finest Late Pea, and "William the 1st," the Earliest Green Wrinkled Marrow, in quantity at Special Rates on application. For other varieties of Mr. Laxton's Peas, see our General List.

HURST & SON, 6, LEADENHALL STREET, LONDON, E.C.

NOW READY,
THE HANDSOMEST CATALOGUE.

Every one who has a Garden should read CARTER'S VADE MECUM.



It contains five Coloured Illustrations and the best Novelties of the Year.

Post Free, 1s. Gratis to Purchasers.

Seedsmen to the Queen. **CARTER'S** Seedsmen to the Prince of Wales.

CHOICE VEGETABLE and FLORAL NOVELTIES for 1876.

PRIZE MEDAL SEEDS

SECOND SERIES.

Caution.—*In future all Novelties sent out by* JAMES CARTER & Co. *for the first time will bear their Registered Trade Mark.*

New Lettuce—American Gathering or Curled.
Any one fond of French Salads should grow this variety. It is so crisp and tender that no sort will excel and very few equal it for this purpose. *Price, per packet,* 1s. and 1s. 6d.

Carter's Heartwell Early Marrow Cabbage.
A distinct and excellent variety, indispensable as an Early Cabbage. The hearts are extremely firm, weighing from 4 to 6 lb., the flavour particularly mild and melting.
Price, per packet, 1s. 6d.

Carter's New Fern-Leaved Parsley.
"Originated in America."
Most exquisite in form and colour—invaluable as a garnishing plant. *Price, per packet,* 2s. 6d.

For full descriptions of the above see
Carter's Illustrated Vade Mecum for 1876.
Gratis to Purchasers. Post Free, 1s.

THE QUEEN'S SEEDSMEN,
237 & 238, HIGH HOLBORN, LONDON, W.C.

SATURDAY, JANUARY 1, 1876.

CONCERNING NUTS.

THE word Nut, which in strictly botanical language has a somewhat restricted meaning, has, on the contrary, in the commercial world, a very wide range, including as it does a great variety of fruits and seeds, from the well-known Cocoa-nut (Cocos nucifera), the Brazil-nut (Bertholletia excelsa), the Sapucaia-nut (Lecythis spp.), to the Walnut (Juglans regia), the Hazel (Corylus spp.), the Chestnut (Castanea vesca), and the Almond (Amygdalus communis); it, moreover, includes many lesser known seeds and fruits of foreign origin, such as the Pistachio-nut (Pistacia vera), Cashew-nut (Anacardium occidentale), &c.

Nuts of all denominations come specially into season at Christmas time, and our fruiterers' shop windows are now filled with heaps of most of those mentioned above. At first it would appear that nothing new or even anything of interest could be advanced on the subject, but we fancy that the importance of the trade in nuts is little dreamt of except by those concerned in the traffic of this branch of the fruit trade, which, taken as a whole, includes Raisins, Currants, Oranges, Lemons, &c.—certainly a wide scope, and one in which the aggregate annual value shows a large figure.

THE COCOA-NUT.

Taking some of these nuts *seriatim*, and commencing with the largest nut known and the only endogenous fruit coming under the term, namely, the Cocoa-nut (Cocos nucifera), we find that this is a graceful coast-loving Palm, and though, perhaps, originally native of Southern India, is now widely distributed by cultivation and otherwise in all tropical countries. Though the leaves and wood are both used by the natives for an infinite variety of purposes, and the latter is imported to this country for ornamental uses under the name of Porcupine wood, it is the fruits that supply the principal economic products, indeed it would be difficult to find any single fruit with such a varied range of appliances. The entire fruits may often be seen in the fruiterers' shops of London, but they are more commonly shorn of their husk, which, under the name of coir, is most extensively used for the manufacture of matting, rope, brushes, &c. The hard shells, likewise, are often converted into cups, either plain, polished, or sometimes elaborately carved. The most important part, however, is the kernel or flesh of the fruit, not so much in its fresh state as an article of food, as in the form of "coppuah," for the expression of oil for candle making. This, indeed, so far as we in this country are concerned, is the chief and most important use of the Cocoa-nut. Under the trade name of "coker-nuts," however, quantities of the fruit are sold by fruiterers and are retailed by costermongers in slices. They are brought from Jamaica, British Guiana, India, Ceylon, and even from Singapore, often as dunnage, to the extent, it is said, of between two and three millions annually. In Ceylon very extensive manufactories exist for the production of Cocoa-nut oil and the preparation of coir.

THE BRAZIL-NUT.

The Brazil-nut (Bertholletia excelsa) is familiar to us for its triangular, wrinkled, woody seeds, known in commerce under the above name, derived from the tree being a native of Brazil, Guiana, and Venezuela, where it grows in large forests to a height of from 100 to 150 feet, and mostly unbranched till near the top. The fruits, which are occasionally seen in our fruiterers' windows, are spherical, nearly the size of a child's head, with a very thick and excessively hard woody shell, containing about twenty seeds, which are the well-known Brazil-nuts. These seeds are closely packed around a central axis, and readily fall out when the fruit ripens and is cut open. The fruits are collected by troops of natives called Castanbier. As they are found beneath the trees from which they fall when ripe, and are split open by the collectors by a sharp blow from an axe with which they are supplied, a popular belief was current at one time that a large proportion of the Brazil-nuts seen in commerce were collected in the first instance by monkeys, in the following manner: the fruits, being detached from the trees by these creatures, fell to the ground with considerable force, the effect of which was to split the fruit and distribute the seeds; the monkeys then set to devouring the seeds, and, being disturbed by the collectors and pelted by them with stones to drive them away, they returned the compliment with showers of nuts, which were, of course, gathered up by the collectors, and carried away to their canoes for transportation to Para. The average annual imports of Brazil-nuts into this country amounts to about 650 tons. It is one of the best dessert nuts known, being of a soft mellow flavour, due to the presence of a quantity of bland oil, which is sometimes expressed and used by watchmakers. The real objection to the Brazil-nut as an article of dessert is the extreme hardness of its shell, and the consequent difficulty in obtaining the kernel.

THE SAPUCAIA-NUT.

Another very agreeable nut, the produce of a tree closely allied to the last-named, is the Sapucaia-nut. This is furnished by two species of Lecythis (L. Zabucajo, Aubl., and L. ollaria L.), large forest trees of Brazil and Guiana. The seeds of the first-named species are those which are more generally known perhaps under the name of Sapucaia. They are about 2 inches long and 1 inch wide, somewhat curved and tapering at both ends, furrowed longitudinally, and with a corky shell. They are of a very soft, sweet flavour; those of L. ollaria are more bitter, and consequently not so agreeable. Both are contained in hard woody fruits, resembling to some extent that of the Brazil-nut; they, however, in common with many others belonging to the same genus, are more urn-shaped, and are consequently popularly known as monkey pots, the origin of which name is thus given by Professor Lindley:—"When the cup of a Lecythis falls its lid drops off, the seeds roll out, and it then becomes a hard pot with a narrow mouth. These pots are used for catching monkeys. Filled with sugar they are placed on the ground which such animals frequent. The sugar attracts the latter, who pick it out leisurely till they are disturbed, when they insert the paw, grasp as much sugar as it will hold, and endeavour to escape with their prize, but their doubled fist, being larger than the mouth of the pot, cannot be withdrawn, and the monkeys, tenaciously holding the sugar, run off with a pot firmly enclosing one paw. This renders it impossible for them to escape from their pursuers by climbing, and they are easily run down." It is said that the monkeys are likewise often entrapped in their endeavours to obtain the seeds from the fruits after they have fallen from the tree and the operculum is removed; sometimes they will thrust each of their fore-paws into a fruit simultaneously, and, grasping a handful of the seeds, are not able to remove them without dragging the fruit with them. The fruit is known to the Brazilians by the name of a Cabomba; and from a saying that is prevalent among them, "He is too old a

monkey to be caught by a Cabomba," indicating a person that is, so to speak, "wide awake," it would appear that the younger monkeys only can be caught in this manner. Though the Sapucaia-nut is such delicate eating, more especially when fresh, it is brought to this country only in small quantities.

THE WALNUT.

The Walnut (Juglans regia), though it comes into season at the end of September or beginning of October, is generally seen in company with other nuts in quantities at this season of the year. The Walnut grows well with us, forming a large tree, and producing its fruits in large quantities in some seasons; its varieties with hard or soft shells, and larger or smaller fruits, are so well known that it is needless to do more than to allude to them. The tree is widely distributed through Europe, Asia Minor, in Kashmir, Nepal, and in Japan; in all these countries it is an important tree for the sake of its fruit. On the Continent and in the East it is much more largely used than it is with us. Eaten raw as a dessert fruit, or pickled in their unripe state, are about the only two forms in which we use them. In France they are frequently preserved in syrup in their green state and eaten as a sweetmeat, or the kernels taken out when fully ripe and coated with sugar; they are similarly preserved in Japan, being coated with fine white sugar, when they form a very delicate confection. Large quantities of Walnuts are sent both from France and Holland to this country. In France they are produced largely in the provinces of Correze Drome, Aisne, &c., as well as in Dauphiny. The correct statistics of the quantities of nuts of various kinds imported into this country are not easily available, but the annual imports of Walnuts may be taken to average about 70,000 bushels. The date of the introduction of the tree for cultivation in this country is by no means satisfactorily settled; by some it is supposed to date from about 1560, but it was probably known even anterior to this.

THE CHESTNUT.

The Chestnut (Castanea vesca), a tree equally well-known with the last, and belonging to a closely allied natural order, namely, the Corylaceæ, claims our notice at the present time, inasmuch as the shining brown nuts are abundant in fruiterers' shops during the winter season, and never more so than just at this period. When the seeds first make their appearance in the London streets as roasted Chestnuts during the month of October, they may safely be considered as the produce of our own country, but later on, supplies to the extent of some 70,000 bushels arrive here chiefly from France, Spain, and Portugal. The Chestnut was at one time considered to be indigenous to this country, but is now proved to be an introduced tree, though cultivated with us from a very early period. It was formerly considered that much of the original woodwork used in the construction of our ancient buildings was of Chestnut, and this was supposed to endorse the view of its very early cultivation in England; it has, however, been proved that much of the supposed Chestnut timber is really Oak. Nevertheless the fact remains that the Chestnut was very early cultivated, and the existence of such names as Cheshunt, Cheston, &c., go to prove this. At the present time the tree flourishes over a large portion of temperate Europe as well as in America. It attains its greatest perfection, perhaps, in France, Italy, and Spain. Several varieties of the tree are known, some of them producing very large seeds, and others known for the short spines on the fruit. Some large-seeded kinds are grown in France and Italy, the seeds of which are known by the name of Marrons. Besides the large size of the seeds of the French and Italian Chestnuts their flavour also varies, the best being of a rich creamy flavour when roasted. Some of these nuts will keep for a very long time, indeed it is considered indicative of good quality that a Chestnut should be capable of being kept for several months, which is often done by placing them in sand, or between layers of straw. In all Continental countries where Chestnuts grow abundantly they are considered in the light of an important food product. In many parts of France and Italy they are eaten after being simply scorched or roasted, as we treat them, but the people also prepare a dish by skinning the nuts, boiling them in water, and seasoning with herbs. A common way of preparing them for future use is by grinding them to a fine flour, which can be kept for any length of time; from this flour puddings, porridge, &c., are made. In many parts of Continental Europe, indeed, the Chestnut may be said to take the place, to a certain extent, of the Potato.

THE HAZEL NUT.

The Hazel is another of the nuts with which we do a large trade with France and Spain. The plant is known to the botanist as the Corylus Avellana, and is a near ally to the Chestnut, belonging as it does to the same natural order. As known to us in its wild state the Hazel is a straggling bush, it never attains to a size sufficient for its wood to be of any great use; the principal applications indeed to which Hazel wood is put are for umbrella and whip handles, fishing-rods, hoops for casks, &c. The tree is widely distributed throughout Europe, a good part of Asia, and northern Africa. The name Avellana is said to be derived from Abella, a town in Campania; be this as it may, some kinds are known as Avelines in France at the present time. The name of Hazel, however, differently spelt but having the same sound, is applied to the plant in Germany, Sweden, Denmark, and Holland. Like the Chestnut it has imparted its name to several places in England—Haslemere being one of them. Numerous varieties of the Hazel are known and cultivated both in this country and on the Continent, thus from Corylus Avellana we obtain Cob-nuts and Filberts of different qualities, besides Spanish and Barcelona nuts. The Cob-nut is distinguished from the Filbert by its round form and thick shell. The Filbert, though always more or less oval in form, varies considerably in the size of the nut, as well as in the length of the calyx. In some varieties this is so long that it quite covers the nut, and remains attached a long time after it has become dry; in others it is much shorter, more fleshy, and separates when ripe. Filberts are very largely cultivated in the neighbourhood of Maidstone. With proper care they can be preserved for a long time, the chief thing is to prevent them drying, and this can be effected in various ways: placing them in earthen jars, covering them with dry sand, and placing them in a cool cellar is a plan often adopted; care, however, must be taken that they do not get mildewy. The name Filbert is derived from Full-beard, which was given to the large husked form to distinguish it from the common Hazel-nut; Gower, the old English poet, however, gives it a more ancient origin, for he says:—

> "Phillis
> Was shape into a nutte tree,
> That all men it might see;
> And after Phillis, Phihberd
> This tree was cleped."

The nuts commonly sold in the shops as Spanish-nuts are said to be coloured in the drying by the fumes of sulphur. Those known as Barcelonas are mostly kiln-dried, and are exported from Tarragona, in the district of Catalonia. So prolific are these trees in Spain that a single wood is recorded to have furnished no less than 60,000 bushels in one year. Nuts of this species are also imported into this country from various ports of the Mediterranean. From Italy likewise quantities of these nuts are imported. From all sources the imports of these nuts amount in some years to between 200,000 and 300,000 bushels. Nuts of fine quality are produced about Toulon, as well as in Languedoc and Piedmont, the bulk of which find their way to the Paris markets. Under the name of Turkey-nuts we import in smaller quantities from Smyrna the nuts of Corylus Cnlurna. They are a roundish nut, with a very hard shell. "Turkey Filberts" are longer and more Filbert shaped, but are produced by the same species.

Occasionally may be seen in the London fruiterers' and grocers' shops a small brown Olive-shaped seed of a horny substance, and marked with longitudinal ridges. These are the seeds of Carya olivæformis, one of the Hickories of North America, and were at one time sold under the name of "Japanese Walnuts." The kernels have a very sweet flavour, and the shells are easily cracked; they do not, however, form one of the regularly imported nuts, and therefore we pass over them without any further notice. We must also pass over others which we mentioned at the outset, including the Souari-nut (Caryocar nuciferum), the hard brown woody seeds of which may be had in small quantities chiefly at Italian warehouses.

THE ALMOND.

Passing on to the Almond, which, like many of those previously noticed, commonly finds a place under the head of nuts on account of its trade classification, we find that the tree (Amygdalus communis), so well known to us for its early spring flowering, is a tree of the Mediterranean, extending into Persia, and cultivated in Italy, Spain, and Northern Africa. The fruit is well known for its similarity to the Peach, containing a pitted stone, enclosing the seed, which is the Almond of commerce. Several varieties of the tree are cultivated, producing the hard or soft-shelled, and the sweet or bitter kinds, in both of which various qualities are known. In France, Spain, and Italy, Almonds constitute a very considerable article of commerce. The highest-priced and best quality Almonds are those known as Jordan and Valencia. They are easily distinguished from other kinds by their long, narrow, and sharply-pointed kernel. The Jordan is the longest, and the Valencia comes next. Large quantities of these come from Malaga; and, notwithstanding their indigestible nature, they are largely used as a dessert-nut. The common kinds of sweet Almonds are used for confectionary purposes—for coating with sugar, &c. Bitter Almonds are used almost exclusively for confectionary and culinary purposes, for flavouring cakes, macaroons, &c., the bitter property being due to the presence of prussic acid—a fact which proves the necessity of care in their use.

Besides the several varieties known to us, there are others which do not reach this country; such, for instance, as a variety known as "Ladies," which is sent exclusively to the United States, and another known as "Princesses," which is consumed in France, Germany, Belgium, and Holland. In the Almond-producing countries the shells are commonly used as fuel. A great deal more might be said on this one item of our subject, but space will not permit; therefore, we will conclude our notes on nuts by pointing to one of recent introduction, namely, the seed of Macadamia ternifolia, an Australian proteaceous plant. This seed, which has not been introduced commercially, has the misfortune of being enclosed in a very hard shell, really requiring a hammer to break it, so that we think there is but little chance of its coming into general use though the flavour is excellent. *John R. Jackson, Kew.*

New Garden Plants.

MASDEVALLIA GIBBEROSA, *n. sp.**

This is the fourth species of the section "Verrucosæ," having, however, the sepals of the Echidna group, but the lip of Verrucosæ, and the blunt warts over the whole rhachis. I have at hand a peduncle nearly a span high, exceedingly remarkable by its being quite covered with innumerable heterogeneous warts, the one small roundish bodies, the other keels projecting as far as the nerves of the leaves. The peduncle has only four bracts, which are much shorter than the long pedicels, which have most distinct articulations with the ovaries. The spider-like flower is dark reddish, the tails of the lateral sepals green. It is very odd to see the lateral sepals, which are connate for about two-fifths at the base, ascending, curved and bent when they get free. The elegance of the minute lip is quite exquisite, and contrasts very strongly with the plump, broad, rhomboid, yellowish petals, when the column has square wings, and is nicely purplish. The cuneate-ligulate acute leaf gets very narrow above its articulation. The plant, a rather Saundersian creature, is a New Grenadian discovery of M. Wallis, and it has just flowered with Messrs. Veitch, whose plant—it may be quite the same, though M. Wallis suspected its coming from Peru ("Peru"? on the label)—is already in my herbarium. The specimen (?) consists of two foot-long peduncles, with the scars of twenty-two flowers, and quite the same characteristic thin persisting pedicels. "And the flowers?" there are none, but a single bud; "And for the leaf?" go to the Cordillera. *H. G. Rchb. f.*

* *Masdevallia gibberosa*, n. sp.—(Verrucosæ.) Folio a petiolari basi tenuissime cuneato oblongo ligulato acuto; pedunculo distanter vaginato, apice racemoso, bracteato, ceterum verrucis carinulisque innumeris elegantissime obsito; pedicellis verrucosis bracteis prope duplo superantibus, perigonio externo ima basi tantum connato, sepalo summo galeato triangulo cordato extenso; sepalis inferioribus ad dimidium fere connatis, ibi abrupte caudatis caudis basi tortis; tepalis rhombeis obtuse apiculatis, obtusangulis; labello lineari stricturis duabus quasi trimembrato; hypochilio integro utrinque angulato angusto, mesochilio rotundo serrato; lamella quadrata dorso serrata obliqua utrinque; epichilio rotundo serrato; columna utrinque quadrato obtusangulo alata.—Sepala atrobrunnea, caudæ laterales flavovirides. Tepala flavorubra. Labellum albidum. Columna pulchra purpurea. Flore comparabiles illis Pleurothallides Sirenis, Glossopopogonis, etc., prope pollicem longi.—Nov. Grenada, Wallis. (Comm. dom. Veitch.)

SIGISMUND RUCKER.

THE name of Sigismund Rucker was such a household word with plant lovers in general, and Orchid growers in particular, that we feel assured that the portrait we are now enabled to give of this gentleman will be appreciated by our readers. Mr. Rucker died on the 19th of October, 1875, and a short notice of his career as a horticulturist will be found at p. 532 of our last volume.

GRAFTING ROSES.

ROSES may readily be increased by grafting to almost any extent, and the operation may be performed at any convenient time from now till the end of February. All that is necessary for the purpose is some small one-year-old Manetti stocks, a bundle of Rose prunings for scions, a sharp knife, some Roiffia grass or matting with which to tie the graft on, and a close moist heat of from 75° to 85° to place them in when worked. The Manetti stocks may be purchased at almost any of the nurseries at a very cheap rate, varying from 5s. to 10s. per 1000. These form the best of all stocks for light sandy soils, on account of the immense number of fibrous roots they make, but for lands that are stiff and contain much clay the Dog Rose is to be preferred. Roots of these may be had by digging them up in the hedgerows, and saving every piece, from the size of the little finger down to that of a quill or Cedar pencil. Even roots from almost any of the common strong growing Roses will do, and many of the climbing varieties of these, such as Gloire de Dijon and others of that class, form admirable stocks to work some of the robust sorts on.

Any roots that may be saved for the purpose of grafting should be cut into lengths of 3 or 4 inches, taking care while doing so to make a distinguishing cut so as to know the proper end on which to insert the scion, as from the roots varying so little in thickness it would be difficult to discern which part to place uppermost after they were cut up. Whether small plants of Manetti are used, or pieces of root of either the common Brier or any kind of Rose, they should be laid in by the heels or buried in soil where they can be subjected to gentle heat for a week or so to get them a little in advance of the scions to be placed on them. The next thing is to obtain some nice hard ripe pieces of wood of any of the varieties of Rose the operator may be desirous of increasing. These should have the spines carefully rubbed off so as not to bruise the bark, and then be cut up into lengths having about three buds on each. One of these should be at the point of the shoot, and the other as near its base as possible, so as to insure nice dwarf plants.

If small plants of the Manetti are chosen on which to place the graft, these should be headed back to within 2 inches of the small fibrous roots, so as to get the scion as low down as possible, and in which position it will in a short time after being planted out be almost independent of the stock, as it will form roots of its own at the point of union.

Having prepared the stock by heading them back as above, or the roots by cutting them up as advised, the next operation is to make a sloping cut on both stock and scion, corresponding as nearly as possible in the length and manner they are made. This should be done much in the same way one treats a quill in forming a pen, only that the cut should be longer, commencing 2 inches up the scion, and terminating at its extreme base. The stock or pieces of root being cut in precisely the same manner, the two surfaces when brought together will fit exactly. After placing them in that position, they should be tightly bound together by using narrow strands of Roiffia grass or soft matting for the purpose. Care must, however, be taken not to bruise the bark of the scion while doing this, otherwise it will turn black and fail to unite. If a little grafting wax or stiff clay is at hand, it may be rubbed over and in between the tie so as to exclude the air from the cut part, although this is not really necessary to success. Where this is not done they should be nearly buried up in the sandy leaf-soil or whatever material is used to plunge them in, leaving only a small portion of the scion peeping out of the soil. With the air excluded in this way I have been just as successful as when grafting wax or clay has been used. If the work is properly done, so that the bark of both stock and scion come in immediate contact, and the heat is kept right, at least 90 per cent. ought to grow, and the operator should not rest satisfied with a less quantity.

One great advantage in this mode of increasing the number of Roses is that it may be done under cover in the warmth of a stove or greenhouse, as the stocks can be kept close at hand in a basket, and the scions in small bundles, but in each case they should both be kept covered with damp moss both before and after the operation of grafting, so as to prevent them from drying. As soon as a sufficient number are worked they should be packed in the propagating box in finely sifted leaf soil and sand, and be kept quite close and perfectly dark for a fortnight or three weeks, or till they show that they require light by the buds having started into growth, when it should be gradually admitted. The heat necessary to be maintained is from 75° to 85°, and this should be kept as regular as possible. If they show signs of being too damp, a slight crack of air should be admitted during the night. Failing a proper propagating box, close fitting handlights may be used for the purpose, and if closely packed each of these may be made to hold nearly 100 plants. Where there is not the convenience of a propagating pit or stove at work in which to place the handlights, a common garden frame set on a bed of fermenting dung and leaves will answer the purpose admirably, and a one-light box will hold sufficient to stock a large garden.

As soon as the young plants show signs of having united, they should be taken out of the propagating box or frame and be potted in 3 or 4-inch pots, according to their size, taking care at the same time not to break or injure any young fibres that may have been formed. The soil most suited to this purpose is a mixture of nice hazel loam and cow-dung that has been laid up for a year, so as to have become well decomposed. After potting they should again be placed in a steady moist heat of from 55° to 65° till they become well established, after which they may be gently hardened off for final planting out in April, or to grow on in pots for forcing. Plants

SIGISMUND RUCKER.

grafted now and treated as above will be found but little inferior to such as were budded upwards of a year ago, and by planting them out or by growing them on in pots they flower splendidly in the autumn, and form capital plants for forcing at a year old.

After February, Roses may still be grafted just as successfully, only at that time young, firm wood from forced plants must be used for furnishing the scions, as the old wood is then in too forward a state for successful results. The treatment necessary for these is just the same as for the others, except that light must be admitted from the first on account of the young leaves of the scions. Roses are often preferred on their own roots, and succeed much better in some soils than worked plants. A very ready way to get up a stock of these is to put in single eyes or buds. This should be done by cutting them so as to have about an inch of wood both above and below the bud, when the bark, with a small portion of wood on the under-side, should be removed with a sharp knife. After cutting them up into lengths in this way the whole should be buried in sharp, moist sand, and be placed in a position where they can get a regular gentle heat, where they will soon be found to callus. When this is the case, they should be potted singly in small pots, and be treated in a similar manner to that advised for grafted plants. *J. Sheppard.*

NOTES FROM CALCUTTA.

Two very interesting reports have recently been received from Calcutta, both dated in June last; one deals with the progress up to the end of March of the Botanical Garden, and the other of the Cinchona plantations in British Sikkim. From the first we learn that a large conservatory is now being erected in the garden, and which when finished will undoubtedly be the greatest addition to the garden that has been made for years. It will give facilities for the cultivation of delicate plants hitherto unknown in Calcutta. "The building is 200 feet long by 66 feet broad. It is relieved in the centre by two spacious transepts, and surmounted by a dome. No timber has been used in its construction, but only light iron beams in masonry supports. The roof will be covered with iron wire netting, on which will be laid a thin sprinkling of thatching grass, and the sides will be enclosed with Jute stick. Experience has shown that of all coverings that have been tried in the climate of Calcutta these answer by far the best—glass, except in the case of a few plants, and when well shaded, being worse than useless for a conservatory. This house is at once light and strong, and as its sides and roof will offer so little resistance to the wind, it is believed that a cyclone could do it but little harm."

The collections, it appears, in the two Orchid-houses, as well as in the other houses, have been considerably increased during the year by large additions received from Sikkim, the Khasi hills, the Andamans, and Burmah, as well as a few plants from the Neilgherries. A number of plants had also been received from the botanical collector who accompanied the Duffla field force. Dr. King points out the necessity of having a collector specially attached to the gardens. He says:—

"When the floral wealth of Assam, Eastern Bengal, of Burmah, and of Western and Southern India are considered, the collection in the garden appears miserably small. In an imperial institution like this the natural productions of the whole Indian empire should, as far as the climate will permit, be represented. I see no way of forming such a typical collection until a good trained European collector is attached permanently to the establishment. At present I have to rely for supplies of plants from distant parts of India on correspondence with private parties, who, although usually very willing to help, are unfortunately often unskilled in botany or gardening, and neither know what plants to send or how to pack them safely for transit. Had I a collector as one of the regular garden staff, I could send him about to distant districts of which the flora is little known or poorly represented in the garden, and the result would be that in a few years a very fine collection might be got together both of living plants in cultivation and of dried specimens in the herbarium. Another great advantage would be that this garden would be put in a position such as it has not hitherto occupied for exchanging plants with similar institutions all over the world."

With regard to the Para rubber plants (Hevea brasiliensis) which have been introduced into India, Dr. King is of opinion that they will not succeed satisfactorily in the Bengal Presidency, but considers that Ceylon, the Andamans, possibly Malabar, and the southern part of Burmah will be found more suited. The indiarubber plant of Madagascar (Vahea madagascariensis) however, seems to promise better. The Ipecacuanha culture up to the present time has not been so satisfactory as was at first anticipated. Experiments were made during the year by planting out at different spots at low elevations in the Cinchona reserve at Sikkim. Some of the plants put out were protected either by a sloping thatch of grass or by the natural shade of the forest, but the cold season killed most of the plants, so that Dr. King reports that he is driven reluctantly to the conclusion that it is doubtful whether Ipecacuanha can be successfully cultivated as an outdoor crop in Sikkim. The experiment, however, will not be abandoned until further trials have been made. It is suggested that the same provinces which would probably suit Hevea cultivation would also answer for Ipecacuanha. Considering that the actual propagation of the Cephaëlis has been so successful in India—there being more than 100,000 young plants in the hotbeds at Rungbee—it is to be hoped that a suitable locality will soon be found for its profitable growth as a crop.

In view of the fact of the bark of the Baobab (Adansonia digitata) yielding a valuable paper material, we are told that a patch of 2 acres of ground in the Calcutta garden has been planted with seedling Baobab, as an experiment to determine whether it can be profitably grown in India for paper-making. With regard to the now celebrated Blue Gum (Eucalyptus globulus) Dr. King reports as follows:—

"Various paragraphs in semi-scientific and other journals, having given rise to an impression that the most fever-stricken portions of the plains of India might be rendered healthy if sufficient numbers of the Australian Blue Gum tree were planted in them, inquiries for seed and seedlings of this species have been numerous. This tree is a native of Tasmania and parts of Southern Australia, where malarious fevers, even of a mild type, are not common, and where the virulent forms so prevalent in India probably do not occur at all. The evidence that plantations of this tree do really have the effect of drying up swamps is not very satisfactory; moreover, repeated experience has proved that Eucalyptus globulus, although growing with great rapidity and vigour on the Neilgherries and Khasi hills at elevations of from 5000 to 8000 feet above the sea, can hardly be got to live even for a year or two in the hot plains of India. It is to be hoped, therefore, that no public money will be spent in attempts to exterminate fever in Bengal by its means."

In the report on the Cinchona plantations in British Sikkim we are told that the red bark (Cinchona succirubra) and the yellow bark trees (C. Calisaya) are practically the only two sorts cultivated, the grey and brown barks having been abandoned—the first on account of its proving so poor in the more valuable alkaloids, and the latter on account of its proving unsuitable to the climate of Sikkim. The plantations both of the old and younger trees are reported as being healthy, and the latter especially luxuriant. As many as 310,000 red bark trees were planted during the year, bringing the total number in the permanent plantation up to 2,390,000. Besides these, the nurseries contain a large number of seedlings both of this species and of the C. Calisaya, to the plantation of which species 60,000 plants have been added during the year, the total number amounting to 354,000 young trees. At first this species did not seed freely in Sikkim, but during the past two years a considerable quantity of seed has been produced. This species, we read, has long been suspected as being liable to sport, or, in other words, that seeds taken from the same tree often produce plants very dissimilar to their parents, and also to each other, in habit and shape of leaf. Mr. Wood's analyses, and also those of Mr. Broughton, go to prove that difference in these respects is accompanied by difference in the chemical composition of the bark.

During the year some experiments were made in the mossing process so much advocated by Mr. McIvor, but the results did not promise well. "The soft, newly formed bark," we are told, "proves highly attractive to ants, which are very numerous in Sikkim, and these insects in many cases removed much of it as fast as it was formed. Moreover in a good many cases no new bark whatever was formed over the wounds." From the thinning and pruning of the plants as much as 39,405 lb. of dry bark were obtained during the year, a large portion of which was made over to the Government quinologist and to the medical storekeeper at Calcutta: Dr. King estimates that during the year 1875 there would be no difficulty in furnishing 200,000 lb. of the bark. The most profitable age at which the Cinchona succirubra trees may be cut for their bark is about eight years, and as the bulk of the plants are now about that age, the time it is said has arrived when the plantation must be worked on some systematic plan. The question as to the manufacture of the alkaloid in India seems to a certain extent settled by the manufacture, by the Government quinologist, of a cheap and efficient febrifuge in the form of an amorphous powder, which is readily soluble in water slightly acidulated with sulphuric acid. This powder has been tried in cases of fever, both in Sikkim and in Calcutta, and proved highly successful.

The report on the whole is very satisfactory, and if Dr. King's anticipations are realised, a still more satisfactory one may be expected in 1876.

DR. PATERSON'S ORCHIDS.

HAPPENING to be passing the Bridge of Allan, near Stirling, the other day, I took the opportunity to visit Fernfield, to see the rich collection of Orchids and other choice and rare plants possessed by Dr. Paterson. I was so much pleased with what I saw, especially in regard to the cultivation of the Orchids, that I consider it worth while drawing the attention of your readers to it as a place that will well repay a visit. It is easily got at, being within ten minutes' walk of the Bridge of Allan Station, and less than 3 miles from Stirling, from whence tramway cars run frequently during the day. The place is not extensive, being purely an amateur's garden, but no lover of plants, either hothouse or hardy, will feel otherwise than highly pleased with a look through it, more especially if accompanied by the genial, learned, and enthusiastic Doctor. This gentleman carefully studies and understands the health, habits, and proper treatment of every plant in his collection, which is a numerous and varied one, although confined within a space of about 2 acres, and in five or six rather small and old-fashioned glasshouses.

The Orchids are a rich and very interesting collection, in a remarkably good state of health and cleanliness, and making fine robust growth, which the Doctor attributes to the low night temperature he gives them, the use of the old common flues to assist the hot-water apparatus in winter, and the application to paths, floors, &c., of a liberal supply of strong liquid manure, or at other times the introduction of heaps of fermenting manures so as to heavily charge the air with ammoniacal vapour while the Orchids are making their growth. No doubt the smell is "something awful!" but Vandas, Saccolabiums, Aerides, and the like, were growing freely, with a fine healthy look, under such treatment in a night temperature of 50° during winter, and I can bear evidence to the freedom with which they flower, from the numerous remains of the flower-stems and the profusion of flower on those still in bloom. A nice spike of Vanda cœrulea, with seven or eight flowers, was almost over when I saw it, but it had been very fine, and the plant was in fine health, being grown in a basket suspended near the glass, where it receives plenty of light and air, which is a material point in keeping it healthy and free from "spot" during the dull days in winter. Neither "spot," scale, mealy-bug, nor any other Orchid pest, appears to be able to retain a footing on the plants under the Doctor's watchful eye and judicious treatment.

In one of the houses under cool treatment there was a beautiful display of Cypripediums, Miltonias, Colax, Pleiones, Oncidiums, Odontoglossums, Lycastes, &c., interspersed with fine varieties of Amaryllis, Vallotas, Hæmanthus, and other rare bulbs in flower, giving the house quite a brilliant appearance at this dull season of the year (November).

Besides the Orchids, there is an almost endless variety of rare and interesting stove and greenhouse plants, the majority of them being necessarily small specimens, but fine, clean, healthy "bits," showing well the characteristic features of each variety. One notable exception to the general size of the plants is a magnificent specimen of the best variety (Veitch's) of Anthurium Scherzerianum, growing with the utmost luxuriance in a comparatively low temperature—about 50° at night in winter and 60° to 65° in summer, allowing it to run up high during the day with sun-heat, taking care to give sufficient air to prevent scorching. Under such treatment, and with liberal cultivation, the Doctor told me that the plant had been in flower since February, producing in that time nearly 100 flowers, and has been exhibited at shows two or three times during the season; still,

when I saw it in the end of last month the last flower was in good condition, and many going off, showing, from their great size and substance, what a splendid sight the plant must have been when in full bloom. It is growing in a 16-inch pot, and measures fully 5 feet across from tip to tip of the leaves, and with such thick, broad, massive foliage, one would expect another grand display of bloom during the incoming year. A photograph of the plant taken when in flower in 1874 gives an idea of it, but it has increased much, both in size of plant and flower since then.

My time was too limited, and it was the wrong time of the year, to properly investigate the Doctor's collection of hardy plants, which is almost as rich, and fully as interesting, as his indoor collection. The whole place is literally crowded with interesting specimens, from the finest of the newer Conifers down to the rarer hardy Orchids and smallest alpine plants, so that at the proper season an hour or two spent among them would afford a great treat to a lover of hardy plants. No one can visit such a place without feelings of deep gratitude to the learned and worthy owner for so freely showing his collections to all interested in gardening, and one may sincerely wish that he may long enjoy the happiness and pleasure afforded in their cultivation. *D. D.*

THE WEATHER FOR 1876.

WHAT should we do if the weather were tabooed as a subject of conversation? Can any more revolutionary notion be suggested than that which such a proposition involves? It may fairly be doubted whether there is any other topic which possesses such negative and positive advantages as this. It may be brought forward in the most mixed society with absolute safety; it is a common ground which men of the most opposite opinions can occupy without running the risk of treading on each other's corns; it is absolutely certain that each day will bring its own contribution to the fund of conversation which is furnished by the subject; and not only is it in itself most various and varying, but it may be regarded from three distinctly different points of view—the past, the present, and the future. Of these the last is certainly the most interesting, and perhaps the most popular. Other persons besides Dr. Cumming are fond of prophesying; and here again the weather comes in as an inexhaustible source of speculation. Those who are acquainted with Mr. Swainson's interesting little handbook of *Weather Folklore*, will have observed how general weather-prophecies are in all countries; and our own is certainly no exception to the rule. Long before "Old Moore" made his famous hit—when he prophecied the fall of snow in June, which actually took place—weather-prophets were in the ascendant; and, indeed, every one is more or less ready to prognosticate rain or fair weather (especially the former) as the case may be. It is, therefore, not unnatural that we should wish to glean from the wisdom of our forefathers some notion as to the weather we may expect during the coming year; or rather during the present year, for before these lines are in type, 1876 will have opened upon us: nor is it difficult so to do.

To begin with—last Christmas Day fell on a Saturday. "What has that to do with it?" some one will say. A very great deal, if we may believe a manuscript dating about 1120, which is printed in Mr. Cockayne's *Leechdoms*. "If midwinter (or "the mass day of midwinter") be on a Saturday, then the winter shall be afflictive, and spring windy, and fruits shall be hard to get, and sheep shall die, and old men shall die, and the innocent shall be held guilty." This by no means pleasant prospect is given in verse in Bohn's edition of Brand's *Popular Antiquities*, from one of the Harleian MSS. in the following amplified form:—

"Yf Crystmas on the Saterday falle,
That wynter ys to be dredden alle,
Hyt shalbe so fulle of grete tempeste,
That hyt shall sle bothe man and beste;
Frute and corne shall fayle grete won,
And olde folke dyen many on;
Whate woman that day of chylde travayle,
They shalbe borne in grete perelle;
And chyldren that be borne that day,
Within halfe a yere they shall dye, par fay.
The somer then shall wete ryghte ylle;
If thou aught stele, hyt shall the spylle,
Thou dyest if sekeness take the."

Other authorities attached equal importance to the day of the week upon which January 1 occurred. Thus, according to Digges' *Prognosticacion Everlastinge* (1596), the following results are to be expected this year, when New Year's Day falls on a Saturday:—"A warm winter, summer very hot, a late harvest, good cheape garden hearbs; much burning plentie of Hempe, Flax, and honey. Old folke shall dye in most places; fevers and tercians shall grieve many people; great muttering of warres; murthers shall be suddenly committed in many places for light matters."

Many similar prophecies to these are given by Mr. Swainson in his already-mentioned volume. We may now glance at another group, from which we may ascertain how to foreknow the weather for each month of the following year by an observance of that which occurs between Christmas and the Epiphany, or Twelfth Day, each day representing the corresponding month. By this means not only the weather but other particulars may be foretold. Of this set of prophecies many examples are also given by Mr. Swainson; the following, which he does not notice, may be taken as a type of them. It is from Surflet's *Country Farme*, a work published in 1600, and translated or adapted from the French.

"If the sunne be altogither beautiful and cleere upon Christ's day, the yeere will be good and peaceable; if upon the second day, gold and Wheate will fall of their former valeu and price; if upon the thirde day, churchmen will fall at variance; if upon the fourth day, young folk will have troubles; if upon the fifth day, all goods will increase; if upon the sixth day, gardens will proove fruitful; if upon the seaventh day, there will be great dearth and famine; if upon the eighth, aboundance of fish; if upon the ninth, a good season for cattell; if upon the tenth, great heavines of times; if upon the eleventh, great foggie mistes and mortalitie; if upon the twelfth, reproves and warfare. Wherefore, if the sunne shine in those twelve daies, and that continually, all these things will come to passe."

The last alternative is certainly very puzzling, inasmuch as some of "these things" seem somewhat contradictory of each other. Others seem likely to "come to passe" whether the sun shines or not; for instance, "churchmen will fall at variance" under any circumstances, even if no sun were seen for the whole twelve days. The direction of the wind on Christmas Eve also furnishes trustworthy grounds for prophesy, if we may believe popular tradition; nor is the moon without her share of influence in the matter. Indeed, a mere *résumé* of the weather traditions connected with the new year alone would occupy many columns of the *Gardeners' Chronicle*, which might, no doubt, be more profitably filled; we will therefore only direct attention to one or two horticultural or agricultural modes of weather divination, which illustrate yet another series of weather superstitions.

The first we take from Surflet, whose *Country Farme* we have already quoted. Should the farmer desire to know (and what farmer would not?) the weather for the approaching year:—

"Let him choose out at adventure twelve graines of corne the first day of Januaire, let him make cleane the fire harth and kindle a fire thereupon; afterward let him call some boy or girle of his neighbours, or of his owne house; let him commaunde the partie to put one of these graines of corne upon the harth made very cleane and hot: then he shall marke if the saide graine doe leape or lie still; if it leape a little, then corne shall be reasonably cheape, but if it leape very much, it shall be very cheape; if it leape toward the fire more or lesse, corne shal be more or lesse deere; if it lie still and leape not, then corne shall stand at one price for this first moneth: he shall doe in like manner with the second graine for the moneth of Februarie, and so in order with the rest of the graines for the rest of the monethes as they follow."

This *modus operandi* was formerly very generally practised in France, and was frequently censured by the clergy as superstitious. A somewhat similar one is the following, which is also practised in some parts of France. Twelve Onions are seleeted on Christmas Day, a pinch of salt is sprinkled on the top of each, and they are then placed in a row, each being considered to represent a certain month, the first being January, the second February, and so on. Twelve days after, on the Feast of the Epiphany, these Onions are examined, and if the salt on any of them has melted, the corresponding month will be wet; if it still remains, the month to which the Onion corresponds will be dry.

Many and various traditions and details might be added did space permit. Those already given will, however, give some notion of the style of presaging which found favour among our forefathers, and which still lingers among us to a considerable extent. It may be, indeed, that we are not so much wiser than those who preceded us as we are accustomed to fancy; it is certain that to a future age the manners and customs of the nineteenth century will furnish at least as much room for animadversion and ridicule as we are now in the habit of bestowing upon the times which came before it. *B. M.*

CHALK AS FUEL.

A FEW remarks from one who considers that "the controversy still raging" as to "limekiln heating" was originated by his letter in the *Times* on "Chalk as a Subsidiary Fuel," may serve, I hope, to dispel at length the prejudices of scientific men, and dispose a larger number of your readers to take advantage of that which, in spite of all supposed difficulties and alleged impossibilities, is a great discovery.

1. If you fill an iron cylinder with one-fourth coal at the bottom and three-fourths chalk above that coal, the chalk after a time will be found in a state of red heat; and so soon as that is the case, the cylinder will emit greater heat, and that heat will endure longer than if the same quantity of coal were burning alone. Yet none of that additional heat is generated by the chalk. It is no more than a large portion of that four-fifths of the heat of the coal which, but for the chalk, would pass up the flue. The chalk simply retains it. The effect of this heat on the chalk is to separate the carbonic acid from the lime. In this operation no heat is generated from the chalk. In the carbonic acid itself there is none. So far, then, the assertion of the scientific objector is correct: "You manufacture lime; and you may retain and utilise a certain amount of heat, which would otherwise be wasted; but you don't get an increase of heat out of the chalk itself."

2. Let us, however, reverse the order of things in our proposed cylinder, and bring them into the real condition of a well-arranged limekiln. We place at the bottom 16 lb. weight of chalk. Above this we place an equal amount of coal; again 16 lb. of chalk; over which we place 8 lb. of coal. This proportion is repeated, and any remaining space may be filled with chalk. Now in this case, as in the other, the upper stratum of chalk will only retain heat—it will not produce it.

But what of the layers of chalk beneath and between the layers of coal? No man either of science or of experience in such matters can deny that the downward radiation of the heat of the burning coal in the lowest stratum soon brings the lowest stratum of chalk into a state of red heat, nor that in that state, especially if the chalk be damp, or if air be admitted, it readily gives out its carbonic acid. He cannot deny that that carbonic acid must rise into the ignited carbon above it, that on its coming in contact with ignited carbon it is converted into carbonic oxide, and that this carbonic oxide immediately adds fuel to the flame or heat of the burning coal. Let the mind follow this process through the ascending strata, and it will be seen that by this double process of first extracting carbonic acid from the chalk, and then of the conversion of that carbonic acid into carbonic oxide, an immense amount of heat is derived from the chalk. And in this way alone can we account for the fact that 1 ton of anthracite shall drive out the carbonic acid from 3 or 4 tons of chalk or limestone, and convert them into good lime.

Let me give two hints as to the use of chalk in ordinary fires or in furnaces.

1. The chalk should always be beneath the coal, and the stratum of coal should be to the chalk in the proportion of at least one part to two parts.

2. The lumps of chalk should bear some proportion also to the size of the grate or furnace—never above 2 inches in diameter. In an ordinary grate they should be about the size of a hen's egg, and in an ordinary cottage grate not larger than a Walnut.

I would conclude with a practical illustration of the former part of this letter.

At the commencement of the recent cold weather I had a new stoker for the furnace with which, on the "Hydro-carbonic System," I warm my church. I directed him at starting to try to use more chalk than his predecessor had done—in fact, to see in how great a proportion he could use it. The furnace is 2 feet from back to front and 9 inches deep. He placed a thin layer of chalk on the bottom; and then, making

his fire of coals in front to the depth of one foot, he filled in chalk at the back as the fire increased in strength. He soon obtained a fire of intense heat, and, persuaded that this heat was produced from the chalk, he continued reducing the space occupied by the coal till it was no more than 6 inches in depth. He admitted that the fire in this state required more frequent tending; which I told him ought not in a chalk fire to be the case.

After the third or fourth day I had to point out to him the important fact that the church was not being warmed as it ought to be. The heat which he found in the stove continued there, or radiated slowly and to a partial extent. So I directed him to place a layer of chalk 6 inches in depth on the bottom of the furnace, and fill up the furnace with coal. He has done so, and ever since the church (and in the same manner my large schoolroom) has been at least as thoroughly warmed as if the furnace had been filled with coal.

Is there no heat in chalk? Is it an impossibility to extract it? Is not chalk a subsidiary fuel? Much more, however, than this is yet to be developed. *Henry Moule.*

P.S.—If in a domestic grate limestone be used, it should be of the softest kind, and the pieces very small.

RHODODENDRONS.

ABOUT the finest of all hardy evergreen shrubs is the Rhododendron, whether you take it for its hardiness, effectiveness in pleasure-grounds, anywhere and in any form—game cover, owing to its freedom from the ravages of hares and rabbits—for its splendid flower, which so beautifies the landscape for many weeks and months together in spring and early autumn—its kindly disposition to being forced into flower early, or its general decorative qualities, which are splendid in the conservatory or elsewhere. All these qualities being put together no other genera can approach or in any way equal them. In parks, where it luxuriates like a Bay Laurel in its native soil, it grows very rapidly, and literally runs along the ground, and roots and perpetuates itself freely. When it does this it makes splendid cover for game. This remark, however, applies chiefly to the ponticum breed; and when it holds good, it is a sure sign that most of the whole tribe of hybrids will thrive equally well. We are indebted chiefly to the Waterers for our great variety of hybrids, which are endless; and seeing that they are such hardy, fine shrubs, it is as well that the variety is great, or the few colours would otherwise perhaps render them too monotonous when in flower.

It is generally understood that the Rhododendron will not thrive in soils that are calcareous, and no doubt this is so: but in plantations where accumulations of leaves, weeds, and sticks have been going on for years and years, they soon establish themselves. Many instances may be pointed out where utter failure to grow the Rhododendron in newly formed gardens has occurred, but when removed from these to the older and shadier parts they have recovered and grown into luxuriant flowering shrubs. No shrubs stand shifting from place to place better than the Rhododendron, and they may be lifted at almost any season, except perhaps just at the growth-making time. The Rhododendron bears pruning and cutting into shape quite as well as any evergreen, and should, therefore, never be allowed to run away unshapely for want of the pruning knife. Standard Rhododendrons are magnificent objects when associated with dwarf ones, and amongst large trees and grass they have a fine effect. It has been noted how well they thrive in connection with Oak trees, much better than with Beech or Elm, and no doubt this is owing to the Oak not being such a greedy surface-feeder as the other trees, and is more contented to take for its motto "Live and let live."

One of the most enjoyable of walks is one of grass 10 or 12 feet wide run through a plantation, and planted on either side with Rhododendrons. Such a one is found at Floors Castle, where a broad border on both sides is planted thickly with thousands of the finer hybrids and ponticums, and dotted at certain distances with standards such as the Waterers of Knap Hill and Bagshot are famed for. Another broad gravel terrace walk borders a portion of the park, above a mile long, and, supported and fenced from the park by a sunk stone dyke, has the wood side planted again with many thousands of the finer hybrids and brilliant standards towering above them at irregular distances. These extensive borderings of Rhododendrons are occasionally thinned out, and other plantations are made gay with the thinnings, and thus a healthy state of matters is kept up for those left and those taken away, both being benefited, and extra growth and flowers is the consequence of those thinnings. All the leaves that fall from the trees are allowed to remain about them, and the rakings of the walk and broad grass border are also scattered in about them during the leaf-fall, and thus a natural protection is afforded them, and at the same time food is supplied in the form of surface dressings, which is the essence of growth to this handsome family.

A common practice with most people is to dig their borders every year. If the object is to have long sticky growthless plants do so by all means, but where a healthy shrubby plant is wanted a spade should never be used after it has been once planted. A Rhododendron is a flat surface-rooting plant, and it stands to reason that if you practise digging for the sake of appearance (?) you must sacrifice the surface feeders, which means simply a stagnation of growth. A Rhododendron is more inclined to root surfacewards and upwards than downwards, and hence we have never hesitated to plant on an old tree stock or on a big stone sooner than go to the expense and trouble of grubbing it out: these have thriven amazingly well, thanks to top-dressings alone. It is useless giving a list of Rhododendrons, for really all are more or less beautiful when the different shades of the same colour are grouped together. As a rule, however, I prefer the standards of the brilliant crimson and rosy kinds with their splendid flowering heads towering above their compeers, with a dense background-work of Privet, Laurel, Bracken, &c. *A.*

ORCHIDS AT REST.

THE resting season, on which we may now be fairly said to have entered, whilst it applies in a direct manner to many Orchidaceous plants, is also much beside the mark, and altogether a misnomer in regard to many others. Coming as these plants do from so many different parts of the tropics principally, and even there found under such varied conditions, it is not to be wondered at, that, taking this large class of plants all through, some one or other of the different genera should be represented by individuals which are resting more or less all the year through. Take the Dendrobiums, for instance: here we have Cambridgeanum, which if grown well and flowered successfully will be in bloom in April on the newly formed growths. The flowering over the plant has only apparently to mature and ripen the already formed bulbs, and all the summer the energies of the plant are directed to the growths of new roots, these latter seldom appearing until the young growth is at least half-formed.

Dendrobium Bensonæ, D. Parishii, and many others which will be readily called to mind, naturally flower during May and June on well ripened bulbs formed in the previous year; these having flowered, the energies of the plant all through the hottest part of the season are directed towards the formation of stout, plump bulbs for the following spring. In this latter case the resting season should be from October to March, in the former from August to December. This is just one case amongst many that might be mentioned, but it is sufficient for the purpose. The individuals, coming from different habitats, retain their own separate characteristics under the somewhat artificial treatment to which they are subjected, and, whether we will or no, take their rest at a time when it would seem to be preferable that they should be growing. This being so, it will be readily admitted that it is impossible to advise a hard-and-fast line or manner of treatment to this extensive class of plants, whilst at the same time it becomes more incumbent upon those who have charge of a collection to make themselves more thoroughly acquainted with the localities, surroundings, and conditions under which they grow; the influences to which they are exposed in regard to sunlight or shade, heat and moisture, whether terrestrial or epiphytal—if the latter, whether found high on the branches or lower down on the main stems; whether, again, if found deep in the recesses of the forest, or only just on the edge of it; all which, as far as it can be gathered from studying books of travel, or from those writings and descriptions we are favoured with from time to time from collectors who have visited the homes of the Orchids, should be carefully read and retained in the memory, as it will assuredly come useful at some future time. This is more important than is usually considered to be the case; and there can be no doubt that greater success will follow the cultivation of the plants when this subject is more readily taken into consideration. *W. Swan, Fallowfield.*

THE CATALPA.

FEW trees are more striking than this. Its bold foliage is always impressive, its flowers rival or even excel those of the Horse Chestnut, while its peculiar long slender pods have a character quite unique among trees grown in this country. It has, however, several drawbacks—it is not quite hardy, suffering severely from spring frosts, large limbs die and fall off suddenly, and, in this country at least, it is short-lived. Still, even from the stump of an old tree, fine shoots are sent up with a force and vigour beyond what happens in most cases, and illustrating forcibly the words of Job:—

"For there is hope of a tree, if it be cut down, that it will sprout again, and that the tender branch thereof will not cease. Though the root thereof wax old in the earth, and the stock thereof die in the ground, yet through the scent of water it will bud, and bring forth boughs like a plant."

The allusion to the scent of water has special appropriateness to this tree, as it thrives best where its roots have access to water. Our illustration (fig. 2) was from a tree in the garden of Denne Denne, Esq., near Canterbury. The tree in question was planted by the late Mr. Masters, who communicated to us the following account of the condition of the tree some four or five years ago:—

"Forty years ago I planted a Catalpa syringæfolia on the lawn near the house, and now marvel at the size it has attained, and the profusion of flowers it is adorned with. At 2 feet from the lawn the stem branches in two, again at 7 feet it ramifies, and five stems are then continued for some feet. Its whole height is 32 feet, and it spreads to a diameter of 60 feet. Some idea of the number of spikes of blossom may be gained when I mention that I counted on 3 feet of the lower boughs 150 spikes. The tree resembles a mass of snow, enlivened with rich yellow and brown mottlings; the arrangement of the inflorescence is such as to develope a rich green mantle of foliage, from which the flowers spring. I have planted many of these trees within the last half century, but have seen none to equal that which I am describing on the lawn at Ellbridge."

Since the date of that note the tree in question began to decline. The dead portions have been cut away, and new growth has taken place. Other Catalpa trees are on record of greater height, but none, so far as we know, with greater sweep of branches than this. A tree at Syon is mentioned by Loudon as 50 feet in height, with a diameter of 50 feet in the branches. The tree is a native of Louisiana, and of late years a very handsome golden-leaved variety has been introduced.

Florists' Flowers.

DRESSING CARNATIONS AND PICOTEES.—The onslaught which Mr. Dodwell has made on my remarks on this subject in no way frightens me, and, what is more, his strictures do not convince me that I was guilty either of ignorance, paradox, or misrepresentation, and I rather imagine that it is the old story of the shield: we have been looking at different sides—Mr. Dodwell from the northern, I from the southern side, for it is a well-known fact that a very different style of flower is favoured by growers of Picotees, Carnations, and Pinks in the two divisions—the Northerners, who are much the most rigid florists, liking much thinner flowers, and designating those of the South mops. Now of the North I know nothing, I have never seen an exhibition there, and my observations applied simply to the flowers exhibited at South Kensington during the last few years as compared with those which used to be exhibited in olden days.

My assertions were these:—(1) That the person who could "dress" a flower had an advantage which no cultivation could give one who was unskilled in that art. I see nothing in Mr. Dodwell's letter to contradict this; he does, indeed, deny my statements as to the possibility of a loose and ill-shaped flower being made presentable. All I can say is I have seen it done; I have seen a Carnation with a burst pod and loose petals transformed into a presentable flower by a few minutes' careful dressing.

I said (2) that the style of judging (mind, I only spoke of the South) was not nearly so strict as it used to be, and I assert it still. I have never been an exhibitor in former years, but I have been a reporter of

the shows, and I have never seen, except in one instance, the flowers raised from their stand to see if they had split pods or were loose. Surely with such flowers as Mrs. Fordham and others Mr. Dodwell can hardly say we have not fuller flowers than we used to have. While on the subject let me say that last year, asking one of our most distinguished northern amateurs about Carnations, he wrote :—"Of course you know there are not more than half a dozen of the old flowers worth growing ;" and one of the largest growers for sale in the North wrote to me this autumn, saying—"I hope the time will come when this over-dressing will be put an end to ;" and as to Mr. Dodwell's rather indignant remonstrance as to the advance in flowers, and the rules being observed with greater stringency, let me say again he is speaking of the North, where I believe his statements hold good.

(3) I said that it seemed to me a very curious thing (though I founded no charge upon it) that while you may pluck out any number of petals in a Carnation or Picotee without its being disqualified, yet that to gouge out the eye of a Dahlia was regarded as utterly dishonest, and so I say still.

Mr. Dodwell refers me to the article in the *Florist* for 1853, by my much-lamented friend Mr. Jeans. I have looked at it, and I find it was written in answer to some such remarks as I have made, and that he said he had maintained the same views, but had seen fit to modify them, so that very able florists for years held the same views which Mr. Dodwell attributes to ignorance ; and although he altered his opinions that is no reason why I should alter mine—indeed, I see no cause for doing so. Mr. Dodwell asks me whether I should not be a little particular in dressing if I had to go before my Bishop. Perhaps so ; but I should not feel inclined to pull out half the few hairs I have left, shave my head, and turn my coat inside out, which I should consider analogous to the "dressing of a Carnation and Picotee." *D., Deal.*

AURICULA URSI.—To complete the history (!) of the Auricula, given on p. 806 of our last volume, we insert the following extract :—"Before this flower got the name of Auricula Ursi, 'twas call'd Anthilia. Now Anthilia was the daughter of one Chiporus, who, in antient times, had the direction of the Garden of the Hesperides ; and of one Temasia, a shepherdess. They had many children ; but Anthilia being the darling, they took a particular care of her education. This girl had but ordinary shape, but a very pretty face ; and was meek and affable, which attracted many lovers. She work'd very well in silk, and took pleasure in meditating and contemplating while employed in that exercise ; for she paid a profound veneration to the gods, and above all, to a constellation in the heavens called Ursa. This young girl was so much in love with that deity that she oftentimes hid herself to pay her vows to it, by making little altars, after her way, and burning aromatick plants upon 'em. One day, when it was very hot, Anthilia would needs go to a neighbouring village, where they were celebrating a religious festival. But, being born in a temperate climate, and unaccustom'd to bear the scorching heat of the sun, she was taken light-headed, and, returning home with great difficulty, died in a few days after. Chiporus and Temasia were unconsolable upon their loss ; but Ursa, who had always had her in her protection, did, in commemoration of the sacrifices she had offer'd, turn her into a flower, to which it gave the name of Auricula Ursi, Bear's Ear. Moral. —The gods never abandon those who have serv'd them ; they not only protect them during life, but vouchsafe rewards after death, that render them immortal." *The Compleat Florist.*

The Villa Garden.

TOWN GARDENING.—Probably no one could be found unwilling to subscribe to the opinion that gardening in towns and cities in all its aspects is a subject of great social importance. Whether we plant a main thoroughfare with Plane trees, or hold a show for the exhibition of plants and cut flowers grown in courts and alleys, it has an interest passing beyond the ordinary scope of gardening ; and the social reformer and the philanthropist note the facts as satisfactory indications of progress. The innocent pursuit of gardening has no debasing associations, rather we hail as a mark of social regeneration the presence of plants in alleys and courts. There must be harmonising influences at work where plants are carefully and constantly tended, for there is a care beyond mere animal instincts and sensual enjoyments. One of the poets, as students of the Eton Latin grammar may remember, wrote :—

> "Ingenious arts, where they an entrance find,
> Soften the manners and subdue the mind,"

and Andrew Marsden, the once noted pugilist, tending his charming Rose garden at Nottingham, is better than Andrew Marsden hammering away at

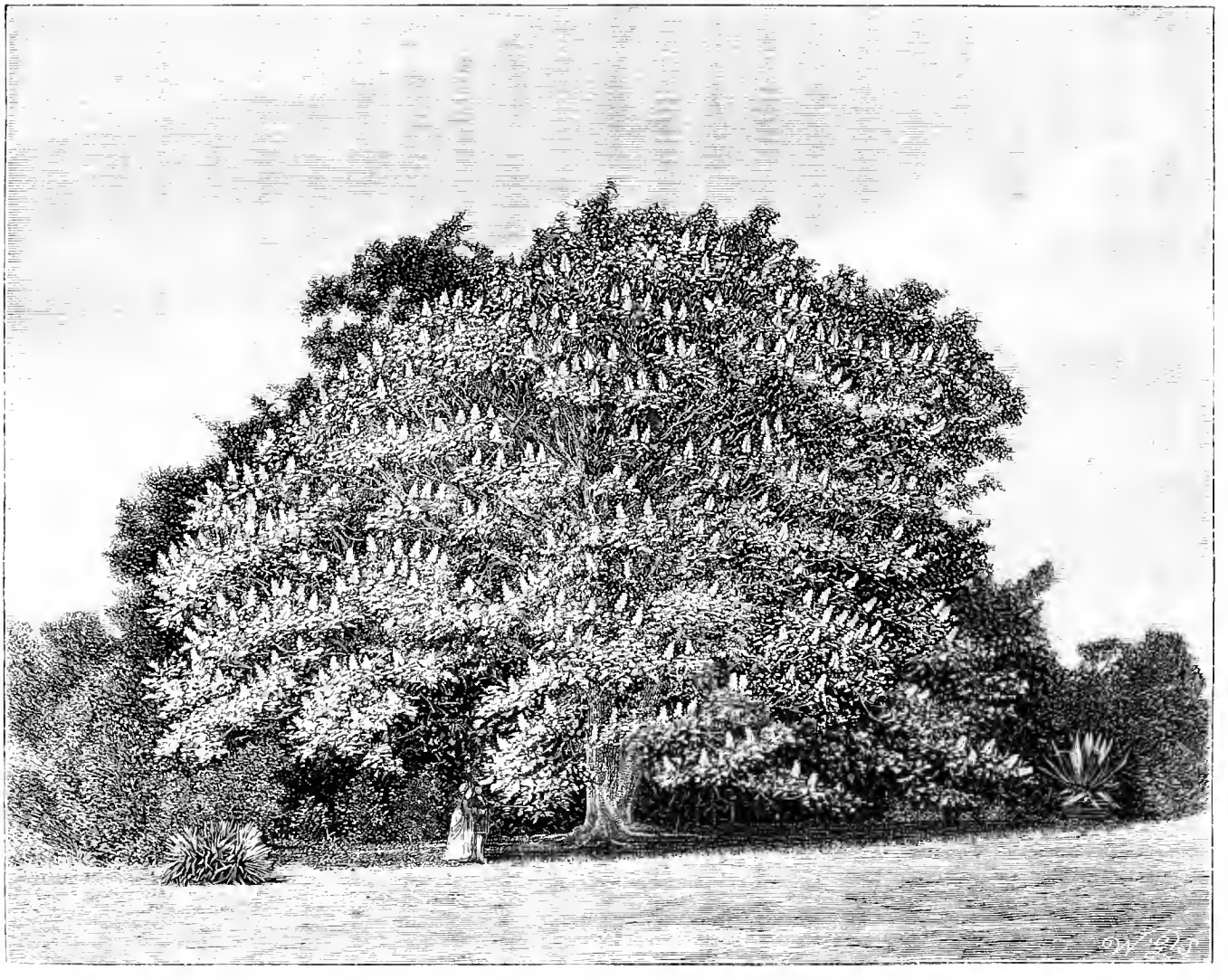


FIG. 2.—A FINE SPECIMEN OF CATALPA SYRINGÆFOLIA.

some miserable fellow-creature's head with all the force of his powerful biceps. One of our contemporaries was not long since rejoicing that a gardener was never known to be a murderer; and perhaps it would not be going too far to say that in a dwelling where plants are cultivated, let the method be ever so crude and homely, there is set up something that may act as a barrier to the development of murderous instincts and brutual designs.

The establishment in the City of London of a society for the promotion of window and area gardening within the limits of "London, rich and famous town," instances the importance which men who are not horticulturists attach to such attempts in the direction of the culture of plants. The city missionary views their presence either within or without the window as a hopeful sign; and Mr. William Thomson, of Clovenfords, once told the citizens of Edinburgh that the same experience fell to the lot of such men in their own midst. Plants then do become to some extent social regenerators, and it is this view of the subject that has prompted city men to give their time and money to the extension of this practice in the city.

Plants can be cultivated inside or outside the window, but the inward or outward position depends a great deal on the character of the plant, whether of hardy or tender character, and the season of the year, whether winter or summer. Some plants, such as hardy evergreen or deciduous plants, *i.e.*, those that shed their leaves each autumn, can be grown on the outside of a window all the year round, but in cases of excessive frost, as we have frequently recommended, the plants should be removed within doors while at the height of its severity, or some precautions should be adopted to screen the roots from its effects. But this matter will be treated on more at length in the order of the cultural directions it is our intention to give. Outside gardening is the common practice in all densely populated districts, for this is a necessity in order that the plants should have the advantage of all the fresh air to be derived from the position. The most unpromising neighbourhoods often show some of the most interesting attempts.

> "There the pitcher stands,
> A fragment, with the spoutless teapot there;
> Sad witnesses how close pent man regrets
> The country, with what ardour he contrives
> A peep at Nature, when he can do no more,"

So wrote Cowper in his *Task*, when describing some of the instincts of the London poor, and their attempts at gardening with such homely accessories were instanced as proofs

> "That man immured in cities still retains
> His inborn inextinguishable thirst
> Of rural scenes, compensating his loss
> By supplemental shifts the best he may."

As all streets are notoriously draughty when the air is actively in motion, and the winds sweep along these in violent gusts, it is of great importance that plants exposed outside of windows should have some security provided against being blown down. We have seen pots hurled by the wind into the streets below, to the danger of passers-by; and it is not too much to require that simple precautions be adopted to prevent this. There should be a fencing provided reaching as high as the pots, so that if a tall plant growing in one of them be blown down, it will not fall from its position into the street. Some homely rustic work, made of the stems of branches of trees with the bark stripped off, would be as appropriate as anything, and it is more in keeping with the companionship of the plants. An ordinary deal construction would suffice. We have seen some in the shape of a miniature gate and rails, and painted a lovely green, but this was decidedly obtrusive, and not at all in simple taste. Fencework of this kind might be covered with the common small-leaved Ivy planted out in the pots at either end, and kept well moistened at the root. In the case of a narrow window-sill these pots of Ivy would take up a good deal of the available space for plants, but then they would give a supply of green leaves all the year round, which is surely something gained. In the case of tall plants, 2 and 3 feet in height, an additional precaution might be taken in windy weather by passing a thin lath or rod painted deep green across the window some 18 inches in height, and fastened to the brickwork on either side. To this the plants might be tied during the prevalence of high winds, for, unless secured in this way, they get blown against each other, breaking their branches, damaging their leaves, and otherwise doing them injury. It is enough that we suggest these precautions; the exact form they should take can be left to the choice of the cultivator.

Another matter of apparently small, but really of urgent importance, relates to the provision of some means by which a level bottom could be made to the window-sill on the outside. All sills, whether constructed of wood, stone, or cement, slope outwards, so that water can flow from them easily. It will be at once obvious, then, that plants in pots would not stand level, but would slope towards the front. This is very objectionable, because, when watered, the water would run from the surface of the soil down the sides of the pots, and a great deal of the indispensable moisture would be wasted. What means can then be adopted to keep the pots at the desired level? We think a common zinc trough, 4 inches or even more in depth, with the bottom a little thicker at the outside, would be an admirable contrivance. This extra thickness on one side would serve to keep it level; and, further, it should be punctured full of holes at bottom to allow moisture to pass freely away. A trough of this kind would, if nicely painted on the exposed side, form also the fencework we have advocated above. More than that, we advocate the addition of an outer compartment, say 3 inches or so in width, which might obtrude this distance beyond the window sill. This added compartment should also be punctured with holes at the bottom, and it could be filled with soil, and Ivy or any other suitable hardy plant placed in it, to form a permanent or, if not permanent, a suitable screen for the time being. Thus there would be a compartment for plants on the exposed side of the proposed zinc trough, while the inner portion would furnish space to stand the other plants in.

It would not be difficult in constructing this screen to have it made in two parts, one fitting into the other in the same way as a smaller piece of piping might pass into another piece a little larger. If this idea were worked out, the trough would suit window sills of varying width, and the required length could be adjusted accordingly. The cost of such a trough would be moderate, and it would last a long time, and prove of great service in furthering the well-being of the plants. But more on this subject anon.

Forestry.

FORESTRY as practised in this country may with considerable propriety be divided into three classes and described under as many distinctive heads, as follows:—1. Profitable forestry, or such as is practised with the exclusive or primary view of yielding profitable returns for the money invested in it; 2. Forestry executed with the view of affording shelter to the adjoining fields and pasture lands; and, 3. Forestry conducted on such principles as to beautify the landscape and adorn the surrounding country.

Upon some estates forestry also embraces the game covert and rendezvous for the fox. Indeed most of the forestry in this country is conducted so as to fulfil not only one but several conditions. I have planted many plantations the combined objects of which were to afford covert for the fox, protection for game, shelter for stock, adornment of the landscape, and profit to the proprietor. Not only are these objects sought to be obtained for a few years, then to dissolve and pass away, but they are designed to fulfil some, if not all of them during an indefinite future.

I shall now only lay down a few of the principal and leading rules for carrying out the most simple yet complex operations of profitable forestry, and leave the other divisions for future consideration. Profitable forestry I shall venture to define as the art and practice of growing the greatest quantity of the most valuable wood upon the smallest area of ground in the shortest period of time at the least possible expense. This definition, whether or not it be regarded as strictly correct, has at least served the writer in good stead at times, when contemplating what mode of operation at any particular period to pursue. Assuming that the operation of planting had been properly performed, which is the basis or groundwork of all good forestry, and that the proper period for thinning had arrived, it is well to pause and reflect upon the path to pursue, so as in due time to fulfil the conditions laid down as above for profitable forestry. To grow the greatest quantity of wood or any other crop is a very desirable thing, and what is usually aimed at by all who cultivate the soil. Quantity, however, is only one thing, and fulfils but one of the few conditions laid down for profitable forestry; and should this one be attained at the sacrifice of any or all the others, evil instead of good would be the ultimate result. The greatest number of trees per acre is not aimed at by the forester, more than the greatest number of Turnips is aimed at by the farmer; and as the agriculturist has found out by practical experience that his Turnip crop of 30,000 per acre is of more value than 60,000, so the arboriculturist has likewise discovered that 8000 trees grown upon an acre are of less value than 1000, and frequently 500 trees are of more value than either. Up to a certain limitation the value of wood per cubic foot increases in proportion to the size of the tree, the quality in both being equal. A large Pine or Fir tree, however, may not be half the value of another of the same species not half so large. If covered with large branches, dead or vital, and bent or crooked in the stem, its quality and value are thereby greatly diminished. Hence the necessity of combining the two objects—quantity and quality. The two terms—number of trees and quantity of timber, should never be confounded, for it is matter of regret how comparatively little thought is bestowed upon this most important branch of forestry. Rent or value of ground occupied by the plantation is also to be seriously considered, for this, as well as the original and subsequent outlay, add very considerably to the cost of producing a crop of wood. In making choice of a piece of ground for planting, it should be carefully examined, to see that it is in every respect suitable for the purpose. If no choice of ground can, however, be had, the next course is to make proper selection and choice of the kind and quality of the plants to be grown upon it.

The money value or rent of the ground does not, however, determine its value for growing forest trees. Larch, for example, may not pay on ground worth 7*s.* 6*d.* per acre, but may yield very profitable returns from ground worth 15*s.* per acre. Scots Pine, on the other hand, may not pay on ground worth 10*s.* for grazing purposes, and yet pay well upon ground worth only 5*s.* per acre.

Time, too, like money, must be taken into account. As a general rule, wood upon good and dear ground should be brought soonest to maturity, cut and cleared, and the ground again replanted or otherwise cropped. I know pieces of Scots Pine forests and plantations upon ground not worth 1*s.* 6*d.* per acre, healthy, and not yet at maturity at ninety years' growth. Such are making wood fast, and will attain probably £200 value per acre by the time they are at maturity. I have also seen Larch plantations upon ground worth 15*s.* per acre cut down as ripe and mature at forty years' growth.

The Scots Pine plantations, therefore, that can stand profitably till ninety years' old, require very different treatment at every stage of growth from the Larch one, ripe and cut at forty years. However inviting this branch of the subject, I must conclude by stating that profitable forestry, in order to be so in the highest sense, must consist of the trees being grouped and not mixed. The most valuable crops of wood or timber I have ever seen were composed of trees all of one species, as Oak by itself, Larch, Scots Pine, Spruce, &c. While it is quite certain that trees of different growth injure each other's tops, it is also far from improbable that the roots, and also the fallen leaves of one species of tree, are injurious to others of different species. *C. Y. Michie, Cullen House, Dec.* 21.

DOGWOOD FOR GUNPOWDER MAKING.—Dogwood (Rhamnus frangula) is supplied in bundles of long slender rods. The bundles are about 6 feet long, and should be 30 inches in girth at 1 foot from the thick end, and diminish about 4 inches in girth at the upper band. The wood must be perfectly free from bark, and clean. Great stress is always laid on the cleanness of the wood used for conversion into charcoal at Waltham Abbey; any traces of bark adhering to it constitute an impurity, and would condemn a supply sent in by a contractor. The specifications imposed on contractors provide that the wood shall be cut in the spring of the year. If this has been done when the sap is rising the bark is easily removed, and the wood is left perfectly clean; but wood cut later in the year, or in winter, is perfectly as good, only in this case the removal of the bark is a much more difficult matter. To separate it the wood must be boiled, or, if that is impracticable, the whole of the bark must be shaved off with a knife or spokeshave. Both boiled and shaved wood have been used at Waltham Abbey, but the great objection to both is that they do not keep so well when stacked as the spring-cut wood, going to decay much faster. *British Trade Journal.*

Garden Operations.

PLANT HOUSES.

PLANT STOVE. — Ferns will now be mostly at rest. Davallias that cast their leaves should have the soil kept a little drier, but on no account should it be allowed to get too dry, as when this occurs the roots are sure to perish more or less, the effects of which will be apparent by their pushing weakly when growth commences. The same holds good of all deciduous species, such as Leucostegias. All the stock, especially where Ferns are largely grown, should now be gone over, whilst the plants are in a dormant state, and receive a thorough cleansing from insects. This is particularly necessary where they have been affected with thrips, one of the greatest pests of the Fern-house, for although the insect may be killed by tobacco-smoke, yet when the plants are in a growing state fumigation sufficiently strong to kill the thrips generally does some injury. Another drawback to fumigating Ferns is that the eggs that are not hatched are secure from the effects of smoke, but neither of these objections apply to dipping the fronds in tobacco-water, which, when they are full grown, may be immersed in the liquid sufficiently strong to destroy both the living insects and the eggs without injuring the fronds. All plants that have been affected with this insect should now be well washed, trying the strength of the tobacco-water by dipping some of the thrips in it; this to be powerful enough to destroy the vitality of the eggs sealed up beneath the varnish-like covering, will kill the mature insect in a few minutes after it has been wetted. In ferneries that are arranged in the natural style, with the occupants planted out, they cannot of course be washed in this way, and there is no chance of getting at them but by using a long narrow trough, and elevating it so that the fronds can be dipped in it one by one. This is a slow method; but, being so effectual, it should be adopted. Where the plants are affected by scale or mealy-bug they should now have a thorough cleansing; the latter insect can be washed off by syringing freely or destroyed by sponging, but for scale there is no chance but going over the plants with a brush, and afterwards using the sponge. *T. Baines, Southgate.*

ORCHIDS.—When the Orchid-houses are left for the night—say at about 9 P.M.—let allowance be made for a gradual lowering of the temperature of about 5° till at 7 A.M.; the various divisions will indicate as follows:—East India house, 58° to 60°; Dendrobium-house, 55°; Cattleya-house, 53°; Odontoglossum-house, 48° to 50°. A rise of 5° by fire-heat during the day should be made above these readings, but be careful that no more fire-heat is used than is absolutely necessary, whilst a further rise of 5° by sun-heat is always advantageous. These temperatures should be maintained during the whole of January, but if severe frosts should prevail it will be better that the readings shold be a little lower, as dry fire-heat is always objectionable. Provided the separate houses open at the temperatures given, it will be advisable that no water be thrown about until the thermometer indicates a rise of 2° or 3°; then pour a little on the side tables, walls, floors, &c., and any watering that is necessary should also be done. Let a little again be thrown about early in the afternoon, so that by evening the moisture may be well-nigh dried up. At all times it is better and safer to have the surroundings of Orchid plants somewhat damper than the plants themselves, and at this season it is especially so. At the same time great care and caution must be exercised that there is no excess of moisture in any part, or damping and rot are sure to make an appearance. Pleiones not already potted must be seen to at once, the best time to pot these being as soon as the flowers are all gone off. These are best grown in round pans, about 6 inches deep; and if a quantity of each sort has to be potted the pans should be about 15 inches across. These should be potted in a mixture of sphagnum moss, peat, small crocks, and silver sand well incorporated together, the centre bulbs being elevated about 3 inches above the rim, and the remaining bulbs gradually brought down to the edge of the pan. After potting stand them in the warmest end of the Cattleya-house, where they will soon root and start into growth, and make specimens which are far more showy and attractive than when grown in 6 or 8-inch pots. *W. Swan, Fallowfield.*

FRUIT HOUSES.

PEACHES AND NECTARINES. — In forcing these by artificial means a systematic and properly regulated course of aërial and superficial treatment is indispensably necessary, in order to insure successful results, and in the management of the roots even more care and attention is involved, as unless the vital energies of these are preserved in a healthful state, failure or an unsatisfactory issue must as a consequence ensue. Under such circumstances it is therefore of primary importance to direct attention to such weighty matters in connection with cultivation, and especially so when subject to artificial treatment, as the state of the soil in which the trees are planted, drainage, &c. Imperfect drainage under these conditions would be the certain forerunner of ruin. Considering that these subjects make rapid and vigorous growth, no manurial agent should be incorporated with the soil. Whatever may be requisite in this respect should be applied by mulchings of manure on the surface, or by liquid matter. Pure virgin loam about 2 feet deep, resting on about a foot of rough drainage, which should be furnished with drain-pipes to take away any superfluous supply of water, will form a good basis for forcing operations. Do not make the whole border in the first instance, but add fresh materials by degrees as the trees require. Avoid embedding the roots too deep, and where choice of trees exists for planting, select those from outside which have had three or four years' growth there, and plant in February or the beginning of March. The buds of the trees in the earliest started house, which for the past month or so has been stimulated by a warm and somewhat humid state of the atmosphere, will about this time be unfolding or nearing that condition. Maintain the night temperature of the house at about 50°, and 5° less under severe pressure from outside; at from 55° to 60° by fire-heat while daylight exists; and when there is sunshine let it range from 65° to 75°—and under these conditions induce a current of fresh air through the house by opening the front ventilators, otherwise slightly ventilate every day at 57°, and close at that degree. When the flowers are fit to be fertilised, take advantage of bright days for the operation, and brush the flowers over with a camel's-hair pencil. It is the practice with many growers to abandon the use of the syringe over the trees during the blooming period; we, however, continue its use in a slight degree throughout that stage of development. Proceed with the annual requirements of thoroughly cleansing, limewhiting, dressing the trees, and bringing them to the trellises in succession-houses, as circumstances permit.

STRAWBERRIES IN POTS. — The introduction of these into forcing-houses is often the means of bringing in that inveterate enemy, the red-spider, but where Strawberries must be had it cannot be avoided unless suitable structures are provided solely for them, which is undoubtedly the best means to adopt in regard to the forcing of this excellent fruit. Where necessity compels the use of vineries, peacheries, &c., for this purpose, a quantity should now be put into some of the recently started houses; on a shelf near the apex of the house they will do well, and as a succession to these start also a batch in pits, where an abundant supply of air can be given; if a little heat can be applied at the roots, by merely standing them on fermenting beds of a very temperate nature as a stimulus it will be beneficial. In the cleaning and preparing of these plants see that no impediment exists in the drainage.

CHERRIES AND PLUMS.—Temperatures identical. If the ordinary necessary preparations for the forcing of these trees have been completed, the house should now be closed and the trees started. By so doing ripe Cherries may be expected at about the beginning of May, and Plums considerably later—at about the end of June. Let the excitement in these trees be effected gradually and slowly; syringe them once every day in the afternoon, and sprinkle the surfaces in the house at morn and eve daily, only apply fire-heat when requisite to sustain a temperature of from 35° to 40° at night, and at about 45° during the daytime. See that the roots of trees which are planted out, also those which are in pots, are sufficiently moist to promote root action. *G. T. Miles, Wycombe Abbey.*

CUCUMBERS.—Winter Cucumbers on demand are now in many places, where formerly they were unknown, as regularly looked for as the supply of fish, but it does not always follow that the facilities for their production have kept pace with the times. To secure a steady supply from November up to March I have found small, well pitched, efficiently heated pits, with a path through them, or a house divided into several compartments, best answer my purpose. Plants intended for fruiting up to Christmas should be raised in August, but for a continuance of the supply seeds sown about the second week in September best answer the purpose. These may be planted out or grown in pots—I give preference to the latter, plunged in good Oak leaves immediately over the bottom-heat pipes; the compost—good turfy loam, a little peat, with a liberal admixture of old lime rubbish. Leaf-mould or other decaying vegetable matter is never used for winter work, as it only encourages worms. The vines should be trained thinly on a movable trellis that can be raised or lowered as the leaves approach the glass, which must be kept clean. Assuming that the September plants have been kept denuded of male blossoms and fruit up to the present time, the trellis will now be covered with free healthy growths fit for carrying a crop, of which a moderate number may be allowed to swell. Water with weak tepid liquid-manure, and maintain a steady bottom-heat of 80° to 85°, as nothing is more injurious to the Cucumber than sudden fluctuations of heat. The night temperature may now approach 70°, with a rise of 10° to 15° by day. Admit air on all favourable occasions when the thermometer exceeds 80°, and close early with a moist growing atmosphere. Crop lightly. Impregnate female blossoms. Apply sulphur to the leaves should mildew attack them, and fumigate with great care should green-fly put in an appearance. A good supply of fermenting materials may now be brought together, and thrown up on a dry sound bottom in the reserve ground, where it must be turned several times to sweeten before it is used for succession plants in pits and frames. Sow a few seeds singly in small pots, and plunge in bottom-heat near the glass. I find Cox's Volunteer one of the best for general purposes. *W. Coleman, Eastnor.*

HARDY FRUIT GARDEN.

Should the weather continue mild the operation of planting in the various departments may be safely proceeded with, but if frosts set in the planting must be deferred for a time, as on no account should fruit trees be planted when the soil is at all frozen. The work of preparing composts may then, however, be proceeded with, and it may be wheeled to the various stations where required. It is always best when planting fruit trees in old garden soils to remove a portion of the old soil, and supply its place with fresh compost prepared principally from virgin soil, which should be placed in contact with the roots, more particularly in heavy soils deficient in friability; and unless the soil is particularly light much treading must be avoided.

Pruning, nailing, or tying in of wall fruit trees must be pushed forward at every favourable opportunity, for as the season advances so much work will press on all sides that wall trees if left so long are apt to be neglected and only partially unnailed, which is not well, as the shreds are great harbours for a variety of insect pests, and should be annually removed if possible, and if any are used again they should be thoroughly cleaned. The trees likewise, when unnailed, should be dressed over with blight composition. A very good one for the purpose may be made in quantity—say 2 gallons (which will paint many trees), by mixing intimately in a dry state equal quantities of soot, lime, and flowers of sulphur. Boil 2 gallons of water, and dissolve in it 1 lb. of Gishurst Compound, and then stir in the dry mixture until it becomes of the consistence of thick whitewash. This should be applied to the branches with a good-sized painter's brush, commencing at the bottom of the branch, and working upwards—never the reverse way, as that endangers the buds. Care must, however, be taken that every part of the branches is well covered with the composition, and as soon as it is dry nailing or tying in may be at once proceeded with. Apricots should be finished off as soon as possible, as they will be the first to expand the bloom and therefore the first to require protection, which in cold and exposed localites is an absolute necessity.

There are several modes of applying protection; most practitioners have a favourite one best adapted to locality or circumstances, but whatever mode is chosen, let the material be ready for any emergency, such as often arises in our uncertain climate: for example, 3° or 4° of frost following after rain will prove very destructive, whereas with a dry searching wind they will submit to 8° without the slightest injury. Plums, Pears, and Cherries will follow after the Apricots, but as they bloom later few of them call for protection, and of those few only the very early bloomers, such as the Marie Louise Pear, which always deserves a slight protection, if it be only a few Fir branches suspended over the blooming trees. Peaches and Nectarines must be left for some time yet. Figs also must for the present remain under protection, let the weather be ever so mild.

The pruning of Gooseberries and Currants may be proceeded with in open weather; when pruned dress the trees with slaked lime, spread some good rotten manure over the surface and dig it in, but do not move the ground too deeply; this is more particularly necessary with Black Currants, as they root very near the surface, and as they like plenty of manure it should be laid on thickly, and only just pricked in with a fork. Raspberries must have attention, and, if not already completed, the canes should be thinned out, the remainder securely fastened, and the ground between the rows well covered with manure, but not at this late season pricked in, as the roots are now in action, and if the ground is dug at all it should be done very early in October, which gives the plants time to make fresh roots. As a rule, it is desirable to grow Raspberry canes as strong as possible; anything, therefore, which tends to check root-action is to be avoided. Young plantations of these and also of the smaller bush fruits generally, may be made; let the ground be well trenched and manured. The pruning of pyramid and bush trees of Apples, Pears, and Plums may be deferred for a time, as the wall fruits are generally of most importance, and claim attention first. *J. Cox, Riddlesf.*

HORTICULTURAL EXHIBITIONS, 1876.

JANUARY.

19.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.

FEBRUARY.

16.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.

MARCH.

1.—Royal Horticultural Society, South Kensington, Meeting of Fruit, Floral, and Scientific Committees.
14.—Manchester Botanical and Horticultural Society. Floral Meeting at the Town Hall.
15.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
15 and 16.—Leeds Horticultural Society. Spring Show.
29.—Royal Botanic Society (Regent's Park). Spring Show.

APRIL.

5.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees
19.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
25.—Manchester Botanical and Horticultural Society. Exhibition of Auriculas, &c., at the Town Hall.
26.—Royal Botanic Society. Second Spring Show.
27.—Royal Horticultural Society of Ireland. Spring Show.

MAY.

3.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
17.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
18.—Royal Horticultural Society of Ireland. Second Spring Show.
24.—Royal Botanic Society. Summer Exhibition.

JUNE.

2 to 9.—Manchester Botanical and Horticultural Society. Annual National Horticultural Exhibition at the Town Hall.
7.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
7 and 8.—Royal Horticultural Society. Great Summer Show.
14, 15, and 16.—Grand Floral Fête at York.
21.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
21.—Royal Botanic Society. Summer Show.
29.—Royal Horticultural Society of Ireland. Summer Show.

THE

Gardeners' Chronicle.

SATURDAY, JANUARY 1, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Jan. 3	Sale of Dutch Bulbs, at Stevens' Rooms.
TUESDAY,	Jan. 4	Sale of Poultry and Pigeons, at Stevens' Rooms.
WEDNESDAY,	Jan. 5	Meeting of the Entomological Society, at 7 P.M. Sale of Hardy Trees and Shrubs, Roses, Fruit Trees, Bulbs, &c., at Stevens' Rooms.
THURSDAY,	Jan. 6	Sale of Lilium auratum, at Stevens' Rooms.
FRIDAY,	Jan. 7	Sale of Scientific Instruments, Photographic Apparatus, &c., at Stevens' Rooms
SATURDAY,	Jan. 8	Sale of Shrubs, Roses, Fruit Trees, Bulbs, &c., at Stevens' Rooms.

IT is, on the whole, rather a rueful retrospect that presents itself to us in looking back over the horticultural EVENTS OF THE YEAR. The weather—always the weather !—was about as unpropitious as it could well be: gardening, in too many cases, was carried on under difficulties not of our own making. Nothing of any very great importance in the domain of practical gardening occurred. Our leading Horticultural Society exhibited to the shocked gaze of bystanders a series of dying struggles which made us long to promote the euthanasia, and begin again at the task of thorough reconstruction and reorganisation. Warned by past failures, the Society should mind its own especial business by advancing gardening and gardening interests in all their bearings throughout the empire, and set its face against work which can be much better done in other ways. But if the prospects of the whilom leading Society have been depressing in the extreme, such has not been the case elsewhere. At home and abroad exhibitions have followed exhibitions with bewildering rapidity, and many of them have been of great excellence, though in most cases there has been a tendency to exalt the "show" at the cost of gardening in general. The great sensation of the year from this point of view was the exhibition at Edinburgh of two monstrous bunches of Grapes, weighing respectively 25 lb. 15 oz. and 26 lb. 4 oz. We do not desire to encourage this sort of thing, as, after all, it is more curious than useful, but we are bound to record so extraordinary an occurrence.

The two largest and most important Continental exhibitions were those at Cologne and Ghent respectively, the former not equal to the expectations formed of it, though remarkable on several accounts. Our own exhibitors—VEITCH, WILLIAMS, BARRON, LAING, CARTER—well sustained British horticulture on this occasion, as well as British pluck and enterprise. The Ghent fruit show, held in connection with the meeting of the Pomological Society of France, was a great success, and was marked not only by a very fine display of fruits, but by that hearty cordiality and profuse hospitality which our Belgian friends never lose an opportunity of manifesting. We can only regret that Messrs. LANE were the only English exhibitors spirited enough on this occasion to carry the flag of Britain to the Belgian soil.

Reverting to home affairs, one of the most startling occurrences was the appearance of a disease in the Potatos—by some said to be different from any others, by others to be merely the old "curl." It was marked by peculiarities recorded at the time, and which we have not space now to revert to, and was all but confined to varieties of American descent. It was reserved for Mr. WORTHINGTON SMITH to show that this so-called new disease was in reality only a form of the old Potato disease, and to make manifest the "resting-spore" of the Potato fungus, and thus supply a void in the history of the plant which observers at home and abroad had been keenly anxious to fill up. It is not surprising that practical Potato growers should fail to perceive the full import of this discovery. Depend upon it, the practical gardeners of the time did not perceive the full import of Solanum tuberosum itself when it was first brought under their notice. But when it is remembered that the clearing up of the mystery attaching to the resting-spore means the discovery of the two sexes of the plant by whose agency the fungus is reproduced, it will be at once understood that Mr. SMITH'S discovery is not one merely for British microscopists and botanical students to exult over, but is one of cardinal importance for the Potato grower. There is no cure for an unknown disease, is a well-known axiom in medical practice. It is as true in the case of plants. Till we have a satisfactory basis of ascertained fact to go on, all theories, all blind gropings after preventives and cures, are next to useless. We are, then, justified in looking on Mr. SMITH'S discovery as *the* event of the year from the point of view of scientific horticulture. Its ultimate practical results may be, must be, delayed, but they seem to us as certain as that day follows night, and we think it not a little noteworthy that this discovery should have been brought forward at the Royal Horticultural Society during the period of its greatest depression. Of course we know that in all probability the discovery would have been published elsewhere if not there; still, as a striking illustration of what among other things a Horticultural Society should aim at doing, the fact is worth attention, and the recognition of Mr. SMITH'S labours is an act which lends a glow, which forms a pleasing contrast, to the tale of distress and trouble pertaining to the poor old Society.

The year past, too, has seen the organisation of a Club for the social intercourse of horticulturists, which we would fain hope may become the nucleus round which horticulturists may gather to concert measures for the common good, and to promote good feeling and fellowship among those interested in the same pursuits. Should the Royal Horticultural Society fall to pieces—commit "happy despatch," or be strangled—the importance of having an organised body of horticulturists at hand ready to lend their aid in starting afresh can hardly be over-estimated.

That year would indeed be an *annus mirabilis* in which the Great Destroyer did not remove some of our dearest friends and strongest supporters. This year we have to lament the loss of such staunch horticulturists as SIGISMUND RUCKER, ANDRÉ LEROY, JOHN STANDISH, WILLIAM ROLLISSON, JOHN GIBSON, and many others, while KINGSLEY, LYELL, and GRAY may be mentioned among those who, not directly, but indirectly lent their aid in promotion of that science and that art in which we are so much interested. Abroad GHELLINCK DE WALLE and GUSTAVE THURET were among the greatest losses; while among botanical collectors we have to regret the decease of ENDRES and BRUCHMUELLER.

Although from various circumstances, to some of which we have alluded, an atmosphere of depression has hung over horticulture generally in the past season, yet happily there are no grounds for permanent anxiety. Never were there more gardeners; never more persons interested in gardening pursuits; never was the thirst for knowledge and the desire of progress greater. We see it on all sides; we acknowledge thankfully that we feel the advantage of it ourselves. We can formulate no better wish for the incoming year than that gardening in its most catholic aspect, and all who love it and live by it, may prosper exceedingly.

—— To M. ROEZL belongs the merit of having discovered the superb POINSETTIA PULCHERRIMA PLENISSIMA, and to the Messrs. VEITCH & SONS, of Chelsea, the credit of introducing it to the gardens of this country. When first the rumours of its existence were heard they were received with doubt, but this was at once dissipated when the dried specimens were seen, the chief doubt then remaining being as to whether the plant would bear up against the vicissitudes to which it had been exposed, or whether it might not be lost altogether. Happily these doubts are resolved by the specimens—imperfect though they have been—which have been flowered during the present autumn by Messrs. VEITCH and some of their correspondents, and on which our illustration on the opposite page (fig. 3) is based. The plant is of vigorous habit, with bold foliage, which has the margins very prominently angulate-lobed, a feature which may be traced in the ordinary forms, but is much more strongly pronounced in the double variety, so much so that, making slight allowance for the position whence the cutting was obtained, even the young stock plants can be singled out by this peculiarity. As in the ordinary forms of Poinsettia, the stems terminate in a corymboso-cymose inflorescence, this being surrounded by large lanceolate or spathulate acuminate, and brilliantly coloured floral leaves or bracts, which are attenuated towards the base, and form a setting for the heads of inconspicuous flowers. These bracts in the imperfectly developed specimens, which, doubtless owing to rapid propagation, have only as yet been produced, formed a head of about 15 inches across, the bracts themselves being here and there angularly lobed like the leaves. It is at first sight difficult to imagine how a plant of this character can become double; double-flowered indeed it is not, the duplication consisting in the repeated and unusual ramification of the cyme, each branch being accompanied by a new series of bracts, until, as has been observed in wild specimens, a corymbose head of bracts a foot across and upwards of a foot in depth has been produced. M. ROEZL'S sketch shows a specimen of this character, and that it is no exaggeration the dried specimens sufficiently attest. This stage has not yet been reached in the cultivated plant, probably—as already suggested—from the weakness induced by rapid and it may be excessive propagation, but the same kind of development, namely, the repeated dichotomy of the normal branches of the cyme, and the production of additional bracts at the base of these further ramifications, has been very fairly represented in the best specimens which have been grown for Messrs. VEITCH, but which unfortunately did not reach them in time for exhibition at the last meeting at South Kensington. The colour of the floral bracts is of a bright light crimson with a flush of rose, a charmingly pure and at the same time soft and pleasing hue. Judging from the growing plants, we should think it likely that this double form of

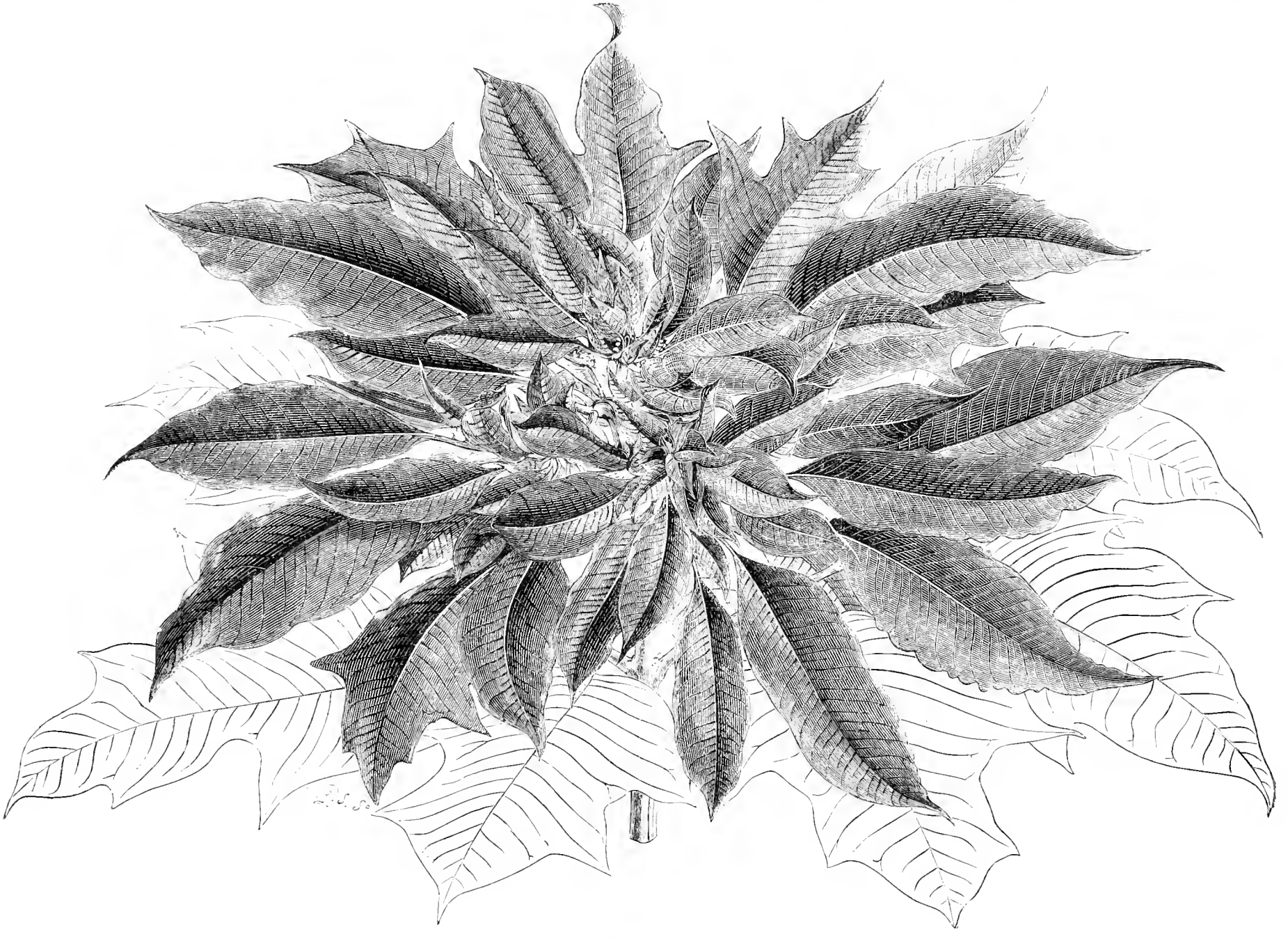


FIG. 3.—POINSETTIA PULCHERRIMA PLENISSIMA.

Poinsettia will remain long in beauty, for it appears probable that after the original series of large bracts have gone through their course of development, and either fall off or have to be removed, the younger bracts developed in the course of the branching of the original axis of in florescence will hold on, and thus considerably prolong its period of beauty. The crowded mass of bracts which make up the central mass, are, it should be explained, smaller in size than those first developed at the circumference of the inflorescence, but equally bright and effective in their colouring. *T. M.*

—— At a recent meeting of the Central Horticultural Society of France, M. FERDINAND JAMIN brought under notice several APPLES AND PEARS, the names of which are unintelligible or meaningless. KNIGHT'S Eyewood Pear is among them, the etymology of the word Eyewood being an unsolved problem. It appears that this variety is now very widely cultivated, even as far north as Norway. There is, moreover, an Apple widely diffused in France under the name of Lineous Pippin, which some have transformed into Linnæus Pippin, in order to make sense of it. This variety was received in 1840 by the elder JAMIN from the Horticultural Society of London, and the label was as illegible as English writing often is, so that it was impossible to make out the name. Perhaps some of our readers may be able to say what this variety is, and make amends for the bad writing, which we fear is only too true, but not worse than in the case of our neighbours. We have all heard of Joseph-on-the-Palings, Auparels, Siknofurders, &c., and as the derivation of these wonderful appellations has been cleared up we do not despair about the Lineous Pippin.

—— Part iv. of the *Bulletin of the Bussey Institution* (Cambridge, Mass.) contains an article by Mr. F. H. STORER, Professor of Agricultural Chemistry, ON THE FODDER VALUE OF APPLES. It is known to almost every one who has had anything to do with cattle, that they will eat Apples with a great relish; but in this country, when there is a superabundance of Apples, the pigs get the windfalls and refuse, more to get rid of them than as an article of food. A favourite horse or cow occasionally gets an Apple as we give sweets to children. In the United States, where such vast quantities of fruit are grown, there is often considerable waste from the prevalent idea that, even if not really hurtful, as some believe, Apples possess no nourishing properties to recommend them as food for animals. The results of the analyses made by Mr. STORER show that Apples can only be profitably used as fodder in conjunction with some highly nitrogenous food. The statement in Johnston's *Catechism of Agricultural Chemistry*, that "Apples are much used in some parts of the United States for feeding milch-cows and pigs, and are reckoned about equal to their own weight of Potatos," is too broad, says Mr. STORER, "for the practice is by no means a general one. As to their value when judiciously given with other food very little is known at present. The most noteworthy feature in the composition of the Apple is the very small proportion of albuminoids that are contained in it as compared with the amount of carbo-hydrates. Mr. STORER found the average percentage constituents of the flesh of the varieties analysed as follows:—Albuminoids, 1.43; carbo-hydrates, including fat, 91.59; cellulose, 5 54; ash (free from C and CO_2), 1.46; and the proportion of dry matter (including ash) in the fresh material, 16.84. In the analysis of "Pomace" the figures are respectively:— Albuminoids, 4.30; carbo-hydrates, 76.39; cellulose, 17.11; ash, 2.19; proportion of dry matter, 22.79. The writer insists that both Apples and Pomace (pulp from the cider-mills after the juice has been expressed) are far too valuable to be used directly as manure.

—— There are some interesting details in the Report of the Director of the ARNOLD ARBORETUM, at Cambridge, Massachusetts. This arboretum has been in the course of formation since 1872 on a portion of the "Bussey Farm." We do not know the extent of it, but a catalogue of the ligneous plants growing spontaneously on it previous to 1872 comprises no fewer than eighty-two species. Nearly half of these indigenous species are trees of moderate or large size; a wonderful contrast to the woody vegetation in the same latitudes on this side of the Atlantic, and, indeed, in the whole north temperate region of the Old World. A second list is a catalogue of all the ligneous species raised during the last two years in the arboretum, and the Director, Mr. C. S. SARGENT, may be congratulated on the rapid progress he has been able to make in so short a period.

—— We understand that the Directors of the ROYAL AQUARIUM and SUMMER AND WINTER GARDEN, Westminster, have placed the whole of the arrangements for their floral and fruit exhibitions in the hands of Mr. JOHN WILLS, of the Royal Exotic Nursery, Onslow Square, South Kensington. Mr. WILLS has to frame the schedule of prizes, and arrange the shows; and to avoid any imputation of unfairness, or other uncharitable insinuations, has determined not to compete for any prizes himself; and he has shown such taste in the many large floral displays which he has carried out, that we are sure his disposition of the subjects exhibited on these occasions will bring no discredit to him. On the subject of Chrysanthemums in October (see p. 813, vol. iv.) Mr. WILLS writes:—

"I am very much obliged to 'D.' for the gentle reminder that a mistake has occurred with regard to the date of the Chrysanthemum show at the Royal Aquarium and Summer and Winter Garden. My great object in recommending the Chrysanthemum and fruit show to the directors of the above company was more with a view of producing a grand fruit show than anything else, the Chrysanthemum being only a secondary consideration. I had at first arranged to hold the show in the third week in November, but on re-considering the matter, I found it would be too late for good Grapes and other fruits, and then determined to have the show on October 4 and 5. I have, therefore, struck the Chrysanthemums out of the schedule, and have introduced classes for other plants instead, at the same time increasing the prizes for fruit. I have no doubt the prizes offered will bring together the finest exhibition of fruit ever seen in London, and as the general public will be admitted after 5 o'clock on each day, I have as little doubt of the show being a great success, and that my efforts will be very much appreciated by the London public generally. I have arranged separate classes for the Channel Islands fruiterers, so that the English growers may stand a fair chance of competing. The following are a few of the prizes offered for fruit:— Two Queen Pines, 60*s.*, 50*s.*, 30*s.*, and similar prizes for other varieties of Pines. For ten bunches of Grapes, £12, £8, £6. There are six classes for various kinds of Grapes, three bunches in each, and the prizes are in each class 75*s.*, 60*s.*, 40*s.* Then there are two classes for baskets of Grapes, 105*s.*, 80*s.*, 60*s.* For the best collections of miscellaneous fruits, £20, £15, £10. For twenty dishes of Potatos, £5, £3, £2. For twenty-four dishes of dessert Apples, £9, £6, £3. For twenty-four dishes of Kitchen Apples, £9, £6, £3, and similar prizes for Pears, &c."

—— The Committee of Statisticians and others appointed to consider whether the number of Fellows annually elected into the ROYAL SOCIETY (15) is sufficiently commensurate with the increasing numbers of workers in all branches of science, has recommended that no change be made in the number of elections at present. The effect of this limitation is to maintain the number of Fellows at about 430, exclusive of foreign members. The committee in making its report has done so on the following grounds:—"Considering that the Royal Society is no longer, as at the time of its foundation, the only scientific corporation in the kingdom, but that numerous societies have arisen, devoted to one or other of the sciences, it appears to be thought generally desirable that the Royal Society should be distinguished by consisting of those persons who may be regarded as the representatives of, or the most active and successful workers in the different departments of science, in association with promoters of scientific research and men of signal eminence in statesmanship, art, or letters."

—— In the course of his researches on the PRODUCTION OF SUGAR IN THE URINE OF ANIMALS, communicated to the Royal Society, Dr. PAVY has ascertained that inhalation of the fumes of burning Puff-ball—Lycoperdon giganteum—is rapidly productive of saccharine urine. The active agent of Puff-ball smoke is carbonic oxide gas, which is known to produce the same effect.

—— In the first quarterly part of the *Bulletin de la Société Agricole d'Angers* there is a description, &c., of the APPLE REINE DES REINETTES, from the pen of the late M. ANDRÉ LEROY. This excellent Apple is little grown in this country, at any rate under any of the numerous synonyms assigned to it by M. LEROY. It is the Kronen Reinette of VAN MONS (*Catalogue*, 1798-1823), Kroon Renet (DIEL, *Kernobstsorten*, 1802, t. 5), De la Reine (FORSYTH, *Treatise*, 1805), Reinette Rousse (DIEL, &c.), Queen of the Pippins (Belgian Nurseries of the VAN MONS' Company's *Catalogue Général*, 1857), with several other German synonyms. It appears that the original name for this variety was Kroon Renet, and it has been cultivated in Holland for upwards of a century, whence DIEL received it and described it in 1802. Reinette Rousse is given on the authority of German pomologists, but the Reinette Rousse of DUHAMEL (1768), now commonly called Reinette des Carmes on the Continent, and Barcelona Pearmain in England, is, of course, quite different. LEROY says that the name of Queen of Pippins has been the cause of confusion, the King of Pippins and this being sold for each other both at home and abroad. There are certain points of resemblance between the fruits, but the trees are as distinct as can be. The fruit is of the first quality, of medium size, and fit for use from December to March. It is conical in shape, depressed on one side at both ends; eye large, skin rather thick and rough, plentifully sprinkled with gray spots on a dull yellow ground, fawn on the shady side, streaked and tinged with red, and slight dashes of crimson reticulated olive russet on the sunny side. In the same number, M. LEROY gives a description of the Apple Reinette Ontz, which he says is a first-rate variety; the tree being an abundant bearer, and the fruit of moderate size, first quality, and keeping till June. This excellent and handsome Apple is believed to be of Belgian origin, and was probably raised by SIMON BOUVIER, of Jodoigne. It is highly recommended for its keeping properties.

—— The exhibitions in connection with the MANCHESTER BOTANICAL AND HORTICULTURAL SOCIETY will be held during the present year on the following dates:—Floral meeting at the Town Hall, March 14. Exhibition of Auriculas and miscellaneous plants, Town Hall, April 25. Annual National Horticultural Exhibition, June 2 to 9. Exhibition of Carnations, fruits, &c., August 11 to 12.

—— MM. MAYER and WOLKOFF have been making experiments on the relation between light and the RESPIRATION of PLANTS, meaning by that term the inhalation of oxygen and the proportionate emission of carbonic acid gas. They also show that growth in length is wholly independent of respiration, so that the one cannot in any sense be taken as the measure of the other.

—— The question of ECONOMISING FUEL has been touched upon by numerous writers—by some from an economical point of view to lessen the cost of producing a certain amount of heat or motive-power, by others with a view to economising the fuel itself, because exhaustion of the present known sources is probable. No doubt with most of us the present price of fuel is the motive for economy, and the endeavours to utilise as much of the heat given off in combustion as possible; future generations may be trusted to look after themselves. It is a generally acknowledged fact that the open fire-places of our living-rooms are the most wasteful of all contrivances for producing heat, and yet the closed stove of German dwelling-houses finds no favour in this country. Even a hot-water apparatus produces a dry heat that is unpleasant, though of course it may be modified to a certain extent by open vessels of water on the pipes. But M. BLAVIER, President of La Société Industrielle et Agricole d'Angers, claims to have contrived a chimney by the use of which we may enjoy all the pleasures of seeing and poking the fire ("la vue du feu et le plaisir si apprécié des rêveurs, de participer à l'activité du foyer par tisonnement"), and at the same time obtain a great deal more than one-tenth of the heat evolved in combustion in the room, for he asserts that under the present system we lose nine-tenths. After describing the process and results of combustion he describes his new chimney, which is to combine the advantage of an open fire with economy in consumption. The points are to warm the incoming air before it enters the room, to permit the free escape of noxious gases, and to prevent the heat from going out at the top of the chimney—in short, to combine the useful and the agreeable. The principle of this "stove chimney" is to place a cast-iron or sheet-iron pipe in the chimney

to carry off the gases resulting from combustion. Around this pipe the cold air, which enters from the back of the grate or from beneath the hearth, circulates, and is warmed before it is admitted into the room by means of a valve near the ceiling—a partition across the chimney at the same height preventing its escape upwards. This scheme is now on trial, but we confess we have little faith in it.

—— The *Gardeners' Magazine*, always well to the fore in interesting garden matter and sparkling articles, published a special CHRISTMAS NUMBER in an illuminated cover, with a supplement in the form of an almanac of elegant design, neatly printed in colours. The contents are a veritable mixed border of horticultural and non-horticultural matter. The *Garden* has also announced its intention henceforth to give a chromo-lithograph weekly, the price of the journal being raised to sixpence. The representation of the new and beautiful Xanthoceras sorbifolia, given as a sample, was of a superior character; and we shall watch with interest the progress of this innovation in horticultural literature.

—— The following PLANTS were in FLOWER on CHRISTMAS DAY, 1875, in the garden of the Palazzo Orengo, near Mentone, the residence of Mr. Thomas Hanbury:

Abutilon, diff. sp.
Acacia brachybotrya
,, lophantha magnifica
,, ,, speciosa
Adonis capensis
Aloe frutescens
Antirrhinum majus
Aralia japonica (Siebo'dii)
,, papyrifera
Arbutus Unedo
Aster longifolius
,, muricatus
Bougainvillea glabra
Bouvardia leiantha
Buddleya salicifolia
Cassia corymbosa
Casuarina quadrivalvis
Conyza glutinosa
Coronilla coronata
Cotyledon sp.? (very fine)
Echeveria metallica
,, purpurea
Eriocephalus africanus
Eucalyptus globulus
Euphorbia splendens
Euryops spathaceus
Grevillea Manglesii
Hedera algeriensis
Heliotropium peruvianum
Iberis sempervirens
Justicia alba
Kleinia articulata
,, nerifolia
,, odora
,, repens
,, tropæoloides
Lantana Camara
Lavandula inclmans
,, pinnata
Lavandula pubescens
Lophospermum scandens
Malva fragrans
Maurandia Barclayana
Mesembryanthemum cordatum
,, lingua
Mespilus japonicus
Musa Ensete
Narcissus, diff. sp.
Nicotiana glauca
Othonna triplinerva
,, crassifolia
Pachyphytum bracteosum
Passiflora princeps
Pelargonium, diff. sp.
Plumbago capensis
Polygala myrtifolia
Raphiolepis indica
Rosa bengalensis
,, Noisettiana
,, Thea
Russelia juncea
Saccharum Maddeni
Salvia coccinea
,, frutescens
,, leonuroides
,, mexicana
,, princeps
,, semilrata
Sempervivum canariense
Senecio deltoideus
,, longifolius
,, macroglossus
,, oxyriæfolius
Sparmannia africana
Tecoma capensis
Veronica, diff. sp.
Viburnum Tinus
Vinca major (?)

—— PEAS of all kinds, and especially the early and wrinkled varieties, together with BEANS of the long-pod and Windsor sections, show a marked advance in price this season, owing to the wet summer and autumn, which affected their ripening and proper harvesting in a most prejudicial manner. Besides being deficient in quantity, the samples are necessarily very bad, and a large amount of waste ensues, while the work of picking is also rendered much more laborious. Pea-picking at the wholesale seed-houses is mainly, if not altogether, done by women; and while it is generally the rule to pay so much per bushel for the picked Peas, some pay at a stated rate for the waste. In the case of a good harvest of Peas, when the yield is large and the samples good, the rate of pay per bushel averages from *6d.* to *9d.* and *1s.* per bushel. This season as high a sum as *3s.* per bushel is being paid to the pickers, and by working eight or nine hours per day but little more than half a bushel can be picked. Some idea is thereby gained of the waste in the samples. It is not a little interesting to note that while what is known as an improved stock of the well-known Sangster's No. 1 Pea is being offered at *32s.* per bushel, an ordinary stock of the same variety is offered at just one-half this price. A bad season for harvesting also carries with it another disadvantage, that the stocks come in late and things get behind-hand.

—— The utilisation of PAPER FOR WINDOW CURTAINS has attracted a good deal of attention of late years under the name of PAVY'S patent felted fabrics. From an Australian paper we learn more about the substances used in the manufacture of this material than we recollect having heard before. It seems that some samples of window curtains are being exhibited at the Melbourne Exhibition, and the fabric, which is the invention of M. EUGÈNE PAVY, is, we are told, now manufactured by a limited liability company at their mills at Chilworth, Surrey, England. The raw materials and animal substances used in its manufacture are very numerous, and include Flax, Hemp, and Cotton, saccharine plants, barks of various kinds, and plants of the Nettle, Corchorus, and Musa tribes, as well as Crotalaria, Hibiscus, Calotropis, and several other articles. The curtains made of this material in appearance are wonderfully like damask, and are as pliable as woollen stuffs. They are woven up in the ordinary manner, and can be stitched on to any other material with the greatest ease. The curtains are light and durable, and do not absorb the dust. The effect is rich and harmonious, and the most practised eye would fail, without careful inspection, to discover that they are only paper.

—— In connection with the great development of the choice SEED TRADE during the past few years, must be noticed the provision of PRINTED PACKETS in which to place the seeds. These are now elaborately prepared by printers, who make it a special branch of their business, and quite a life history of a plant appears on many of them, the cultural directions being as complete almost as it is possible to make them. Messrs. BLAKE & MACKENZIE, of Liverpool, at this season of the year, turn out as many as from 350,000 to 400,000 of these packets weekly. They are first of all printed in large sheets, then cut to size by machinery, and folded and gummed by hand, young girls being employed at this work. Gumming the several parts and folding by machinery has been tried, but has proved insecure, and the work is now performed by hand. The first step in this direction was in all probability the printed papers designed by Messrs. T. MOORE and W. P. AYRES, and printed by Mr. D. M. AIRD, which had to be folded by hand, and fastened without the use of gum. Then some of the enterprising seed houses improved on this, and these culminated in the series issued by Messrs. BLAKE & MACKENZIE. This branch of the trade is a remarkably interesting development, and the employment of these packets, labels, &c., greatly assists the speedy execution of orders.

Home Correspondence.

The Use and Quality of Anthracite Coal.—In reply to an inquiry in a late number of the *Gardeners' Chronicle* respecting the use and quality of the anthracite coal for stove purposes, I am able to give the results of forty years' experience or thereabouts. During that period I have had in use every winter a stove situate in a small square stone closet on a level with my cellar stone floor, fed with this coal twice in the twenty-four hours. A current of pure air is introduced from without to this closet, which circulates round the stove, and is thence conveyed into the halls, passages, and staircase, where the thermometer ranges, as a rule, between 50° and 60°. In two rooms in which a somewhat higher temperature is occasionally required, I have two of the stoves constructed under the direction of the late Dr. Arnott, the author of that most instructive and interesting work, *The Elements of Physics*. On reading that on its publication, I think in 1831, I was so struck with his account of his use of this after some thirty years' experience, and the simplicity of its construction, that I obtained stoves from the manufacturer the Doctor recommended. The stoves have been in use most seasons from Nov. 1 to the end of April, and have also been fed with the anthracite coal twice only in the twenty-four hours, and I have never found that any difficulty has arisen in either case. A member of my family residing at a distance, having requested me to order one of these stoves, I found the firm had left the place they occupied when my stoves were made, and Messrs. Alexander & Thompson, very efficient iron-founders in Cirencester, are now constructing one of these stoves for my relative from my pattern, having recently made another for me which answers perfectly. I may add that my boiler, for heating my garden buildings with hot-water circulation, has always been fed with this coal from the mine at Llanelly, in South Wales, for many years supplied by Messrs. Morgan & Sons, and recently by their successors, the Guauncae-Gurwen Colliery Company. I have been supplied with two varieties of this coal—one described as the purest malting coal, *13s. 6d.* per ton in July last, and an inferior coal, used for malting, &c., at *10s. 6d.* I have always used the former in the house, and tried the latter in the garden, but my gardener thinks the former the cheapest on the whole for his boiler work. *Charles Lawrence, The Querns, Cirencester.*

—— In reference to the use of Anthracite coal for hot-water boilers, I beg to inform your correspondent "T. S." that my father has used it for several years, except during the late strike, when it was dear. We have the coal direct in 10 ton trucks (*24s.* per ton delivered), and we find it far preferable to coke, both in point of economy of fuel and of labour. I have never heard of its injuring our hot-water circulator in the least, where there is a sharp draught. This coal only needs a trial to become generally adopted. *Henry Cannell, Jun., Woolwich.*

Pelargoniums at Christmas.—It may interest some of your readers to learn that for the last three months I have had, and that I still have, a house full of Zonal Pelargoniums in beautiful bloom. The plants, which are in 7-inch pots (*24's*), were kept in the house (a vinery) where they bloomed in the spring, but, beginning to get drawn up, they were turned out, and, fairly sheltered by a north wall, had no heed paid to them until, being apprehensive of frost, they were taken into the house again towards the end of September, when they at once commenced blooming (twelve or more blossoms to a plant), which they have continued to do up to the present time. The sorts include Aurora, Don Giovanni, Sultana, Wellington, Remus, Argus, Jean Sisley, Dr. Karl Koch, Mrs. W. Paul, Sir John Moore, Douglas Pearson, Schiller, Dante, Lord Derby, Diana, &c. *Much Hadham, Herts, December 27.*

Heat Without Cost.—The object of my first letter was to show that Mr. Fish's assertion that lime gives out heat when mixed with burning coal is erroneous. In his last letter he says that the driving off of the carbonic acid of limestone is a species of combustion. Now combustion only takes place when two substances unite, such as the union of oxygen with coal, and this is precisely opposed to what takes place when a substance is split up into its constituent parts, which occurs during the conversion of limestone into lime and carbonic acid. If limestone gave out heat both in parting with its carbonic acid and also in re-combining with it, it is obvious that we should have a substance which would give an unlimited amount of heat. Mr. Fish seems surprised that the heat of the coal should be locked up in the lime until the water used in slacking it makes it evident, but this is the fact—it was the heat of the fire which effected the chemical changes rendering it possible for the heat to be stored up. The heat was taken away from the fire when the substance was divided into its component parts, and it is given out again when they re-unite. The heat given by coal is the heat of the sun stored up by the plants, which in past ages have been converted into that substance. With regard to gas-making, if the coal within the retort gives out an intense heat why is it necessary at gas-works to use a large amount of coal to heat the retorts? It would only be necessary to make a small fire to heat the first retort, and the heat given out by that retort might be used to heat the next, and that retort the next, and so on for any number of retorts. If Mr. Fish will show a company how to make gas in this manner, they would doubtless be very glad to give him a few thousand pounds for the information. If it is possible to obtain a large amount of heat free of cost from a limekiln, why should not this heat be used to burn the lime in another kiln, which would materially reduce the price of lime and produce it at such a price that the lime merchant could easily undersell the lime produced by the Cowan process? Several correspondents have sent statements purporting to show that the Cowan process gives heat free of cost, but they omitted several items the absence of which vitiated the calculation, and one stated that he obtained 35 cwt. of lime from 2 tons of limestone, whereas that quantity of stone would only produce about 25 cwt. of lime. But after all what does "heat free of cost" mean? It means that every article used in the construction of houses would be enormously cheapened, so that they could probably be built for half the present cost; every article of clothing would be greatly cheapened, because the steam used by the engines which drive the manufactories could be obtained free of cost, and all the machinery used in the manufacture might be made at half its present cost—in fact, almost every article that we use would be made at a tithe of its present value. Mr. Fish, believing that Mr. Cowan has a process which will do all this, pleads that the medal of the Royal Horticultural Society should be given to him: it would have been as reasonable to expect the Royal Horticultural Society to give their medal to George Stephenson because he invented railways, and thereby greatly cheapened the cost of the transit of plants. Heat without cost is of national importance. The amount of coal used for horticultural purposes is nothing compared to the millions of tons used in the manufactures of the country. If Mr. Cowan can obtain heat without cost he has only to show a few manufacturers how to do it and his fortune would be made at once, for there are many that would be delighted to give him £10,000 for the use of his patent. I should be very

glad if it were possible to obtain heat without cost, for it would certainly be the greatest invention that man has ever made. Coal is the cheapest heat-producing substance known, and the object of inventors should be to utilise as large an amount of the heat produced by coal as possible, and not attempt impossibilities by trying to increase the heat by mixing non-combustibles with it which can only take away from the heat of the fire. No doubt great improvement has still to be made in boilers, but heat without cost will always remain as great an impossibility as perpetual motion, because they are the same thing with different names. *S. E.*

The Easter Beurré Pear.—My experience with this fine late variety of Pear is the same as that of your correspondent, D. C. Powell (p. 812, vol. iv.). I had some trees of it trained on walls of different aspects, but never found the fruit so juicy or good flavoured as on pyramid trained trees on the Quince stock. Another consideration was that the fruit from the wall-trained trees never kept so long as the fruit from the standard trees, whether trained in the pyramid or bush form. In the strong soil of the kitchen garden here I find that Pears on the Quince stock, from its surface rooting, bear better and earlier than those on the Pear stock. Very small trees of the Easter Beurré and Bergamotte d'Esperen on the Quince stock, trained in the pyramid form, bear well in favourable years, and with fruit of the Beurré Rance from the walls keep up a supply of the best kinds of late Pears that can be grown. *William Tillery, Welbeck.*

Luculia gratissima at Thorpe Perrow.—In the *Gardeners' Chronicle* of last week, p. 813, your correspondent mentions a plant of Luculia gratissima planted some thirty years ago as bearing fifty heads of bloom. This plant must be a dwarf compared to the plant at Thorpe Perrow, which has been planted about twenty-five years, and is growing up nine rafters of the conservatory. I had a look in there about the end of November, and found the plant just in its beauty, with about 700 heads of bloom in different stages of growth; and I understood from Mr. Culverwell that the plant continued to bloom until February. *Ebor.*

Porter's Excelsior Potato.—We have received the enclosed document from Mr. Porter, and we shall be glad if you will insert Mr. Barron's letter in reply to the challenges that have appeared as to the origin of Porter's Excelsior Potato. *James Carter & Co., Dec. 23, 1875.* [The following is a copy of Mr. Barron's statement:—

"Balnakettle Mains [?], Dec. 15, 1875.

"I hereby certify that I know thoroughly Porter's Excelsior Potato. It is a selection from a nameless fluke, exceedingly flat and peculiar in form; and it is so far different from the original stock that it would be impossible for any one to discern any resemblance between Excelsior and the original. I speak from my own personal knowledge, as I saw the original stock and the selection, and also saw part planted and dug, and have been thoroughly conversant with the produce since. I believe Excelsior to be quite distinct and clearly superior to any variety of similar style that I have seen. *William Barron.*"

We have received from Mr. Porter himself a letter full of complaints of the treatment he has received, and of the injustice he alleges we have done him by declining to print his letters in full. Of the present letter he requires us to publish all or none; and, as the matter is one in which the great majority of our readers will take no interest, and as it seems to us to involve personal questions, on the merits of which we are quite unable to decide, we deem it preferable to accept the latter of Mr. Porter's alternatives, and not inflict on our readers two columns of recriminatory and controversial statements. EDS.]

Dion edule.—The plant alluded to by Mr. C. Blake at p. 813 (*Gardeners' Chronicle*, December 25, 1875), is probably one that has been imported within the last few years. Being a large importer of all sorts of Cycadaceous plants, I am able to state that his Dion is very likely to thrive under the new treatment he has given it, but he must not expect the plant to grow as rapidly as some other species of the same genus (Cycas revoluta, for example). Dion edule very often waits two years, and even more, before making a new growth, but the latter is sure to be all the better and finer, if a good bottom-heat be given, which at the same time causes a more rapid vegetation. *Jean Verschaffelt, Ghent, Belgium, December 28, 1875.*

Daphne indica rubra.—This is a very valuable and interesting plant when it flowers at this season. A plant in fair health about 2 feet high and about as much through will bear three dozen heads of flowers. One such plant in a conservatory imparts its fragrance to the amosphere, on which account it is most prized. The growth of this plant requires comparatively little care, but like some other woody plants, it needs more time to get them established, when with steady attention afterwards ordinary care keeps them in fair and increasing good order. *R. M.*

Elm Trees Injured by Iron Pins Driven In.—A year ago a row of Elms, valuable as being near a house, and in the line of fencing which it was desired to strengthen with wire, were much injured by long iron spikes thoughtlessly driven into them by a careless blacksmith. They bled excessively for months, and the long spikes were removed, and smaller staples substituted. The bleeding continued, and on closer inspection it is discovered that the smith, to save himself the trouble of getting them out, drove some in to the head (8 inches) and broke off others, leaving 4 or 5 inches in the tree. The bleeding is still excessive, and bark rotted off in all directions, and to a great extent. Some few irons have been cut round and got out, but the process leaves a large and deep hole. Some cement has been applied both to the holes whence the pins have been extracted, and round the heads of those that are still embedded in the trees, but to no apparent effect. Can any of your experienced readers kindly assist me with their advice as to what is the best course? It is possible to extract many of the irons still, but a hole, 3 inches in diameter and 3 or 4 deep, is the result of extraction. The bleeding has never ceased all through the winter, and is still progressing. The trees are mostly of nearly 100 years growth, and some much more. *C. Hawkins Fisher.*

FIG. 4.—WILLIAM THE CONQUEROR'S OAK, WINDSOR.

Starry Puff-balls.—Le Maout and Decaisne are very incorrect under their description of Geaster hygrometricus (*Analytical Botany*, p. 956), one of the Starry Puff-balls, and, like the Mushroom itself, one of the Basidiomycetes. This species is described by these authors as a hypogeal globose plant, which, they say, presents the following "curious phenomenon:" When mature and still underground, if the season be dry, the outer envelope, which is hard, tough, and hygrometric, divides into strips from the crown to the base; these strips spread horizontally, raising the plant above its former position in the ground; on rain or damp supervening, the strips return to their former position; on the return of the drought this process is repeated, until the fungus reaches the surface, becomes epigeal, and spreads out there; then the membrane of the conceptacle opens to emit the spores in the form of dust. This description is altogether incorrect; in fact, just the opposite state of things holds good, for the strips become horizontal from moisture, and are rigidly inflexed when dry. Fries pointed this out in his *Systema Mycologicum* nearly fifty years ago. *W. G. Smith in "Popular Science Review."*

Notes on Garden Hybrids.—I was much interested in your notes on Oaks, *Gardeners' Chronicle*, 1875, p. 816. Q. nobilis, Hort., Ottolander, is by the raisers said to be a hybrid from Q. nigra fertilised with pollen from Q. americana. There is, however, practically no limit to the forms of Oaks which may be raised, since like Willows, many Conifers, and other monoecious plants, they seem to be especially addicted to cross-breeding. I may of course be wrong, but I consider the Lucombe Oak to be a seedling of Q. Cerris, accidentally fertilised with pollen from Q. Ilex. The only way to settle this would be to carefully cross-fertilise, *i.e.*, hybridise these two types and compare the offspring with the Lucombe variety. I have long thought that we have many hybrid Oaks in cultivation, but of all plants I think Conifers produce more natural hybrids than any other plants. The Japanese Retinosporas are frequently produced from seeds of Biota orientalis, and another group has been derived from B. occidentalis, and this extreme form of seminal variation as I take it can only be accounted for by the supposition that previous hybridisation has naturally been effected among these Thujas or Biotas. Some clue to the near relationship of Conifers is supplied by the propagator. Thus Chamæcyparis, Retinospora, Libocedrus, Thujopsis, Cupressus, and Biota sinensis, will all grow on Thuja occidentalis as a stock. I beg to take this opportunity of thanking those horticulturists who have so liberally acceded to a request of mine—in the *Gardeners' Chronicle* of a few weeks ago—for information concerning the names and parentage of hybrid plants. The importance of hybrid plants from all intelligent points of view is immense, and my object is to arrange them and record their parentage and history for ready reference. I shall be extremely grateful either for lists of hybrids and their parentage from amateurs, gardeners, or nurserymen, or for any references to books and periodicals where such records may be found, and which may have escaped my notice hitherto. I need scarcely remark that the seed-bearing plant should always be named. In the *Origin of Species* Darwin remarks that—"One new variety raised by man will be a more important and interesting subject for study than one more species added to the infinitude of already recorded species." Therefore it is desirable that the names and parentage of the more important hybrids—*i.e.*, offspring of two pure species—should be arranged in some tolerably complete form for the information of those who come after us. Until very recently hybrids were looked upon by otherwise intelligent observers of Nature as "unnatural and illegitimate offspring which had not ought to be," but now the case is widely different, and, apart altogether from their beauty or usefulness, hybrids teach us much in the life history of plants which can indeed be taught by no other means. May I be allowed to suggest how desirable it is that other nurserymen should follow the example of Messrs. Veitch, who recorded their ample list of beautiful hybrids in your pages a week or two ago? The female parent, however, should always be indicated, as this renders such records much more valuable in every way. *F. W.*

Burbidge, 12, *Charles Street*, *Knightsbridge*, *S.W.* [We shall gladly publish any information on this subject if it be complete and not conjectural merely. EDS.]

The Appearance of the Azalea indica during the Winter.—It is a very common notion that the Azaleas during winter should be comparatively dried off, if I may use that expression, and the consequence often, very often, is that purposely at this season of the year they are seen in a semi-withered condition of the foliage, indicating that the plants have certainly been somewhat dried up. No doubt we learn from many inferences in floriculture that drying up has the effect of producing a profuse blossom, more especially after a vigorous growth, but in the case of Azalea culture I believe it is a mistake to treat them under the term of what may be called drying up, or keeping dry. At this season of the year Azaleas should present the appearance of the small-leaved Rhododendron called the alpine Rose, this varying with the sorts, but in no case should their appearance be that of the foliage coming off from artificial drought. At this season of the year Roi Leopold should have the appearance of an evergreen shrub, and the sorts may lose a good part of the older leaves—Cedo Nulli a good portion—and yet be kept moderately moist at root. The principal thing to attend to in the cultivation of the Azalea indica successfully is to keep them in a moist heat, liberally yet carefully watered till once the buds are formed, then the temperature should be reduced to that of a greenhouse, giving water sufficient to supply the comparative inaction of growth. *R. M.*

Ergot on Grasses.—In the list of grasses enumerated by the writer of an interesting paper on the action of ergot I notice the omission of one, Elymus arenarius, which is more liable than any other species of grass to the attacks of ergot. I cannot venture to say that it is so in its natural habitat, but when removed to the stronger soil of the garden it certainly developes ergot in an extraordinary manner. Some years ago I brought up a quantity of roots of this grass from the Lincolnshire coast, and commenced to propagate it for purposes of ornament, and for cover, but finding ergotised ears so numerous season after season, and fearing so dangerous a fungus would extend to the pasture grasses of the neighbourhood, I had the entire stock of it destroyed. I have remarked that coincident with very unusual development of ergot, and of parasitic fungi, in pastures, there has occurred a greater number of instances of cows losing their calves prematurely. *W. Ingram*, *Belvoir*.

Notices of Books.

Forest Trees and Woodland Scenery as Described in Ancient and Modern Poets. By William Menzies. Illustrated in chromo-lithography by M. & N. Hanhart. Longmans. 4to. Pp. 151.

This is a work which has been awaited with some interest, from the tried reputation of its author both as a forester and a *littérateur*, and from the exceptionally favourable opportunities he has enjoyed for many years in having the management of some of the noblest stretches of forest land, and some of the finest trees to be seen in the three kingdoms.

In his treatment of the subject Mr. Menzies appeals to that love of noble trees and woodland scenery which seems to be innate in the majority of his countrymen. To quote his own words :—

"Instead of attempting to produce a plain historical record of the state of knowledge and feeling which has existed for the last 300 or 400 years in England, on the habits and management of trees and woodland scenery, a more interesting account may probably be presented by selecting extracts from the writings of the poets during that period. They could only acquire their knowledge by conversing with practical people in their own times, and by observing the aspects of cultivation which resulted from methods of treatment then in use. Their views they instinctively recorded in terse expressions ; and, at the same time, drawing upon their imagination, pictured the effects in the future."

Accordingly the author has selected from various poets—Hebrew, Greek, Latin, Italian, and English, passages relating to forest trees and their management, leaving on one side passages descriptive of sylvan scenery in general, but which are destitute of any special application. This will explain the absence of some quotations which might otherwise have found a place in this volume. It will be a matter of surprise to some to find that no extracts are made from Young or Moore, but we are told that they supply no lines which show that they turned their attention to forest subjects.

In order to give the reader an idea of the manner in which Mr. Menzies has treated his subject we may extract the following passages, the first from Lucan's *Pharsalia*, the next from Spenser, relating to the Oak. The extract from Lucan is appropriately associated with a figure and description of an Oak in Windsor Forest, known as William the Conqueror's Oak, and of which we give an illustration from the pencil of our own artist (fig. 4, p. 20).

"As a large Oak on fruitful soil,
Bearing a nation's ancient spoil,
And votive gifts from chieftain's hands,
By failing roots scarce holden, stands
Fixed by its weights alone ; and bare
Outstretching into vacant air
Its branches, casts around a shade,
By trunk and not by foliage made.
Yet though it totter to its fall
In the next storm, and round it all
The forest stands in strength arrayed,
To it alone is worship paid."

FIG. 5.—VIEW IN WINDSOR GREAT PARK.

"William the Conqueror's Oak in Windsor Great Park is rather more than 30 feet round the stem, and although no date can be given, its age is probably 1200 or 1500 years. It has received its name only by tradition, and nothing is known of its history further than it has borne William's name from time immemorial. The main stem has long since fallen to the ground, and the portion now seen so green and full of vigour is only one of the side branches, which has absorbed all the strength of the root. The tree, with care, may last for centuries."

Spenser's description of an old Oak is equally graphic :—

"He that hath seene a great Oke deie and dead,
Yet clad with reliques of some trophies olde,
Lifting to heaven her aged hoarie head,
Whose foote in ground hath left but feeble holde

But halfe disbowel'd, lies above the ground,
Shewing her wreathed rootes and naked armes.
And on her trunk all rotten and unsound,
Onely supports herselfe for meate of wormes:
And, though she owe her fall to the first winde,
Yet of the devout people is ador'd."

In this manner Mr. Menzies has strung together passages from sacred and profane writers, and it is somewhat singular to find that for general accuracy of observation and distinction the lofty grandiloquent Ezekiel and our own Nature-loving Tennyson bear the palm. Chaucer, too, clearly had some practical knowledge of the best mode of managing trees—witness his line,

"Everi tree well from his fellow grewe,"

or that in which, alluding to the resinous exhalations of the Pines, he anticipated our modern physicians, and forestalled, in principle at any rate, the use of the Australian Eucalyptus. As paraphased by Dryden the line runs thus—

"To scent the skies and purge the unwholesome air."

Mr. Menzies' illustrations of trees are, as is natural, chiefly taken from the forest under his own charge, and of which he very briefly sketches the history. No better or richer store could be selected from, as may be judged in some slight measure from the illustrations we give of some of the woodland scenery at p. 21, and in our Windsor Supplement, published last year. It is to be regretted that the art of the chromo-lithographer has in general but poorly represented these noble trees. The colouring is crude and opaque—there is a want of graduated light and shade in the foliage, and altogether the work of the artist has been but indifferently reproduced.

As to the letterpress our extracts will suffice to show what a treat is in store for the reader privileged to peruse these pages. Mr. Menzies' selections will find general approval, and his own explanatory remarks are, as might have been expected, judicious and appropriate. To some of his opinions exception may be taken. For instance, we doubt whether the "Esculus" of Ovid is, as Mr. Menzies says, the scarlet Oak of Italy:—

"Here scarlet Oaks beneath their acorns bend."

It is more probable that Q. coccifera was here intended. As to the classical "Esculus," considerable differences of opinion have prevailed, and the epithets applied by different writers apply perhaps to different trees. We suspect that the "Esculus" of Virgil and Ovid may have been the sweet Chestnut. Again, when Mr. Menzies is alluding to certain trees mentioned in Chaucer, he asserts that the Poplar, Elm, and Lime are not native trees, but were introduced before Chaucer's time. Of course, this may be true of some Poplars, Limes, or Elms, but we greatly demur to the conclusion that we have no aboriginal representatives of these genera in this country. So, too, in our experience it is extremely rare for the male and female blossoms of the Yew to be borne on the same tree. Our object in alluding to these matters, however, is not to criticise, but to draw attention to the many points of interest open for discussion, and which are to be found in this elegant gift book.

—— *The Law of Compensation for Unexhausted Agricultural Improvements, &c.*, by J. W. Willis Bund, M.A. (Butterworths.) This is a popular exposition of the Agricultural Holdings Act of last session, and will be valuable to those interested in this important matter. In the first place a list is given of the improvements for which compensation is payable and the circumstances and conditions under which a claim may be made; other sections deal with the amount of the claim and the way in which it is to be estimated, whether by the "custom of the country" or by the means provided by the new Act. In the appendix are given the text of the Act itself and various forms of procedure. Without pretending to say anything as to the law, we may yet congratulate Mr. Bund on having laid it down very clearly to the lay mind; and if one conclusion more than another is forced upon us by the perusal of his book it is this—that the man who in this matter is his own lawyer has a more than usually foolish client.

—— The announcement of the title of the *Canary Book* (*Country* Office) in full, long as it is, will give the reader as good and just an idea of the contents of this book as any reviewer could do. It runs thus:—"The Canary Book; containing full directions for the breeding, rearing, and management of exhibition canaries and canary mules; their treatment in health and disease, the formation and management of canary societies and exhibitions, together with a full description of all the different varieties and their points of excellence, and all other matters connected with this fancy." How "fanciful" a thing this is, is made apparent from the circumstance that birds are bred to show, and not to sing—the primary points being "size, shape, contour, colour, feather-markings, crest," while powers of song are but secondary considerations. Striking, too, is the difference among the "fancy" themselves, some preferring the plump, symmetrical, gay-coloured smooth-plumaged London fancy, while the Scotch fancier's idea of perfection is a large, ungainly, long-necked crane-like bird, with a curvature in its spine. The directions for organising a canary show, the treatment of judges by the committee, and the duties to be fulfilled by these judges, may be read with interest, not only by canary fanciers, but by all who are concerned with similar matters.

—— We learn from an advertisement in a contemporary that the publication of the *Pinetum Britannicum*, an important work, by Mr. Andrew Murray, which has long been at a standstill, will shortly be resumed.

PUBLICATIONS RECEIVED.—Morton's Almanac for Farmers and Landowners (Cassell, Petter & Galpin).—The Rural Almanac and Sportsman's Illustrated Calendar for 1876 (*Field* Office, 346, Strand).—Glenny's Illustrated Garden Almanac and Florists' Directory (Ward, Lock & Tyler).—Report on Coffee Cultivation in Dominica, by Mr. Henry Prestoe, Government Botanist, Trinidad.—The Indian Forester for October (Calcutta Central Press Co.).—Parts I. and II. of the Proceedings of the Academy of Natural Sciences of Philadelphia.

COTTAGE GARDENS.

COTTAGE gardens legitimately come within the special objects of the *Gardeners' Chronicle*, especially in the case of gardens to lodges, or to the nests of cottages often gathered round park entrances, or accommodating the more immediate followers of the resident landed proprietors. In such cases they come within the limits of the horticultural arrangements.

In some parts of the country where the natural taste for flowers is aided by soil and climate, the cottage gardens are often beautiful. In the Vale of Gloucester in early summer for 20 or 30 miles the Roses and Pæonies, with Honeysuckles on the porches, and such hardy sweet-scented flowers as the means of the inmates allow, are a pleasure to see; and in Sussex, where the soil suits them, the double red Anemone and some of the hardy bulbs may be seen in perfection, the very fact of but a few clumps being attainable by the owner showing their special points much more completely than when they form part of a large collection.

On the other hand the garden is often a mere mass of neglect, a rough bit of ground with no crop but a patch of Cabbages, and possibly besides a few bushes bearing no fruit because they have to do duty as a drying ground, and what should be borders are stamped flat by the children and sprinkled with tin pots, old boots, and all kinds of indestructible untidiness. Sometimes it is only a very slight matter that is needed to put all right (possibly only a little encouragement from the ladies of the place to the women and children as to taking their own light share of the labour of keeping things in neat order), as the men, at least in the agricultural districts, have usually quite knowledge enough to manage the few kinds of vegetables they need; but often there are details requiring advice and a better educated taste for their proper arrangement.

These commonly are a need of some order and trimness in the disposition of the few flower roots and ornamental shrubs in the garden and the climbers on the cottage; better management in the matter of tools, a substitution of some tolerable varieties of such vegetables as may be permanent in the ground for the extraordinary things which might be supposed the original unimproved sort, and also (frequently more needed than anything else) such management of soapsuds and other things requiring daily clearing from the house as may not expose the health of the family to risk or cause constant untidiness, and at the same time may secure the benefit of them for the garden. With regard to the narrow borders beneath the cottage window and by the side of the path from the door to the garden gate which will usually be as much as the cottager likes to spare for flowers, it saves much trouble for them to have a solid well fixed edging of bricks partially buried in the ground, with the angle (not the side laid horizontally) uppermost, or stone tile, strong pottery ware, or a Box edging such as cannot easily be disturbed. Anything movable is almost certain to be driven out of its place if there are children in the case, and the path itself is much more likely to be kept to if it is laid out in the straightest and shortest possible direction from the door to the garden gate.

These narrow borders will be sufficient to give a trim dressed edging to the vegetable beds just in sight, and though any contributions to them are thankfully received, those of sweet smelling flowers or herbs are usually the most acceptable.

Violets, Wallflowers, Sweet Williams, the common White Pinks, Polyanthus, and Jonquils, are all favourites, so is the Mezereon (Daphne Mezereum), and any kind of Rose; Rosemary or Sweet Briar where a bush is wanted to fill a corner or hide an angle, and Lavender and Southernwood for drying, or "green" to a button-hole sprig on Sundays. Loniceras, White Jasmine, or Banksia Roses cluster well on the house, and the larger Roses, as the Gloire de Dijon or many others, at once suggest themselves as ornamental, but these are sometimes the cause of a deal of annoyance. In picturesque districts frequented by tourists and excursionists there are difficulties in growing anything very attractive by the roadside; people passing by express a wish for some flowers, and the driver will take them without caring for opposition, unless the man of the house is on the spot, or the owner of the property interferes legally, and the pleasure of the matter is not worth the trouble it costs. With fruit trees there is less difficulty, the penalty of the abstraction being known, and certain sooner or later to be inflicted, and a Plum or Pear tree, or, if the climate allows, still more especially an Apricot, is at once acceptable to the tenant, and an ornamental covering which can be easily kept in bounds for the cottage. It is not so picturesque as the luxuriant masses of Ivy (seen much too often in rural districts), fairly covering chimneys and everything up in its folds, and creeping into every corner of gutters and slates where it ought not to be, or even in one case (far above cottage neglect) illustrating the effect of natural pendents of foliage, as wall-draperies in the family sitting room, but of whatever nature the house climbers may be it is most important to keep them clear of all chance of injuring the roof or preventing the running off of water, and though they may cluster round the chimney, the pipes, gutters, and edges of the roof should be kept most scrupulously clear of them, and the windows also should be kept free. The falling boughs laden with flowers have a beautiful effect seen against the lattice from the outside, but inside the result is a lessening of the light and a deal of discomfort, and often of untidiness in consequence.

Red or white Currants grow well trained against a cottage, and in this way the fruit can be kept out of the way of short arms, but unless there is a sale for the small fruits (so that the parents for the money's sake will see that their orders regarding it being left untouched are obeyed), the bushes hardly make a return for the room they occupy. The cost of the sugar for preserving or making it into puddings is often inconvenient, and the fruit is usually carried off green by the youngsters to their own great discomfort and that of all concerned, and generally a few standard Apple, Pear, or Plum trees that have fruit large enough to be counted and watched are more useful and ornamental.

With these and with the common vegetables a little aid is often needed. Sometimes all that is requisite is the name of some tolerable sort, but often a few Apple or Pear grafts, some rooted cuttings of Currants or Gooseberries, or a piece of some kind of Rhubarb of any even moderately improved sort would be a great assistance, and where they can be spared from the garden of the owner the gift is greatly prized, and encourages by its kindliness and the interest it shows far more than a mere present of money would do.

If a good vegetable can be got out in a rural neighbourhood it is a benefit to the whole community, for the cottagers spread it among themselves, and it makes at least a step in diminishing the prejudices too often existing amongst them against some of the most wholesome vegetables. Sometimes (as with Carrots) from the notion that "they are food for horses," sometimes with the more unanswerable argument that "they do not care for them," food is neglected which

if not as nutritious or savoury as the Potatos, Onions, and Cabbage which appear to form a large proportion of the cottage vegetable diet, is at least valuable as making a variety and diminishing the difficulties caused by failure of the more favourite crop. A few rows of Carrots and Parsnips would be highly desirable, Beetroot desirable also if the idea of it being "earthy" could be got over; Jerusalem Artichokes might fill a corner neatly and usefully, which otherwise would be a mere eyesore, and any single vegetable added to the cottage list would be a help in itself, and in some districts still more as a step towards inducing the agricultural labourers to add to their own food supplies.

Inefficient tools, and too few even of these, form another difficulty in cottage gardening; there must be some kind of a spade, but it is by no means necessarily in fit order for digging to any good purpose: and for subordinate work that does not come into the man's department, the fire shovel, a superannuated coal shovel, or even a large old dinner knife are just as likely as not to be pressed into the service. Other tools need an eye to their condition, but the head offence against all horticultural rules lies in what can scarcely be called the "watering pot." The real legitimate watering pot may exist amongst cottage horticultural appliances in some places, but in the district under the writer's observation for many years if it was there it did not appear, and under these circumstances water has to be carried in whatever may come to hand (probably a pail slopping over at every step), and administered at last in a flood. Nothing need be said as to the subsequent state of the bed, each centre of operation from a pool becomes a hardened patch of mud with the surface earth driven in all directions, and the appearance and the healthy porousness of the soil equally injured.

To those only accustomed to the splendid spade husbandry of the great vegetable growing districts such a state of things may seem incredible, but in some parts of the country the tools brought by the agricultural labourers when extra hands are needed in the garden are very troublesome to those who have to superintend the work. It is almost impossible without constant overlooking to procure more than a mere surface skimming of the soil, and in the men's own holdings, where they wish to turn the ground to the best advantage, the inefficiency of the tools has to be made up by loss of time and more severe labour.

Good tools are a very heavy expense to the cottager, and it is not to be wished that the want should be supplied by donations obviously as such, but for the smaller garden requisites a great deal of help and encouragement may be given from the Christmas presents and similar liberalities which are often exceedingly perplexing to their donors in the matter of useful selection. A parcel of strong clasp knives (such as are sent out by one of our cutlers famous for his steel for this special purpose), of good size and sufficiently good quality at 1*s.* apiece, is a delight to all the lads who can secure one, and the smaller garden tools would be equally acceptable; and looking over the lists of prizes at the purely local village horticultural shows it cannot but occur that the household goods—kettles, fireirons, warming pans, &c.—though useful and most kindly bestowed, might be well replaced in some cases by their out-of-door brethren in the shape of sets of garden tools or utensils.

This difficulty, however, is economical, and reverting merely to the picturesque surroundings of the cottage, perhaps the most perplexing of the arrangements to throw into any accordance with rural or ornamental groupings is the collection of household goods which are washed at the door, and, unless they are well looked to, set to drain on borders or steps or where chance may leave them. The things, of course, must be washed and dried somewhere, and cottage accommodation is far too limited to be encroached on with a view to the picturesque, but with a little care the arrangements to ensure a fitting appearance may add much also to comfort.

If the things must be attended to outside the door a regular place should be made to set them on, and on their own low bench the rich brown tints of the earthenware pans and pitchers, mixed with the few other things which are all that should be allowed to appear, are far from unpleasing. A single large flat stone or two or three flags raised about the thickness of three bricks from the ground, so as to form a long low table or bench beneath the cottage window, has a good effect; or about the same quantity of surface of ground neatly laid with bricks raised a little above the walk with the edges carefully fixed and a little Ivy running at the back (on the side nearest the house), makes a neat platform where bowls or pans may stand with propriety instead of rolling in everybody's way, or, worse still, being hung on the top of any stout pole at hand. The sort of half screen formed by a bush at the cottage door is even more objectionable than having all open, as making a half hiding place for brooms, pails of soap-suds, and all kinds of things which are presumed to be out of sight, but which can be plainly seen all the time through the ragged stems.

If the cottage door has a narrow porch hidden by climbers, a flower border beneath the window on one side, and a low stone drying bench on the other, with a little Ivy at the back, and a strong bush, such as Gorse, Laurustinus (or Rosemary as a favourite that will be cared for), at the corner of the house, the effect will be good and usually sufficiently ornamental.

For screens to pigstyes, Laurels well clipped so as to form a thick green wall are invaluable, and occasionally, however objectionable in themselves, some good plants of the common wild Bramble may be turned to great account in neglected corners for stopping what would be runs to and fro by the children into neighbouring gardens or orchards.

Rubbish heaps may be much screened by a very low wall in front with Ivy trained over it (the eye being carried by the green over the miscellaneous collections to the leaves beyond without necessarily noticing its formation), and while the slight amount of ornamental arrangement will not interfere with convenience, the advantage of having a regular place for rubbish would often save a deal for the garden, and keep it from being thrown over the fence into the lane. It is far from being always the case that the cottager knows how much that is simply annoying in the air may be turned to account with a little earth thrown over it; and in these matters, or the lighter ones of the mere ornamental appearance of his place, any suggestion from those he lives amongst and looks up to is usually most gratefully received and acted on. *O.*

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, DEC. 29, 1875.

Month and Day.	Barometer: Mean Reading, Reduced to 32° Fahr.	Barometer: Departure from Average of 18 Years	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition: Dew Point	Degree of Humidity. Sat. = 100.	Wind: Average Direction.	Rainfall.
Dec.	In.	In.	°	°	°	°	°	°			In.
23	30.00	+0.14	51.4	40.9	10.5	45.8	+ 7.4	39.2	78	WSW: SW.	0.00
24	30.03	+0.17	53.7	41.2	12.5	47.4	+ 9.2	43.5	88	WSW: W.	0.01
25	30.21	+0.34	49.9	38.5	11.4	43.6	+ 5.6	38.6	84	SSW: SW.	0.00
26	30.24	+0.36	46.4	38.1	8.3	43.4	+ 5.6	41.9	91	SW.	0.00
27	30.29	+0.40	46.2	42.8	3.4	44.3	+ 6.7	42.6	94	SSW: SW.	0.00
28	30.31	+0.42	46.3	41.9	4.4	44.1	+ 6.6	39.0	82	SW.	0.03
29	30.24	+0.34	46.4	42.2	4.2	44.2	+ 6.8	40.0	85	WSW: SW.	0.00
Mean	30.19	+0.31	48.6	40.8	7.8	44.7	+ 6.8	40.7	85	SW.	sum 0.01

Dec. 23.—A very fine clear day. Strong wind.
— 24.—A fine day, but dull and cloudy at times.
— 25.—A fine day. Misty.
— 26.—A fine day, overcast and misty in morning.
— 27. A dull cloudy day.
— 28. Fine, but dull and cloudy day.
— 29. A fine day. Cloudy.

—— During the week ending Saturday, Dec. 25, in the neighbourhood of London the reading of the barometer at the level of the sea decreased from 29.88 inches at the beginning of the week to 29.67 inches by the afternoon of the 19th, increased to 29.80 inches by the night of the same day, decreased to 29.63 inches by about midnight on the 20th, increased to 29.96 inches by the afternoon of the 21st, decreased to 29.70 by the morning of the 22d, increased to 30.29 inches by midnight on the 23d, decreased to 30.16 inches by the afternoon of the 24th, and increased to 30.46 inches by the end of the week. The mean reading for the week was 29.97 inches, being 0.12 inch below that of the preceding week, and 0.06 inch below the average.

The highest temperatures of the air observed by day ranged between 56¾° on the 22d, and 47½° on the 19th; the mean value for the week was 52½°. The lowest temperatures of the air observed by night varied from 38° on the 20th to 45° on the 22d, the mean value being 41°. The mean daily range of temperature in the week was 11½°, the greatest range in the day was 13½° both on the 20th and 21st, and the least, 6°, on the 19th.

The mean daily temperatures of the air were as follows:—19th, 45°.2; 20th, 44°.6; 21st, 46°; 22d, 50°.7; 23d, 45°.8; 24th, 47°.4; 25th, 43°.6; and the departures in excess of their respective averages were:—5°.2, 4° 9, 6°.7, 11°.9, 7°.4, 9°.2, 5°.6. The mean temperature of the air for the week was 46°.2, being 7°.3 above the average of sixty years' observations.

The highest reading of a thermometer with blackened bulb in vacuo placed in sun's rays was 74½° on the 23d. The lowest reading of a thermometer on grass with its bulb exposed to the sky was 35° on the 25th; the mean for the seven low readings was 39°.

The direction of the wind was S. W., and its strength brisk. The weather during the week was fine and very mild.

Rain fell on five days, the amount measured was 0.41 inch.

In England the highest temperatures of the air observed by day were 56¾°, both at about London and Cambridge; at Sunderland 53° was the highest temperature in the week. The mean value from all stations was 55°. The lowest temperatures of the air observed by night were 35°, both at Eccles and Hull; at Bristol 39½° was the lowest temperature in the week. The general mean from all stations was 37°. The range of temperature in the week was the largest at Eccles, 20½°, and the smallest at Bristol and Bradford, both 15¾°. The mean range of temperature from all stations was 18°. The mean of the seven high day temperatures was the greatest at Truro, 53¾°, and the least at Hull, 49°. The mean from all stations was 50½°. The mean of the seven low night temperatures was the largest at Truro, 43°, and the smallest at Eccles and Sunderland, both 39°. The mean value from all stations was 40½°. The mean daily range of temperature in the week was the greatest at Eccles, 12½°, and the least at Liverpool, 9°. The mean daily range from all stations was 10°. The mean temperature of the air for the week from all stations was 45¾°, being 1½° higher than the value for the corresponding week in 1874. The highest was at Truro, 48°, and the lowest at Hull, 44½°.

The amounts of rain measured at the different stations ranged from nine-tenths of an inch at Bradford to two-tenths of an inch at Norwich. The average amount from all stations was half an inch.

The weather during the week was fine and very mild.

Lightning was seen on the evening of the 22d inst. at Sunderland.

In Scotland the highest temperatures of the air ranged from 53¾° at Glasgow to 50° both at Dundee and Greenock, the general average being 51¾°. The lowest temperatures of the air varied between 38° at Leith and 32° at Dundee, the mean value being 33¾°. The mean range of temperature in the week was 18°. The mean temperature of the air for the week from all stations was 42½°, being 12° higher than the value for the corresponding week in 1874. The highest occurred at Leith, 44¾°, and the lowest at Aberdeen, 41¼°. Rain was measured at each of the above stations, and the amounts varied from ⅜ inches at Greenock to three-quarters of an inch at Dundee and Aberdeen. The average fall over the country was 2 inches.

At Dublin the highest temperature was 53°, the lowest 36°, the mean 45°, and the fall of rain 0.98 inch.

JAMES GLAISHER.

Variorum.

MUSA SAPIENTUM.—This fruit is cultivated near the coast to a small extent, and there are some grown at 5° S. lat., where, on account of constant quarrels between the Zanzibar traders and the native population, gardens of Bananas are rarely met with. In the kingdom of Uganda, and along the western side of the Victoria Nyanza Lake, the country is literally a series of Banana forests surrounding the dwellings. There are many varieties known to the people—those for boiling like Potatos, eating, and for wine-making. The boiling variety is pulled green, and generally boiled in its own leaf along with beef or mutton. They are excellent in this way. The eating kinds are often luscious and fine-flavoured. Wine is made from the ripe fruit by putting a quantity peeled into a wooden trough the length of a log canoe, adding grass, stamping the mass, cleansing it of sediment, adding the flour of parched grain, and covering over the whole canoe, first with the green leaves, and then with a large quantity of dead leaves, so as to exclude the air. The flour and rotting leaves assist in a slight fermentation. On the third day it is ready; and if well made

I know of no better drink, tasting somewhat like Sauterne wine, but slightly sparkling. The leaves and stem of the plant are made into grain-covers, lashings, fences, or screens: a chip from the bark serves to scrub the hands and body; the leaf-midrib makes a temporary pipe-stem, and water is collected in the leaves. The general term for the Plantain is "n'deezee;" but there is the "mamoonyew" for boiling; the "m'beev" for the ripe fruits, which are excellent for making wine, but are indifferent when boiled; and the "m'konothembo," or elephant's fingers, are a very large coarse eating variety. At Unyanyembe, Moosah presented us with dried Banana from Ugigi. They were not so tough as our Normandy Pippin, and just as pleasant to eat. *J. A. G., in Transactions of the Linnean Society*, 1875: "*Botany of the Speke and Grant Expedition.*"

Enquiries.

He that questioneth much shall learn much.—BACON.

89. FLOWERING OF THE CHESTNUT TREE.—When does the Chestnut tree (Castanea) blossom in England? The authorities, from J. E. Smith down to Loudon, say in May. Did any one ever see a Chestnut tree in flower in Great Britain in May, or even in June? *O.*

Answers to Correspondents.

A HORTICULTURAL CHRISTMAS PRESENT: *G. P., Post Office, Basingstoke*, writes:—"I shall be glad to make a present of five useful volumes by the late George Glenny, new, to any young gardener willing to pay carriage—*Manual of Practical Gardening; Gardeners' Everyday Book; Handbook to the Garden and Greenhouse; Culture of Flowers and Plants; Treatises (Properties of Plants), &c.*

BOOKS: *S. H.* Mr. Robinson's *Parks, Promenades, and Gardens of Paris* is published by Murray, Albemarle Street, W.

DUKE OF BUCCLEUCH VINE: *R. P.* The Duke of Buccleuch Grape is a somewhat gross-growing sort, and at times difficult to get to start into active growth. It does quite as well on its own roots as when grafted.

EUCHARIS: *R. H.* This is a plant of very easy culture; it succeeds well in good turfy loam, with a moderate quantity of sand. Small plants, consisting of a single bulb, should for the first season be grown in 6-inch pots. It is most usual with plants of this size to keep them on growing for the first year without further rest than they get by the necessarily lower temperature in winter, as by this means there is time saved in getting them up in size. They should be placed during the spring and summer in a night temperature of from 65° to 75°, with 10 or so higher in the daytime, giving a little shade in very sunny weather, and air daily, keeping the soil moderately moist. The winter temperature should be 60° in the night, and a little higher in the day. Give larger pots as required, when the growth is matured, to induce them to flower. Water must be withheld for six or eight weeks, applying no more than just enough to prevent the leaves shrivelling, after which give as much as will moisten the soil thoroughly, and raise the temperature. By this treatment it can be induced to flower at almost any time of the year. With a sufficient number of plants a succession of bloom may be had all the year round, as when they get strong the growing, resting, and flowering process can be repeated two or three times a year. As the plants get plenty of roots they are benefited by mulching with rotten manure, also by manure-water. *T. Baines.*

GUANO-WATER FOR VINES: *A Subscriber.* When your Vines are growing freely a little guano-water will be beneficial to them. It is difficult to define the quantity—you may safely use a good handful to a gallon of water. If the border is inside, a little guano sprinkled over the soil will be found beneficial.

NAMES OF FRUITS: *T. H. P.* Your Pear is the Forelle or Trout.—*I. McIndoe. Pear:* Thompson's. *Apples:* 4, Dutch Codlin; 5, Cellini. The others we do not recognise.

NAMES OF PLANTS: *D. D. M.* Cyrtomium caryotideum.—*A. A.* Epidendrum ciliare.—*C. B.* Dendrobium Pierardi.—*P. H. G.* We cannot make out what your Maxillaria is.—*J. Dimmick.* Schizostylis coccinea.—*M. R., Grantham.* 1, Begonia hydrocotylefolia ×manicata; 2, B. fuchsioides; 3, B. insignis; 4, B. Saundersii; 5, B. incarnato-purpurascens; 6, B. nitida. The Orchid is Sophronitis militaris: perhaps the best way to grow this is in wet sphagnum.—*J. Cocker & Sons.* Asplenium schizodon.—*H. G. S.* Aphelandra aurantiaca.

NURSERIES IN SCOTLAND: *Carron.* Mr. Brown in the *Forester* remarks on this subject, that it is to be inferred from *Walker's Essays* that public nurseries were established in Scotland for the rearing of forest trees between the years 1730 and 1760. About this time one Boutcher, an Edinburgh nurseryman, wrote a treatise on the rearing of forest trees.

PEARS CRACKING: *Mrs. Preston.* The cracking of the Pears in question is most likely due to the roots having got into the cold subsoil. We would take them up, and replant them at once.

PEARS FOR THE WESTERN COUNTIES OF IRELAND: *M. N. M.* The following may suit you:—*Open Espaliers:* Louise Bonne of Jersey, Marie Louise, Glou Morçeau, Beurre Diel, Maréchal de la Cour, Doyenné du Comice. *Pyramids:* Williams' Bon Chrétien, Louise Bonne of Jersey, Suffolk Heavy Flemish Beauty, Beurré Bosc, Beurré d'Aremberg. *South Wall:* Marie Louise, Glou Morçeau, Beurré Rance, Easter Beurré, Josephine de Malines, Jargonelle. *East or West Walls:* Jargonelle, Gansell's Bergamot, Glou Morçeau, Winter Nelis, Josephine de Malines, Bergamotte d'Esperen. These should be all on the Quince stocks, if they can be got, with the exception of Marie Louise and Jargonelle. Procure the trees as large as you can, if you want fruit early.

PINE CULTURE: *W. Spenceley & Son.* Mr. David Thomson's *Practical Treatise on the Culture of the Pine-apple*, published by Messrs. Blackwood & Son, Paternoster Row, E.C., gives all the information you desire. You certainly will not find it profitable to grow Pine-apples from seed.

PLANTING A FERNERY: *Salix.*—The impossibility of moving the plants when necessary to be cleaned is one of the drawbacks to the planting-out system, another equally serious objection is that when the roots have unlimited scope the strongest growers soon get so big, that, except in the case of very large houses, they outgrow the available space, and smother the weaker growers near them. Ferns, above all other plants, look much better when planted out than when the pots are stood upon stages, or even on the floor of the house; but there is another method that is not nearly so much used as it deserves to be, and which combines all that is requisite to produce a natural effect without any of the inconveniences we have alluded to—that is, plunging the pots in a bed arranged so as to give the plants the appearance of being planted therein. This possesses the advantages of admitting of their being moved for cleaning when required, as also to make any desired change in the appearance of the house which can thus be effected in a way not possible when they are permanently planted. Overgrowth is likewise restricted, and any that are suffering by being in too close proximity to others can easily be removed. The surface can be covered with Lycopodium and low-growing Ferns, giving a natural effect to the whole.

VINES: *A Constant Reader.* The cankered-like or gnarled protuberances around the collar stem of your Vines is of an ordinary character. There is first an attempt to form roots here, then a blue aphis finds a lodgment and the gnarls increase. The blood manure has nothing to do with it. When pruning the Vines cut away as much as you can of this without laying bare too much of the stem, and thoroughly scrub and clean all out you can. The Vines will be very little the worse.

CATALOGUES RECEIVED.—William Paul & Son (Waltham Cross, London, N.), Catalogue of Seeds, &c.—Dicksons & Co. (1, Waterloo Place, Edinburgh), Descriptive Priced List of Gladioli.—Messrs. Downie & Laird (17, South Frederick Street, Edinburgh), Descriptive Catalogue of Garden, Flower, and Agricultural Seeds, Implements, &c.

COMMUNICATIONS RECEIVED.—W. C. T. (with thanks).—E. A. O.—H. M.—W. C.—"Lovers of Gardening."—W. D.—W. B. E.—W. T.—W. S.—J. H.—W. H.—J. T.—W. T.

*** IMPORTANT NOTICE.—*The* AGRICULTURAL GAZETTE *is now* PUBLISHED *on* MONDAYS, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, December 30.

The holidays have completely checked business, and there is scarcely any alteration to quote. Nearly 800 St. Michael Pines have been sold since Christmas Day, having arrived in very good condition. *Jas. Webber, Wholesale Apple Market.*

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per doz.	42 0	60 0	Hyacinths, per doz.	12 0	18 0
Begonias, per doz.	6 0	12 0	Hyacinths, Rom., do.	12 0	30 0
Bouvardias, do.	12 0	18 0	Mignonette, do.	6 0	9 0
Cyclamen, do.	12 0	24 0	Myrtles, do.	3 0	9 0
Cyperus, do.	6 0	12 0	Pelargoniums, scarlet, per doz.	6 0	9 0
Dracæna terminalis	30 0	60 0	Poinsettias, per doz.	15 0	24 0
— viridis, per doz.	12 0	24 0	Primula sinensis, do.	6 0	12 0
Epiphyllums, do.	18 0	42 0	Solanums, do.	6 0	24 0
Euphorbia jacquiniæflora, per doz.	9 0	18 0	Tulips, do.	9 0	18 0
Ficus elastica	1 6	7 6	Veronica, do.	4 0	12 0
Heaths, in var., doz.	12 0	30 0			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Azaleas, 12 sprays	2 0	4 0	Pelargoniums, 12 spr.	1 6	3 0
Camellias	4 0	12 0	— Zonal do.	1 0	2 0
Carnations, 12 blooms	2 0	4 0	Poinsettia, per doz.	4 0	12 0
Cyclamen, 12 blooms	0 3	0 6	Primula, dbl., p. bun.	1 0	1 6
Epiphyllum, p. doz.	1 0	3 0	Roman Hyacinths, 12 sprays	3 0	3 0
Eucharis, per doz.	6 0	18 0	Roses, indoor, p. doz.	3 0	9 0
Gardenia, per doz.	6 0	12 0	Spiræa, 12 sprays	1 0	3 0
Heliotropes, 12 spr.	0 6	1 0	Stephanotis, 12 sprays	6 0	12 0
Mignonette, 12 bun.	6 0	9 0	Tuberoses, per doz.	3 0	6 0
Narcissus, per dozen	3 0	6 0	Violets, 12 bunches	3 0	6 0

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1 0	2 6	Oranges, per 100	6 0	12 0
Cobs and Filbts., lb.	0 6	0 9	Pears, per doz.	1 6	5 0
Grapes, per lb	1 6	6 0	Pine-apples, p. lb.	2 0	5 0
Lemons, per 100	6 0	10 0	Walnuts, per bush.	8 0	12 0
Melons, each	2 0	4 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz	4 0		Lettuces, per score	2 0	
— Jerusalem, p. lb.	0 3		Mint, green, bunch	1 6	
Asparagus (English), per bundle	8 0	10 0	Mushrooms, per pott.	1 0	2 0
Beans, French, p. 100	2 0	3 0	Onions, young, bun.	0 4	0 6
Beet, per doz.	1 0	2 0	Parsley, per bunch	0 4	
Brussels Sprouts, lb.	0 4		Potatos (new), baskt.	1 0	
Cabbages, per doz.	1 0	2 0	— Sweet, per lb.	0 6	
Carrots, per bunch	0 6		Radishes, per bunch.	0 2	0 4
Cauliflowers, p. doz.	2 0	4 0	— Spanish, doz.	1 0	
Celery, per bundle	1 6	2 0	— French	0 6	
Cucumbers, each	2 0	3 6	Rhubarb, per bundle	1 3	1 6
— Batavian, p. doz.	2 0	3 0	Salsafy, per bundle	0 9	
Herbs, per bunch	0 2	0 4	Seakale, per punnet	1 0	2 0
Horse Radish, p. bun.	3 0	5 0	Shallots, per lb.	0 3	
Leeks, per bunch	0 2	0 4	Tomatos, per doz.	1 0	2 0
			Turnips, per bundle	0 4	

Potatos—Rocks, £5; Regents, £7 to £8; Kidneys, £7 to £8 per ton.

SEEDS.

LONDON: *Dec.* 30.—In consequence of the holidays we have no alteration of importance to report this week concerning the agricultural seed trade. All descriptions of Clover are held with great firmness, and a brisk consumptive demand early in the spring is confidently anticipated. Our latest advices from New York describe the arrivals in that city of Western and State seed as still very meagre. New home-grown samples do not come forward more freely, so that in all probability we shall have to rely upon France for the bulk of our supply. For Trefoils full prices are asked, but the demand for the moment is quiet. There is no change in the value of either Alsike or white Clover. Holders on the other side have raised their quotations for French-Italian 1*s.* to 2*s.* per bale. Fine black Rape seed has become scarce. Complete stagnation characterises the Mustard seed trade. Canary seed continues exceedingly dear: the supply of English appears to be rapidly falling off. In Hemp seed the tendency of rates is also upwards. Foreign spring Tares are steady at the late advance. Feeding Linseed is in fair request at unaltered currencies. There is a good business doing in blue boiling Peas. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, E.C.*

CORN.

Monday being held in the City as a Bank Holiday there was no business done on the Corn Exchange. On Wednesday the market opened with a very quiet appearance, and during the day there was no appreciable increase of business. The fresh arrivals of Wheat were short, and factors asked the rates of last Friday, though not wholly indisposed to close sales at a little less money. Barley and Malt were nominally unaltered, and the prices given for Oats and other kinds of spring corn were about the same as before. Flour was dull, with a drooping tendency. —Average prices of corn for the week ending Dec. 25, 1875:—Wheat, 45*s.* 9*d.*; Barley, 34*s.* 9*d.*; Oats, 23*s.* 4*d.* For the corresponding week in 1874:—Wheat, 44*s.* 8*d.*; Barley, 44*s.* 5*d.*; Oats, 29*s.* 4*d.*

CATTLE.

At the Metropolitan Market on Monday there was a very moderate supply of beasts; trade, however, was not very brisk, yet choicest qualities readily found purchasers at our top quotation. The number of sheep was unusually small, even for a holiday market. The few choice qualities on offer were readily sold, and in some instances the top quotation was exceeded. Calves were scarce and dear. Quotations:—Beasts, 4*s.* 8*d.* to 5*s.* 8*d.*; and 6*s.* to 6*s.* 6*d.*; calves, 4*s.* 8*d.* to 6*s.* 8*d.*; sheep, 6*s.* to 6*s.* 6*d.* and 7*s.* to 7*s.* 6*d.*; pigs, 4*s.* 8*d.* to 5*s.* 8*d.*—On Thursday beasts were in moderate supply, choice qualities being scarce. Trade was active, at very little alteration in price. Business among sheep, except for choicest, was slow, and Monday's rates were scarcely realised. Calves continued scarce and dear. Good milch cows were sold at a good figure.

HAY.

The rates current at Whitechapel market on Thursday were:—Clover, best, 120*s.* to 150*s.*; inferior, 80*s.* to 90*s.*; hay, best, 115*s.* to 135*s.*; inferior, 60*s.* to 80*s.*; and straw, 36*s.* to 48*s.*—Cumberland Market quotations:—Superior meadow hay, 132*s.* to 140*s.*; inferior, 90*s.* to 110*s.*; superior Clover, 150*s.* to 160*s.*; inferior, 105*s.* to 126*s.*; and straw, 48*s.* to 52*s.* per load.

POTATOS.

Trade this week at the Borough and Spitalfields markets has been almost at a standstill. But very small supplies of English have arrived, and they have hung on hand. The little business in foreign has been at reduced rates. Quotations:—York Regents, 160*s.* to 180*s.*; other Regents, 140*s.* to 160*s.*; rocks, 80*s.* to 100*s.*; Dutch rocks, 80*s.* to 90*s.*; French round, 60*s.* to 80*s.*; Belgian kidneys, 90*s.* to 100*s.* per ton.

COALS.

There was no market on Monday, that being held in the City as a Bank Holiday. On Wednesday business was flat, and in some cases a reduction of 2*s.* per ton in house coals was accepted. Quotations:—Bower's West Hartley, 19*s.*; Bebside West Hartley, 19*s.* 9*d.*; Hastings Hartley, 19*s.* 9*d.*; West Hartley, 19*s.* 9*d.*; Walls End—Haswell, 22*s.*; Hetton, 22*s.*; Hetton Lyons, 19*s.* 9*d.*; Hawthorn, 19*s.* 9*d.*; Lambton, 21*s.* 6*d.*; South Hetton, 22*s.*; Tunstall, 20*s.*; Kelloe, 20*s.*; East Hartlepool, 21*s.* 9*d.*; Original Hartlepool, 22*s.*

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AND WISH TO GROW

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THE BEST FLOWERS,
THE BEST POTATOS,

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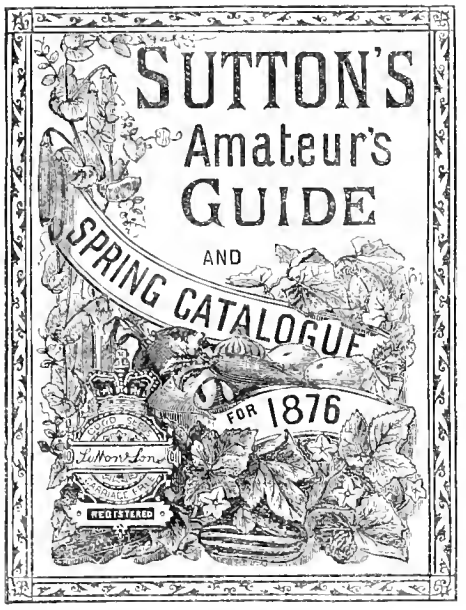

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Magnificent strain, quite distinct. The leaves, which are very broad and fleshy, recurve so as to almost cover the pot; the flowers, which are much larger than in the old sorts, and of very brilliant shades of colour, and fine form. By sowing now on a gentle hotbed they may be had in bloom in autumn, and seedling plants always yield much the finest blooms. Erecta and Horizontalis, separate or mixed.

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FOR THE PRESENT SEASON.

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A fine new late wrinkled marrow Pea, growing to the height of about 3 feet, with fine long well-filled pods, containing Peas of a delicious flavour. It keeps on the bloom much longer than most other Peas of the same class, and will be found a desirable acquisition for exhibition and market gardening purposes.

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A new and distinct early dwarf wrinkled marrow, of superior quality, large size, and great productiveness, coming in for use a week earlier than "Champion of England." The plants are of robust and branching habit, the pods broad and well filled. It has been spoken of very highly by numerous Gentlemen's Gardeners, as well as by large Growers for Market, to whom it was sent for trial last season. Height, 2 feet.

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This fine new Pea is of branching habit, about 3 feet high, very prolific and bearing large curved pods, containing seven to eleven Peas, which are of excellent flavour; useful for second and general crop, also for late sowing, as it is never affected by mildew. A fine exhibition and market Pea.

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SEED WAREHOUSES, 60, BARBICAN,
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PINUS AUSTRIACA, 3 to 4 feet, 6*s.* per 100; 4 to 5 feet, 10*s.* per 100.
SCOTCH FIR, 3 to 4 feet, 4*s.* per 100; 4 to 5 feet, 6*s.* per 100.
SPRUCE FIR, 3 to 4 feet, 8*s.* per 100; 4 to 5 feet, 15*s.* per 100
LAURELS, 2 to 3 feet, 6*s.* per 100; 3 to 4 feet, 10*s.* per 100.
GREEN BOX, 1½ to 2 feet, 20*s.* per 100.
PRIVET, 2 to 3 feet, 10*s.* per 1000.
WHITETHORN QUICK, very fine, transplanted, 6*s.*, 8*s.* and 10*s.* per 1000.
FREDERICK PERKINS, 2, Gold Street, Northampton.

FRUIT TREES.—TO THE TRADE.

PLUMS, Standard Victoria, Prince Englebert, and Violet, 6*os.* per 100.
CHERRIES, Standard, 6*os* per 100.
APPLES, 2-yr. untrained, 40*s.* per 100.
PEARS, 2-yr. untrained, 40*s.* per 100.
,, dwarf-trained, 15*s.* per dozen.
APRICOTS, Moor Park, dwarf-trained, 30*s.* per dozen.
GOOSEBERRIES, Ashton Red and Midsummer Yellow, 10*s.* per 100. The above are very fine.
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POPLAR, Lombardy, 2 to 3 feet, 4*s.* per 100, 35*s.* per 1000; 3 to 4 feet, 5*s.* per 100, 40*s.* per 1000; 4 to 6 feet, 8*s.* per 100, 75*s.* per 1000; 6 to 8 feet, 15*s.* per 100; 8 to 10 feet, 25*s.* per 100
,, Ontario, 4 to 6 feet, 8*s.* per 100; 6 to 8 feet, 12*s.* per 100, 8 to 10 feet, 25*s.* per 100.
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PRIVET, Evergreen, 1½ to 2 feet, 15*s.* per 1000; 2 to 3 feet, 20*s.* per 1000; 3 to 4 feet, 25*s.* per 1000; 4 to 5 feet, 30*s.* per 1000.
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,, fine, 6 to 8 feet, 18*s.* per 100; extra strong, 8 to 10 feet, 45*s.* per 100.

EVERGREENS, ORNAMENTAL TREES and SHRUBS.

AZALEA PONTICA, bedded, 4 to 6 inches, 6*s.* per 100, 50*s.* per 1000.
,, ,, bushy, transplanted, 1½ to 2 feet, 6*s.* per dozen, 45*s.* per 100; 2 to 2½ feet, 9*s.* per dozen, 65*s.* per 100.
BOX, Green, 1 to 1½ foot, 3*s.* per dozen, 16*s.* per 100.
,, 1½ to 2 feet, 4*s.* per dozen, 25*s.* per 100; 2 to 3 feet, 4*s.* 6*d.* per dozen, 30*s.* per 100.
LAUREL, Portugal, 1½ to 2 feet, 4*s.* per dozen, 30*s.* per 100.
,, ,, very fine, 2 to 3 feet, 8*s.* per dozen, 60*s.* per 100.
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,, Cunningham's White, very bushy, 1¼ to 1½ foot, 50*s.* per 100; 1½ to 2 feet, 65*s.* per 100.
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,, single scarlet, 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100, 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.
,, Cockspur, 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100; 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.
YEW, English, fine, large stock, 9 to 12 inches, 12*s.* per 100; 1 to 1¼ foot, 20*s.* per 100; 1 to 2 feet, 5*s.* per dozen, 25*s.* per 100; 2 to 3 feet, 7*s.* per dozen, 45*s.* per 100; 3 to 4 feet, 12*s.* per dozen, 80*s.* per 100.
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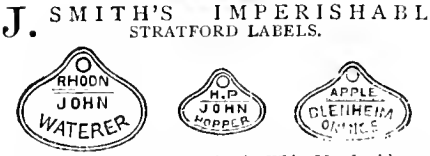

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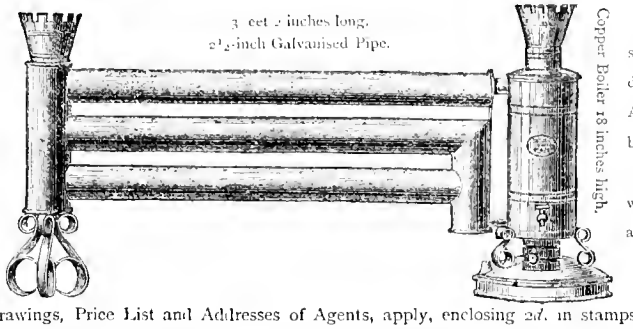

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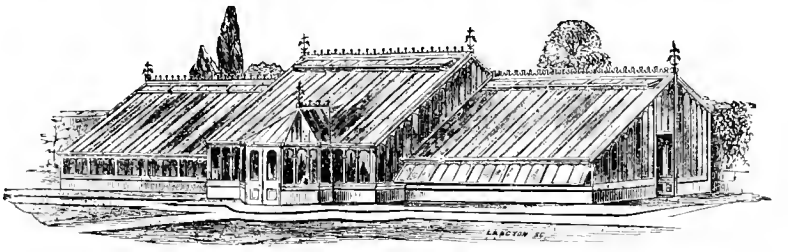

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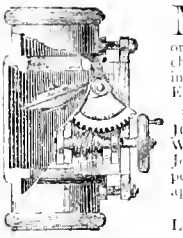

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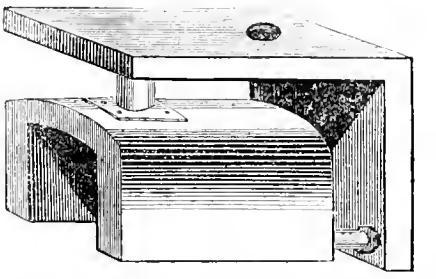

These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements viz., the water space at back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel; the cost of setting is also considerably reduced, and likewise the space occupied; at the same time these Boilers are simple in construction, and being made of wrought iron are not liable to crack. They are made of the following sizes:—

Sizes.			To heat of 4-in. Pipe.	Price.		
High.	Wide.	Long.	Feet.	£	s.	d.
20 in.	18 in.	18 in.	300	7	0	0
20 ,,	18 ,,	24 ,,	400	8	0	0
20 ,,	18 ,,	30 ,,	500	9	0	0
24 ,,	24 ,,	24 ,,	700	12	0	0
24 ,,	24 ,,	30 ,,	850	14	0	0
24 ,,	24 ,,	36 ,,	1,000	16	0	0
24 ,,	24 ,,	48 ,,	1,400	20	0	0
28 ,,	28 ,,	60 ,,	1,800	25	0	0

Larger sizes if required.

From Mr. CHARLES YOUNG, *Nurseries, Balham Hill, S.W., May 29, 1873:*

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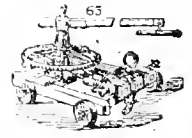

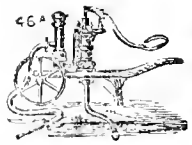

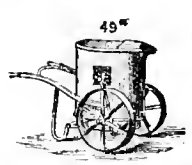

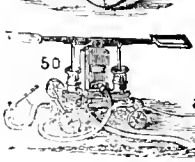

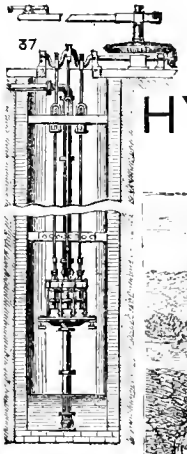

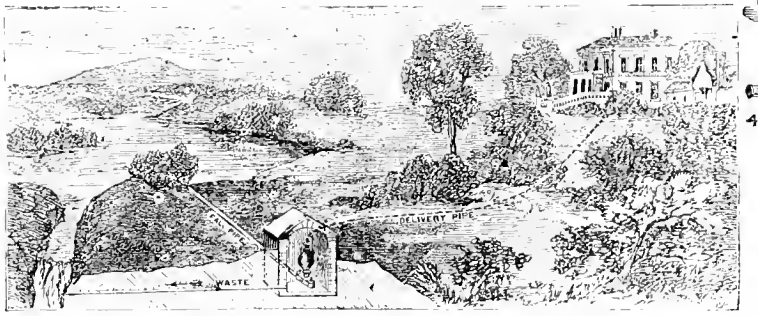

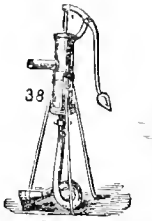

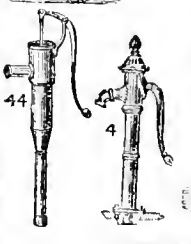

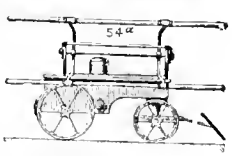

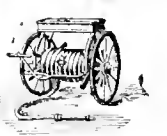

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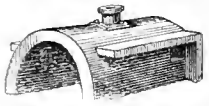

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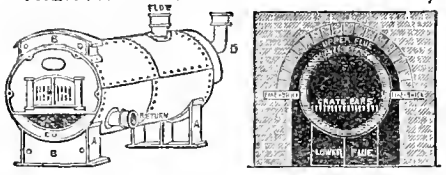

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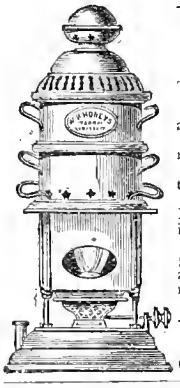

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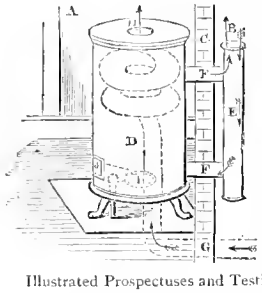

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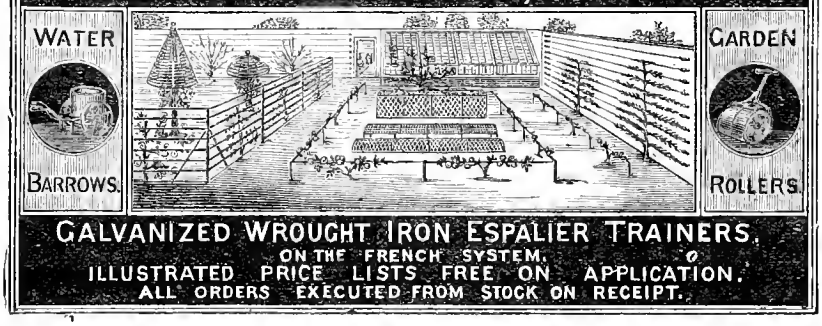

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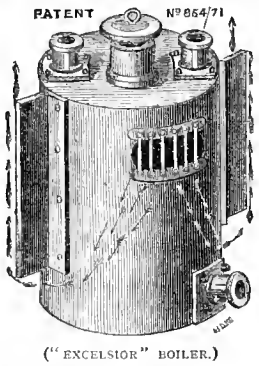

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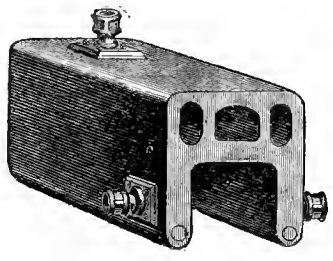

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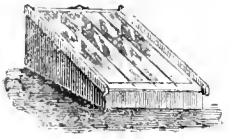

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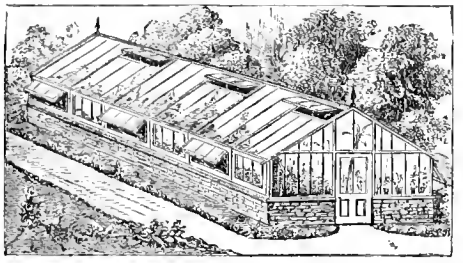

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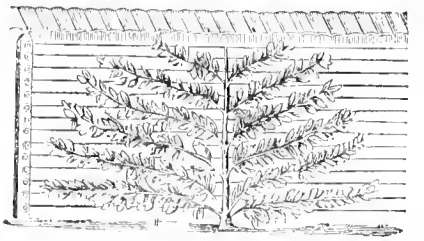

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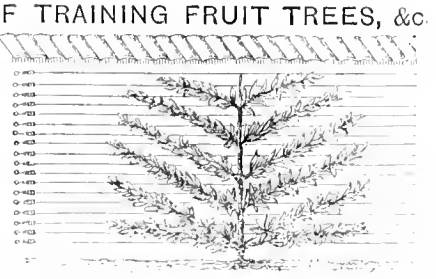

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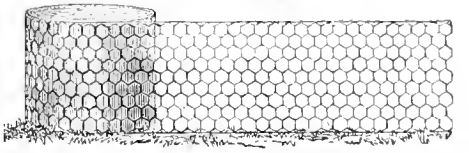

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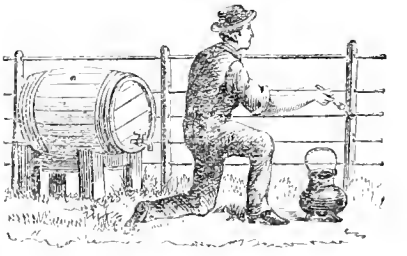

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THE

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On view the morning of Sale, and Catalogues had.

Established and Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, January 12, at half-past 12 o'Clock precisely, a lot of Imported ORCHIDS, including a quantity, just received from Brazil, of Sophronites grandiflora, the rare Cyrtopodium Woodfordi, from La Guayra; Trichocentrum tigrinum, from Ecuador; also Cattleya maxima and Pescatorea Roezlii, from Ecuador; an Importation of various plants from the United States of Colombia, including Pilumna fragrans, Cattleyas, Anguloas, &c., and a small collection of Established Orchids, including:—

Cypripedium Ashburtoniæ	Oncidium superbiens
Oncidium Marshallianum	Masdevallia Veitchii
Cattleya Eldorado splendens	Odontoglossum vexillarium
Odontoglossum Andersonianum	Oncidium Forbesii
Oncidium Xanthodon	Cattleya minas
Odontoglossum sceptrum	Oncidium macranthum hastiferum

On view the morning of Sale, and Catalogues had.

Lilies and other Roots.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, January 13, at half-past 12 o'Clock precisely, a collection of fine-grown LILIES, including Wilsoni, carmolicum, Dalmaticum, Szovitzianum, Isabellinum, canadense (true) in two distinct forms, Humboldtii, &c., also a fine collection of CALOCHORTUS and CYCLOBOTHRA, the beautiful COLCHICUM SPECIOSUM, the very rare and beautiful CYPRIPEDIUM JAPONICUM and DENDROBIUM JAPONICUM, &c.; and 10,000 magnificent BULBS of LILIUM AURATUM, just arrived from Japan in the best possible condition.

On view the morning of Sale, and Catalogues had.

Chiswick, Middlesex.

To GENTLEMEN, FLORISTS, MARKET GARDENERS, DEALERS, and OTHERS.

MR. J. A. SMITH is instructed to SELL by AUCTION, on the Grounds adjoining the "Feathers Inn," and Hogarth House adjacent, on WEDNESDAY, January 12, at 1 o'Clock precisely, Four Well-constructed GREEN and PROPAGATING HOUSES, with the Fittings and Hot-water Piping, Tubular Boiler, Brickwork, Stone and Slate Paving, Three-Light Boxes, 2000 Geraniums, Prize Cyclamen and other Plants in Pots, Two Heaps of Rich Manure, Garden Roller, &c.; 200 Petersburg Mats (new), Brown Mare and Two Carts, Two Antique Specimens of Assyrian Sculpture on Marble, a quantity of Wrought and Cast Iron, and remaining Outside Effects, to clear the Grounds at the expiration of Tenancy.

On view the day prior and morning of Sale. Catalogues on the Premises, and of the Auctioneer, Hammersmith, W.

WANTED, a SEED BUSINESS, in a good Market Town, with SMALL NURSERY.
J. P., *Gardeners' Chronicle* Office, W.C.

To Nurserymen and Florists.

TO be SOLD, the LEASE and GOODWILL (either with or without the well-selected Stock) of an old Established BUSINESS, situate in the midst of a rapidly increasing neighbourhood in a western district of town. Rent nominal. Price to an immediate purchaser moderate. Apply to GEORGE G. FLINT, Surveyor, 18, Duke Street, Manchester Square, London, W.

To Fruit Growers, Seedsmen, and Florists.

J. MONRO, of Potter's Bar, has just been requested to find a TENANT for a very nice little Business within 30 miles of London; good house, seed shop; six good houses, all heated, except one, planted with choice Vines, Peaches, &c. Eight years Lease unexpired. £100 would take to the lot—Stock, Crops, &c.; also a first rate span-roofed house, well heated. For further particulars apply to
J. MONRO, Potter's Bar, N.

To the Trade and Others.

BEANS, Early Longpod and Windsor; ONION SEED, fine white Spanish; POTATOS, Early Goodrich; ASPARAGUS, forcing and other plants; CABBAGE Plants, best stocks, most approved sorts in any quantities, cheap and good. Lowest cash prices, &c., on application to
FREDERICK GEE, Seed Grower, &c., Biggleswade, Beds.

AMERICAN SEED POTATOS.—A Grower having a few more of the above than he requires for his own planting, begs to offer them as under, at per sack of 1½ cwt.:—

EXTRA EARLY VERMONT, 16s.	IDAHO, 12s.
EARLY ONEIDA, 13s.	EARLY ROSE, 10s.

Apply, E. A., Post Office, Minster, near Ramsgate

SCOTCH FIR, True Native Highland.—For Sale, about 50,000 magnificent SCOTCH, 2 to 2½ feet.
ABIES DOUGLASII, 4 to 5 feet; THUJA GIGANTEA, 4 to 5 feet; CEDRUS ATLANTICA, 6 to 8 feet, COMMON HOLLY, 4 to 6 feet; CUPRESSUS LAWSONIANA, 4 to 6 feet.
All fine rooted stuff, grown in a very exposed private Nursery. Prices on application to
HOGG AND ROBERTSON, Nurserymen, &c., 22, Mary Street, Dublin.

From Paris.—Tea Roses by the Thousand, and Four THOUSAND of H.P. PAUL NERON.

LÉVÊQUE AND SON, NURSERYMEN, 26, Rue du Lœgat, Ivry-sur-Seine, near Paris, have still a splendid and large selection of TEA ROSES, grafted on their own roots, grown in small pots—Devoniensis, Souvenir d'un Ami, Adam, Madame Margottin, Souvenir de Paul Néron, Vicomtesse de Cazes, &c., and all the best sorts, by the dozen or 100 of each. Four thousand of H.P. Paul Néron, strong plants, grown in pots and on their own roots; prices on application.

To the Trade.

SEAKALE, excellent roots for Forcing, and any quantity, 90s. per 1000; any number under, 10s. per 100. Packing, 1s. for every 500 or under.
ASPARAGUS of all ages, price on application.
RHUBARB and PÆONIES.
Post-office Orders payable at High Street, Battersea.
ALFRED ATWOOD, 5, Simpson Street, Battersea, S.W.

To the Trade and Others.

SURPLUS STOCK, CHEAP.

VINES, fruiting and planting; dwarf-trained PEACHES, NECTARINES, PLUMS, and CHERRIES; BLACK CURRANTS; LAURELS, Common, 3 to 6 feet; PRIVET, 3 to 5 feet; CHESTNUTS, Horse, 6 to 10 feet; Scarlet do., 6 to 8 feet; ELMS, 6 to 8 feet; MAPLES, Common, Norway, and Scarlet, 6 to 9 feet; POPLARS, Abele, Black Italian, and Balsam, 6 to 10 feet; Lombardy do., 6 to 12 feet.
The above are all clean and well grown. Price on application to
E. MALLER, The Nurseries, Lee and Lewisham, S.E.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both Single and Double; with every sort of Early Spring Flowers. LIST on application.
Mr. WEBB, Calcot, Reading.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

Abies excelsa aurea (the Golden Spruce).

MESSRS. J. AND C. LEE beg to announce that they now intend to send out this magnificent tree. When planted in the full sunlight the whole tree is suffused with the richest gold. First-class Certificate from the Floral Committee of the Royal Horticultural Society. Well-established plants, 21s. each. A few of extra sizes, 31s. 6d. and 42s. each. The usual allowance to the Trade.
Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

Planting Season.

CHARLES BURGESS begs to offer the following:—Strong Standard, Pyramid and Dwarf-trained FRUIT TREES, ROSES, Evergreen and Deciduous FLOWERING SHRUBS, English OAKS, ELMS, and LIMES, up to 10 feet; Larch, Spruce, and Scotch FIRS, and a general Nursery Stock. Prices on application.
The Nurseries, London Road, Cheltenham.

ANDRÉ LEROY'S Nurseries, at Angers, France, the largest in Europe.—NEW CATALOGUE of Fruit and Ornamental Trees, Shrubs, Camellias, Roses, Stocks, Seedlings, &c., sent on application.
Freight from Angers to London, *viâ* Steamers from St. Nazaire, about 2s. per 100 lb., except for packages below 500 lb.
Office in London: Messrs. DIECHE AND SON, 150, Fenchurch Street, E.C.

Budded Chestnuts, Hybrid Hollies.

CHESTNUTS, Scarlet, Double White, &c., 2-yrs. budded, 2 to 3 feet, 30s. per 100.
HOLLIES, Hybrid, from seed, 9 to 12 inches, 25s. per 100.
RETINOSPORA PISIFERA AUREA, 9 to 12 inches, 8s. per 100. Cash.
WALKER AND CO., Farnborough Station, Hants.

Roses on the Manetti Stock, Suitable for any Soil.

GEORGE GRAY AND SON offer, of their usual fine quality, 500 varieties, including all the best sorts known, at 6s. to 9s. per dozen, 50s. to 65s. per 100. The Manetti stock is acknowledged the best for dwarf Roses, producing no suckers from the root, which are so troublesome from the Briar when established. Our dwarf Roses are budded very low, and are finely grown. CATALOGUES free.
Nurseries, Chertsey, Surrey.

FINE AVENUE TREES, Straight and Handsome.
CHESTNUTS, Horse, 10 to 12 feet.
CHICHESTER ELMS, 10 to 12 feet.
LIMES, 10 to 12 feet.
NORWAY MAPLE, 10 to 12 feet.
OAKS, Turkey or Levant, 9 to 10 feet.
SYCAMORE, 10 to 12 and 12 to 15 feet, very straight.
ROBERT F. DARBY, The Nurseries, Cirencester.

Peas, Onions, &c.

MESSRS. F. SANDER AND CO. will be glad to make special quotations for Veitch's Perfection, Champion of England, Carter's First Crop, Sangster's No. 1, Harrison's Glory, British Queen, Ne Plus Ultra, and Early Emperor PEAS; Veitch's Autumn Giant CAULIFLOWER, true; SCARLET RUNNERS; Orange Globe MANGEL; White Spanish, Bedfordshire Champion, and White Intermediate ONION; Early York, Robinson's Champion Drumhead, Oxheart, and Improved Nonpareil CABBAGE. LEEK, large Musselburgh. Samples on application to
F. SANDER AND CO., Seed Growers, St. Albans.

To the Trade Only.

JOHN BESTER, White Hart Lane, Tottenham, offers the following:—
PELARGONIUMS, Queen Victoria, 10s. per dozen; Triomphe de St. Maude, the finest crimson-red market kind, 10s. per dozen; packing included.
BALSAM SEED, a few ounces of the very finest, in nine colours, 10s. per oz.
CUCUMBER, Beauty of St. Albans, 7s. per 100.
LOBELIA PUMILA MAGNIFICA, from store pots, at per 100 or 1000. Price on application.
All orders prepaid.

CHOICE SEEDS, &c.—
CUCUMBER, Beauty of St. Albans, the best of the Telegraph section, 1s. 6d. per packet.
" Telegraph, true stock, 1s. per packet.
" Duke of Edinburgh (Daniels), 1s. per packet.
SOLANUM CAPSICASTRUM, hybrids, from plants selected from the three best stocks in Covent Garden, 6d. and 1s. per packet.
LOBELIA PUMILA MAGNIFICA, 1s. per packet.
CELOSIA PYRAMIDALIS, saved from Mr. R. S. Yates' fine strain, 6d. and 1s. per packet.
LOBELIA PUMILA MAGNIFICA, seedling plants, 5s. per 100; plants from cuttings, 12s. 6d. per 100.
All orders prepaid.
J. BESTER, White Hart Lane, Tottenham, N.

To Market Gardeners and Others

SUTTON AND SONS can offer

Suttons' Ringleader Peas	Veitch's Perfection Peas
Suttons' Racehorse Peas	Scimitar Peas
Little Gem Peas	Bedman's Imperial Peas
Fortyfold Peas	Harrison's Glory Peas

Suttons' Improved Early Champion Peas.
Of true stocks, at moderate prices for large quantities.
Reading, Berks.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post free their GENERAL LIST of SEEDS, which includes their special stocks of
WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

To the Trade.

Home-grown GARDEN and AGRICULTURAL SEEDS

H. AND F. SHARPE'S Wholesale Special Priced LIST of the above Seeds of 1875 growth is now ready; it comprises all the best sorts in cultivation. The quality is very fine, and the prices will compare favourably with those of other growers.
Seed Growing Establishment, Wisbech.

New and Choice Seeds.

GEORGE AND GEORGE CUTHBERT'S Illustrated CATALOGUE, containing all the best English and Continental Novelties in Vegetable and Flower Seeds in cultivation, is now ready, and will be forwarded post-free on application.
Southgate Nursery and Seed Establishment, Southgate, N.—Established, 1800.

JOSEPH SMITH, SEN., Tansley and Scotland Nurseries, near Matlock, Derbyshire, has for Sale:—
RHODODENDRON PONTICUM, 4-yr. old seedlings, not grown on bog, but on heath soil, with fine roots; stiff healthy plants, 3 to 4 inches high, 5s. per 1000. Also Hybrid Catawbiense, named sorts, 7s. 6d. per 1000; with transplanted, from 1 to 1½ foot up to 3 and 4 feet, at very low prices, which can be had on application.
OAKS, large quantity, 3 to 4 and 4 to 5 feet.
With a GENERAL NURSERY STOCK. Prices on application.

DAVID LLOYD AND CO. (LIMITED).
CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.
Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following:—
J. T. RUBERY, 86, Rumford Place, Liverpool.
SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
R. AND J. TAYLOR, 17, Vachel Road, Reading. [ham.
AGENTS WANTED.

TRY HOOPER'S SEEDS this year.

HOOPER'S CATALOGUE is Ready.

HOOPER'S SEEDS are Genuine.

COLLECTIONS for KITCHEN GARDEN, 12s. 6d., 21s., 42s., 63s.; FLOWER GARDEN, 10s. 6d., 21s., 31s. 6d., 42s.

HOOPER'S COVENT GARDEN Stores, London, W.C.

CHOICE HYBRID GLADIOLI.—The Gladiolus being a special feature in our business, we respectfully invite Growers of this magnificent Autumn Flower to send for the New CATALOGUE of our Prize Varieties before making their annual purchases. In it all the best sorts are described, and the prices quoted are very moderate.
ROBERTSON AND GALLOWAY, Seed Merchants and Nurserymen, 157, Ingram Street, Glasgow.

SEED ORDERS should now be made out, and, as Seeds will be generally inferior in quality this year, they should be obtained early and from reliable Houses. Send at once for HOOPER'S CATALOGUE. It is the "best published," an "exhaustive compilation on Gardening subjects."—*Weekly Dispatch*. You will get well served if you send your orders to
HOOPER'S, Covent Garden Seed Stores, London, W.C.

SPECIAL OFFER, for Cash.
RHODODENDRONS, fine bushy, 1 to 1½ foot, 25s. per 100; 2 to 3 feet, 60s. per 100. LAURELS, Common, 20s. per 100; Portugal, 40s. per 100. MAHONIAS, 10s. per 100. CUPRESSUS and ARBOR-VITÆ, fine, 4 feet, 12s. per doz. HOLLIES, variegated, fine bushy, 3 to 6 feet, 3s. 6d. to 10s. 6d. each. FLOWERING and ORNAMENTAL SHRUBS, 3s. to 6s. per dozen. FOREST TREES, of sorts, 6 to 8 feet, 25s. per 100. APPLE, PEAR, PLUM, and CHERRY TREES, strong, 9s. per dozen. RASPBERRIES, strong, 6s. per 100. RED and BLACK CURRANTS, 8s. per 100. Finest H.P. ROSES, 50s. per 100.
R. THORNHILL, Bowdon Nurseries, Bowdon, Cheshire.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.
Notice is hereby given that the ANNAL GENERAL MEETING of the Subscribers to this Society will be held on THURSDAY the 20th inst., at the Bedford Hotel, Covent Garden, W.C., when an ELECTION of FOUR PENSIONERS will take place.
The Chair will be taken at 6 o'Clock precisely.
By Order, E. R. CUTLER, Sec.
14, Tavistock Row, W.C., Jan. 5.
P.S. The Voting Papers have all been delivered; any Member who may not have received one is requested to make immediate application.

Cooling's Matchless Broccoli.

GEORGE COOLING, NURSERYMAN and SEEDSMAN, Bath, has to offer his usual supply of carefully saved SEED of this unequalled variety of SPRING BROCCOLI, and will be glad to quote price of the same to the Trade. Retail price, per packet, 1s. 6d.

New Broccoli

CHRISTIE'S SELF PROTECTING LATE WHITE.—The finest late Broccoli in cultivation.

Mr. NISBET, *Gardener to* Sir Thomas Whichcote, Bart., *Osworby Park, says:* "Having seen Mr. Christie's Broccoli growing for the last three seasons I have no hesitation in recommending it as being the finest of all Broccolis I have yet seen, and for hardiness of constitution I know of no Broccoli to compare with it."

The above has been selected from numerous testimonials received in favour of this very valuable Broccoli for late use.

Per packet, 1s. 6d.

A limited quantity to offer to the Trade. Price on application.

EDMUND PHILIP DIXON, Seed Merchant and Nurseryman, Hull.

To Noblemen, Gentlemen, and Others who are REPLANTING this AUTUMN.

R. NEAL begs respectfully to call the attention of the above to his large and varied stock of Hardy SHRUBS, FRUIT, FOREST, and ORNAMENTAL TREES, ROSES, RHODODENDRONS, CLIMBING PLANTS, &c., which are now in fine condition for removal. An early inspection invited.

CATALOGUES may be had on application.

The Nurseries, Wandsworth Common, S.W.

Prize Seeds.

WRIGHT'S GROVE and GIANT CELERIES and CUCUMBERS.

WRIGHT'S GROVE RED and GROVE WHITE CELERIES were awarded the First Prizes at the South Kensington Show on November 10 and 11, 1875; see *Gardeners' Chronicle* (p. 627), November 13. These have been proved to possess all the good qualities required in a first class Celery Per ¼ oz. packets, 1s.

WRIGHT'S GIANT WHITE CELERY has a more robust habit and stronger growth than Grove White, combined with a fine flavour. It forms very solid hearts, which blanch easily Heads have been grown weighing from 8 lb. to 10 lb. each. Per ¼ oz. packets, 1s.

The following have secured supplies for the coming season:—

Hurst & Son, London.
Dickson, Brown & Tait, Manchester.
Sutton & Sons, Reading.
B. Crossland, Sheffield.
S. Finney & Co., Newcastle.
C. & J. Lee, Hammersmith.
Samuel Yates, Manchester.
Laird & Sinclair, Dundee.
E. Holmes, Lichfield.
W. Smith & Son, Aberdeen.

CUCUMBERS:—Wright's Wonder, fine White-spine, and Wright's Improved Black-spine. These will grow 24 to 30 inches long, without neck or handle, are very prolific and of mild good flavour; fine for exhibition. Berks Champion, Improved Sion House, Masters' Early Prolific, Munro's Duke of Edinburgh, Long Gun, Telegraph. Per packet, 1s.

Cash with orders will have prompt attention. Trade price on application.

WILLIAM WRIGHT, Seedsman, Retford, Notts.

MARTIN'S LONG GUN CUCUMBER.—Some quarter of a century ago Mr. Arthur, then traveller for a large firm of Nurserymen in Edinburgh, found this invaluable Cucumber being grown by a Gamekeeper named Martin, in the East Lothians; Mr. Arthur at once recognised its superiority over all other varieties, which character it has since maintained. Amongst the very few who have had the fortune to obtain the original stock, Mr. Arthur gave to our Mr. John Reid a few seeds under the very appropriate name of MARTIN'S LONG GUN. The original name of Martin's has been replaced by a firm who received a few seeds as a gift from Mr. John Reid, who has grown the original stock for over 25 years, and during his extensive experience he has failed to meet with any variety, including the many novelties, equal in flavour or such abundant croppers. It grows from 20 to 24 inches, and we confidently offer it as one of the very best grown. In sealed packets at 2s. 6d. each.

REID AND CO., Appley Bridge Nursery, Wigan.

DAVISON AND CO., White Cross Nurseries, Hereford, offer the following:—

APPLES, Cider sorts, 7 to 8 feet, 22s. per dozen, £8 per 100, £75 per 1000.
,, Dessert, 6 to 7 feet, 18s. per dozen, £7 per 100, £65 per 1000.
ROSES, Dwarf, selected from Rose Catalogue, 8s. per dozen, 60s. per 100, £25 per 1000.
,, Standard, selected from Rose Catalogue, 16s. per dozen, £6 per 100, £50 per 1000.
AMERICAN ARBOR-VITÆ, 3 to 4 feet, 20s. per 100.
AUSTRIAN FIR, 2½ to 3½ feet, 15s. per 100; 3½ to 4½ feet, 25s. per 100; 5 to 6 feet, 35s. per 100; all fine
BEECH, common, 5 to 6 feet, 12s. per 100. (plants.
BIRCH, Weeping, 5 to 6 feet, 10s. per 100.
COTONEASTER, 2 to 3 feet, 20s. per 100.
CHESTNUT, Horse, 6 to 7 feet, 25s. per 100.
LAUREL, Common, 4 feet, 30s. per 100.
,, Portugal, 2 to 2½ feet, 40s. per 100.
PINUS INSIGNIS, 3 to 4 feet, 70s. per 100.
SCOTCH FIRS, 7 feet, 25s. per 100.
THUJA LOBBII, 2 to 3 feet, 30s. per 100.
ABIES ALBERTIANA, 4 feet, 15s. per dozen.
,, DOUGLASII, 7 to 8 feet, 60s. per dozen.
,, NORDMANNIANA, 2½ to 3 feet, 27s. per dozen.
,, ,, very fine, 3 to 4 feet, 48s. per dozen.
,, PINSAPO, 4 to 5 feet, 72s. per dozen.
ARAUCARIA IMBRICATA, 2 to 3 feet, 42s. per dozen.
ACER, sorts, 9 to 10 feet, 18s. per dozen.
AILANTUS, 8 to 9 feet, 30s. per dozen.
BERBERIS JAPONICA, 3 feet, 18s. per dozen.
BEECH, Common, 7 to 8 feet, 9s. per dozen.
BIRCH, Silver Weeping, 9 to 10 feet, 9s. per dozen.
BIOTA AUREA, 1½ foot, 24s. per dozen.
,, ELEGANTISSIMA, 1½ to 2 feet, 42s. per dozen.
CATALPA SYRINGIFOLIA, 7 to 8 feet, 18s. per dozen.
CUPRESSUS LAWSONIANA, 4 feet, 12s. per dozen.
CEDAR, Red, 4 to 5 feet, 12s. per dozen.
CHESTNUTS, Horse, 7 to 8 feet, 12s. per dozen.
,, ,, Scarlet, 7 to 8 feet, 24s. per dozen.
LABURNUM, 9 to 10 feet, 24s. per dozen.
LIME, 10 to 12 feet, 20s. per dozen.
SYCAMORE, 7 to 8 feet, 9s. per dozen
ONTARIO POPLAR, 12 feet, 18s. per dozen
YEWS, Pyramid, 5 to 6 feet, 30s. per dozen; 8 to 9 feet, fine, 7s. 6d. each.
ASPARAGUS, Giant, 15s. per 1000; Connover's, 30s. per 1000.
SEAKALE, 2-yr., 10s. per 100.

DANIELS BROS.

Are now prepared to execute Orders from their Superb Stocks of

KITCHEN GARDEN and FLOWER SEEDS,

and respectfully invite all who intend purchasing to send for a copy of their "Illustrated Guide for Amateur Gardeners and Select Seed Catalogue for Spring, 1876."

The Illustrated Guide for Amateur Gardeners, Spring, 1876.

A thoroughly practical and comprehensive Guide for the Amateur or Professional Gardener, containing a Select List of choice Kitchen Garden and Flower Seeds, 100 pages of beautifully illustrated Letterpress, with Original Articles on the Cultivation of various Flowers and Vegetables, and complete Directions for the successful Management of the Kitchen and Flower Garden throughout the year. Also two superbly finished Coloured Plates. The whole enclosed in a Wrapper of the most exquisite design and workmanship. This will be found

The most beautiful and useful Seed Catalogue ever issued.

Gratis and Post Free to all intending Purchasers.

OPINIONS FROM THE PRESS.

"This is the most beautiful garden catalogue we have ever seen, the coloured illustrations are inimitable. Messrs. Daniels, the eminent seed growers, may justly feel proud in issuing such a complete and truly valuable catalogue as this, which will enhance the high reputation they have already so deservedly gained."—*The London Review.*

"The most tastefully ornamented cover we have ever met with."—*Florist and Pomologist.*

"Looking into the 'Spring Guide for Amateur Gardeners,' by Daniels Bros., our verdict is, useful as beautiful. It is brimful through about 100 pages of the most useful descriptive information and cultural hints, profusely illustrated by woodcuts."—*The Country.*

PRIVATE TESTIMONIALS.

From H.R.H. The Prince de Vismes, *Abbey House, Romsey.*

"Monseigneur le Prins J. S. de Vismes is much obliged to Messrs. Daniels for the very handsome catalogue. It is the best got up one he ever saw."

From the Rev. R. J. Simpson, *Melton Rectory, Norfolk.*

"Your new catalogue is much admired. A fitting ornament for the drawing-room table."

From Moses Gibbs, Esq., *Potton, Beds.*

"Your 'Illustrated Guide for Amateur Gardeners' is beautifully got up, the chromos especially being magnificently executed, and so true to nature. In addition to the endless information for the Amateur Gardener, it also contains some valuable hints for even the professional himself."

DANIELS BROS
Seed Growers
NORWICH.

SURPLUS NURSERY STOCK.

WHOLESALE PRICES.

ARAUCARIA IMBRICATA, 1½ to 2 feet, 24s.; 2 to 2½ feet, 30s.; 2½ to 3 feet, 40s.; 3 to 3½ feet, 48s. per doz.
BOX, Tree, 2 to 3 feet, 15s. per 100, £5 per 1000.
CUPRESSUS LAWSONIANA, 5 to 7 feet, 18s. per doz., 8 to 12 feet, 3s. to 5s. each.
PICEA NORDMANNIANA, 3 to 4 feet, 42s. per doz.
PINUS AUSTRIACA, 6 to 7 feet, 12s. per doz.
PRIVET OVALIFOLIUM, 6 to 7 feet, 25s. per 100
THUJA CHINENSIS, 5 to 6 feet, 12s. to 18s. per doz.
,, WAREANA, 4 to 6 feet, 15s. per doz
THUJOPSIS BOREALIS, 5 to 7 feet, 24s. to 30s. per doz.
YEW, English, very bushy, 3 to 4 feet, 24s. per doz.
WELLINGTONIA GIGANTEA, 5 to 6 feet, 60s. per doz.
SPRUCE FIR, extra fine, 2 to 3 feet, 5s. per 100.
LARCH FIR, 3½ to 4½ feet, 5s. per 100, 40s. per 1000.
SCOTCH FIR, 2½ to 3½ feet, 25s., 3½ to 4½ feet, 35s. per 1000.
ACACIA, white, 10 to 12 feet, 9s. per doz.
ALDER, common, 10 to 12 feet, 9s. per doz.
CHESTNUT, Horse, 8 to 10 feet, 6s. per doz.; 10 to 12 feet 9s. per doz.
POPLAR, Black Italian, 12 to 16 feet, 12s. per doz.
,, Lombardy, 12 to 14 feet, 12s. per doz.
,, Abele, 10 to 12 feet, 9s. per doz.
DWARF ROSES, very strong, 25s. per 100.

WILLIAM BRYANT, The Nursery, Rugby.

GRAND NEW HARDY FRUIT—DIOSPYROS KAKI.

A very truthful Engraving of this grand acquisition is given in the *Gardeners' Chronicle*, December 18, 1875. For further particulars see our Advertisement in *Gardeners' Chronicle*, Nov 19 and 26, 1875: also our CATALOGUE, free on application.

THE NEW PLANT AND BULB COMPANY, Lion Walk, Colchester.

LILIUM AURATUM, in magnificent condition and at Low Prices. See SPECIAL LIST, free on application.

THE NEW PLANT AND BULB COMPANY, Lion Walk, Colchester.

Lilies, all Known Kinds (Home-grown).

THE NEW PLANT and BULB COMPANY invite intending Purchasers to send for one of their CATALOGUES, which, in addition to Lilies, contains a selection of the best Hardy Flowering and other Plants in cultivation, all remarkably good, and such as will give a fine effect next season. The Trade liberally dealt with.

Lion Walk, Colchester.

AVENUE TREES.

	Girth 4 ft. from ground.
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10 inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8 ,,
MAPLES, Norway, 12 to 16 feet high ..	5 to 8 ,,
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10 ,,
,, Scarlet, 10 to 14 feet high	8 to 10 ,,
,, Double, 10 to 14 feet high	8 to 10 ,,
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10 ,,
ELMS, 15 to 18 feet	7 to 9 ,,

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.

Knap Hill Nursery, Woking, Surrey.

Evergreen Hedges.—Box, Green Hollies, and LIGUSTRUM OVALIFOLIUM.

R. NEAL, having a very large Stock of the above, can offer the same by the 100 or 1000 at a very low rate.

Also 10,000 ACER CAMPESTRIS, from 5 to 8 feet in height, clean-grown stuff.

Price on application.

The Nurseries, Wandsworth Common, S.W.

CERASUS LAURO-CERASUS CAMELLIFOLIA (the Camellia-leaved Laurel).—This extraordinary and elegant Laurel was raised by Mr. Wood, of Woodbridge, in Suffolk, on whose behalf we are now offering it for the first time to the public. The leaves are light green, like the common Laurel, but differ from it in shape in being elegantly curled, like a Camellia leaf, or more closely resembling in form the beautiful Croton volutum.

The effect of the plant, grown as a pyramid and well pruned, is peculiarly striking, and if planted close as an edging plant, and pinched well back, it produces a very neat and pleasing appearance.

We propose to distribute this well-known variety at the following low prices, being desirous of seeing it largely used, as it deserves to be, for the purposes above-mentioned:—Per plant, 5s.; per dozen, 42s. Special offer to the Trade.

J. AND C. LEE, Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

To the Trade Only.

MONRO'S DUKE OF EDINBURGH CUCUMBER. The above-named Cucumber having given the highest satisfaction this year, I beg to state that I again intend sending it out myself. Every seed offered is of my own growing and true, no other sort being cultivated here. Price 10s. per 100 seeds. Post Office Orders payable at Potters Bar, or Barnet, N.

PRIZES OFFERED.—J. MONRO will again give in Prizes at the Great Show of the Royal Horticultural Society, to be held at South Kensington, July 19, 1876, £1 for best brace, 15s. for second, 10s. for third. The same amount in prizes will be awarded at the Great International Exhibition in Scotland, to be held at Dundee, September 7, 1876. List of Firms having seeds direct from J. MONRO will be published in the *Gardeners' Chronicle*.

Genuine Seeds.

JOHN AND CHARLES LEE, Seedsmen to the Queen, invite attention to their new and extensive CATALOGUE of SEEDS for 1876. This Catalogue has been prepared with their usual care, and contains every novelty, whether home-grown or foreign, with the most minute and useful descriptions of both Vegetable and Flower Seeds. The prices of every article are the very lowest, considering the first rate quality of the various stocks offered. The long standing of the house of LEE (upwards of 100 years) is a sure guarantee of the excellence of their seeds and the soundness of their trading. Catalogues may be had post-free on application.

Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

JAMES BACKHOUSE & SON

OFFER THE FOLLOWING

FIRST-CLASS NURSERY STOCK.

FOREST and ORNAMENTAL TREES.

ASH, Mountain, 6 to 8 feet, *10s. 6d.* per 100, *2s.* per dozen.
ELM, English (from seed), 6 to 7 feet, *12s. 6d.* per 100, *2s. 6d.* per dozen; 7 to 8 feet, *20s.* per 100, *4s.* per dozen.
,, ,, grafted, 3½ to 4½ feet, *27s. 6d.* per 100, *5s.* per dozen; 5 to 6 feet, *40s.* per 100, *7s.* per dozen.
LABURNUM, 4 to 5 feet, *12s. 6d.* per 100, *3s.* per dozen.
LIME, 3 to 4 feet, *16s.* per 100, *3s.* per dozen; 5 to 6 feet, *30s.* per 100, *5s.* per dozen; 6 to 7 feet, *45s.* per 100, *7s. 6d.* per dozen.
MAPLE, Norway, 6 to 8 feet, *12s. 6d.* per 100, *2s. 6d.* per dozen; 8 to 9 feet, *20s.* per 100, *4s.* per dozen.
OAK, English, 2 to 3 feet, *27s. 6d.* per 1000, *4s.* per 100; 3 to 4 feet, *37s. 6d.* per 1000, *5s.* per 100; 4 to 5 feet, *55s.* per 1000, *7s. 6d.* per 100, *2s.* per dozen.
POPLAR, Abele, or White, 2 to 3 feet, *70s.* per 1000, *9s.* per 100, *2s.* per dozen; 6 to 7 feet, *20s.* per 100, *4s.* per dozen; 7 to 8 feet, *35s.* per 100, *6s.* per dozen.
,, Black Italian, 5 to 7 feet, *7s.* per 100, *2s.* per dozen; 7 to 9 feet, *10s. 6d.* per 100, *2s. 6d.* per dozen; 10 to 12 feet, *30s.* per 100, *6s.* per doz.; 12 to 15 ft., *50s.* per 100, *9s.* per doz.
,, Lombardy, 3 to 4 feet, *7s.* per 100, *1s. 6d.* per dozen; 4 to 5 feet, *10s. 6d.* per 100, *2s.* per dozen.
,, Ontario, 12 to 14 feet, extra, *18s.* per dozen.
PINUS AUSTRIACA, 3 to 4 feet, stout plants, many times transplanted, *40s.* per 100, *6s.* to *9s.* per dozen; 4 to 5 feet, ditto, *100s.* per 100, *12s.* to *18s.* per dozen; fine single specimens, *1s. 6d.* to *3s. 6d.* each.
,, MONTANA, 1½ to 2 feet, *6s.* per 100, *1s. 6d.* per dozen; 2 to 3 feet, *15s.* per 100, *3s.* per dozen; well adapted for covert planting or flanking rockwork.
SYCAMORE, 7 to 8 feet, *20s.* per 100, *5s.* per dozen; 8 to 10 feet, *35s.* per 100, *7s.* per dozen; 10 to 12 feet, *75s.* per 100, *12s.* per dozen.
WHITE BEAM (SORBUS), 3 to 4 feet, *16s.* per 100, *3s. 6d.* per dozen; 4 to 5 feet, *22s. 6d.* per 100, *5s.* per dozen.
WILLOWS, of sorts, *8s.* to *12s. 6d.* per 100, *2s.* to *3s.* per dozen.

CONIFERÆ.

ABIES DOUGLASII, 1-yr. seedling, extra fine, *75s.* per 1000, *10s.* per 100; 2 to 3 feet, *15s.* per dozen; 3 to 4 feet, *21s.* per dozen.
,, MENZIESII, 2-yr. seedling, 1-yr transplanted, *£3* per 1000, *12s. 6d.* per 100; 1 to 1½ foot, *32s.* per 100, *6s* per dozen, 1½ to 2 feet, *50s.* per 100, *9s* per dozen.
CEDRUS DEODARA, 1 to 1½ foot, *65s.* per 100, *10s. 6d.* per dozen.
CRYPTOMERIA ELEGANS, 3 to 4 feet, *36s.* per dozen
JUNIPERUS TRIPARTITA, 1½ to 2 feet, *10s. 6d.* per dozen; 2 to 2½ feet, *16s.* per dozen—a fine, branching, semi-erect kind, well adapted for covering banks, &c.
PICEA NOBILIS, 2 to 2½ feet, fine, *36s.* per dozen, 2½ to 3 feet, *50s.* per dozen.
PINUS CEMBRA, 2 to 2½ feet, *45s.* per 100, *7s. 6d.* per dozen; 2½ to 3 feet, *60s.* per 100, *10s.* per dozen.
RETINOSPORA PLUMOSA, 12 to 15 inches, *15s.* per dozen, 15 to 18 inches, *24s.* per dozen.
,, ,, ARGENTEA, 6 to 9 inches, bushy, *15s.* per dozen.
,, SQUARROSA, 9 to 12 inches, *6s.* per dozen.
SEQUOIA (TAXODIUM) SEMPERVIRENS, 1½ to 2½ feet, *60s.* per 100, *9s.* per dozen.

SHRUBS.

BERBERIS DULCIS, twice transplanted, *12s. 6d.* per 100, *2s. 6d.* per dozen
,, DARWINII, ditto, 9 to 15 inches, *12s 6d.* per 100, *2s. 6d* per dozen; ditto, 12 to 18 inches, *17s. 6d.* per 100, *3s. 6d.* per dozen.
BLACKTHORN or SLOE, strong transplanted, *30s.* per 1000, *4s.* per 100.
BROOM, Common, strong transplanted, *9s.* per 100, *2s.* p. doz.
,, Spanish, 1-yr. seedling, fine, *35s.* per 1000, *4s.* per 100.
CYDONIA JAPONICA, in variety, *9s.* per dozen.
DEUTZIA CRENATA fl.-pl., *30s.* per 100, *5s.* per dozen
,, CANDIDISSIMA fl.-pl., fine white, *6s.* to *12s.* per. doz.
,, FORTUNEI, *6s.* to *12s.* per dozen.
GYNERIUM ARGENTEUM (Pampas-grass), *6s.* per dozen; strong tufts, *9s.* to *18s.* per dozen.
HYPERICUM OBLONGIFOLIUM, fine for autumn-flowering, *30s.* per 100, *5s.* per dozen.
LILAC, White, 3 to 4 feet, *45s.* per 100, *7s.* per dozen.
,, of sorts, 2 to 3 feet, *25s.* per 100, *4s.* per dozen.
PRIVET, Evergreen, 2 to 3 feet, strong, *30s.* per 1000, *4s.* per 100; 3 to 4 feet, ditto, *40s.* per 1000, *5s.* per 100.
,, Japan, grafted, 1 to 1½ foot, *8s.* per dozen.
RHODODENDRON PONTICUM, 12 to 15 inches, bushy, *22s. 6d.* per 100, *4s.* per dozen; 15 to 18 inches, *30s.* per 100, *6s.* per dozen; 18 to 24 inches, *45s.* per 100, *8s.* per dozen; 24 to 36 inches, *75s* per 100, *12s.* to *18s.* per dozen
RIBES, of sorts, *18s.* per 100, *3s.* per dozen.
SPIRÆA, of sorts, *18s.* per 100, *3s.* per dozen.
SWEET BRIER, strong, *10s 6d.* per 100, *2s* per dozen.
TREE PÆONIES, of sorts, *15s.* to *30s.* per dozen.
VIBURNUM SIEBOLDII—a beautiful evergreen, with large shining Magnolia-like leaves; rather tender in the North, but a fine ornament for favourable situations, or for walls; 9 to 15 inches, *2s 6d.* to *3s. 6d.* each.
YUCCA CONSPICUA, fine plants, *5s.* to *15s.* each.
FLOWERING SHRUBS, of sorts, *21s.* per 100, *3s.* per dozen; extra strong, *30s.* per 100, *5s.* to *8s.* per dozen.

ROSES.

STANDARDS and HALF-STANDARDS, fine named sorts, *105s.* per 100, *15s.* per dozen.
DWARFS, on MANETTI STOCKS, ditto, *63s.* per 100, *9s.* per dozen.

FRUIT TREES.

APPLES, Pyramids or Bushes, strong fruiting trees, Ribston Pippin, &c., *18s.* per dozen.
,, Dwarf trained, *15s.* to *30s* per dozen,
CHERRY, Morello, ditto, *30s.* per dozen.
APRICOTS, Moorpark, Standards, trained, *9s.* to *15s.* each.
,, of sorts, Dwarf trained, *3s.* to *5s.* each
PEACHES and NECTARINES, of sorts, Standards, trained, *6s* to *9s.* each.
PEARS, Pyramids, strong fruiting trees, *18s.* to *24s.* per dozen,
,, Dwarf trained, Marie Louise, &c., *30s* to *50s.* per dozen.
PLUMS, of sorts, strong bushes, *18s.* to *24s.* per dozen.
CURRANTS and GOOSEBERRIES, good useful sorts, *2s.* per dozen; large sorts, *4s.* per dozen.

Detailed CATALOGUES of the above sent on application. Not bound by the prices quoted for less quantities than stated.

AMES BACKHOUSE AND SON, YORK.

The New Japan Apple.

PYRUS MAULEI, is now distributing, at *21s.*, *15s.*, and *10s. 6d.* each. It is as hardy as the common Apple, blossoms at the same time; the flowers are of a vivid orange-scarlet, fruit of a bright transparent lemon colour, very fragrant, about the size of the Golden Pippin Apple, which is produced in the greatest profusion.

The jam of this season has been tasted by some of the best judges and connoisseurs, and pronounced exquisite, and perhaps superior to any English or foreign fruit.

W. MAULE AND SONS, The Nurseries, Bristol.

Vines, Vines—Dwarf Roses.

PLANTING and FRUITING CANES of Black Hamburgh, Black Alicante, Lady Downe's, Muscat of Alexandria, White Lady Downe's, Madresfield Court, Gros Colman, Mrs. Pince, Trentham Black, Buckland Sweetwater, Foster's Seedling, Dr. Hogg, Muscat Hamburgh, Royal Muscadine, and West's St. Peter's, *2s. 6d.* to *5s.* each; Waltham Cross, *5s.* to *7s. 6d.* each; Pearson's Golden Queen, *21s.* to *31s 6d.* each.

DWARF ROSES, extra strong, *6s.* per dozen.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

SEEDS OF SUPERIOR QUALITY.

WM. PAUL & SON'S
ILLUSTRATED CATALOGUE OF SELECT VEGETABLE AND FLOWER SEEDS, &c.,

Is now ready, and will be forwarded, post free, on application.

Many sorts are home-grown, and all are selected with the utmost care from the most celebrated Stocks at home and abroad, in order to secure for their Customers the BEST QUALITY THAT CAN BE OBTAINED.

IMPORTANT: Observe the Christian Name,

WM. PAUL & SON,

PAUL'S NURSERIES AND SEED WAREHOUSE, WALTHAM CROSS,
LONDON, N.

OSBORN & SONS

BEG TO ANNOUNCE THAT THEIR ANNUAL

CATALOGUE of KITCHEN GARDEN and FLOWER SEEDS
For 1876

IS NOW READY, AND WILL BE FORWARDED, POST FREE, ON APPLICATION.

It contains a choice selection of all the best and most approved kinds of Vegetable and Flower Seeds, also the leading Novelties, including:—

OSBORN'S FORCING FRENCH BEAN, which has been proved one of the best and most prolific.

OSBORN'S SELECT RED BEET (or Dell's Crimson).

OSBORN'S WINTER WHITE BROCCOLI, undoubtedly one of the best, if not the best mid-winter variety in cultivation.

FULHAM NURSERIES, LONDON, S.W.

LILY OF THE VALLEY.—SERRES DE PERSAN.

The finest flowers of Lily of the Valley ever offered to the Trade will be supplied by the above-named Firm, between this and the middle of February, at the following prices:—

First Quality, 4s. per dozen. **Extra Quality, 5s. per dozen.**

These flowers are forwarded with their own roots (each order being of at least forty dozen), and delivered in any part of London, carriage paid, in twenty-four hours from the time they are taken from the houses.

They arrive in excellent order, as has been proved by several boxes already received here.

Persons not in correspondence with us are respectfully requested to add a remittance to their Orders. All Letters to be addressed to—

LA DIRECTION DES SERRES DE PERSAN,
SEINE ET OISE, FRANCE.

NOW READY,
NURSERY CATALOGUES FOR 1875-76.

WILL BE SENT POST FREE UPON APPLICATION.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),
EDINBURGH,
AND
54, BISHOPSGATE STREET WITHIN, LONDON, E.C.
BUSINESS ESTABLISHED, 1770.

GARDEN AND FLOWER SEEDS.

THOMAS METHVEN & SONS

BEG TO INTIMATE THAT THEIR DESCRIPTIVE PRICED

CATALOGUE OF KITCHEN GARDEN AND FLOWER SEEDS,

IMPLEMENTS, &c., for 1876,

Is now ready, and may be had, Post Free, on application.

EAST LOTHIAN INTERMEDIATE STOCK (true), in three colours. In packets, 1s. 2s. 6d., and 5s. each colour.

SNOW WHITE WALL-LEAVED EAST LOTHIAN STOCK.—One of the finest novelties introduced for many Seasons in the Intermediate Class. The purity of the white shows up well upon the grassy green foliage, and it bears the large truss and enormous flowers of the East Lothian varieties. In packets, 1s., 2s. 6d., and 5s.

SEED WAREHOUSES:

15, PRINCES STREET; and NURSERY GATE, LEITH WALK, EDINBURGH.

NEW PEA—"DR. MACLEAN."

Price, 7s. 6d. per Quart; 4s. per Pint.

Dr. Maclean Pea, from a Photograph.

CHARLES TURNER

Is much pleased in again being able to introduce a new Pea in "Dr. Maclean," and which is, in his experience, the finest Pea in cultivation.

"Dr. MACLEAN" is a blue wrinkled Marrow, coming in after "Advancer" and before "Premier." Height, 3 feet to 3 feet 6 inches, of very vigorous growth, but its chief recommendation is its wonderful productiveness, producing a third more Peas on the same space of ground than any other variety, and the flavour is of the first quality.

The popular Peas sent out by C. TURNER, viz., "Little Gem," "Advancer," "Wonderful," "Premier," and "Princess Royal," fine as they are, have stood no chance in comparison by the side of "Dr. Maclean," in trials of the three past seasons.

Very favourable opinions of the Horticultural Press and of many eminent Gardeners who have grown this Pea are given in CHARLES TURNER'S SEED CATALOGUE, which may be had on application. Also a CATALOGUE of ROSES, FRUIT TREES, SHRUBS, PLANTS, and BULBS.

THE ROYAL NURSERIES, SLOUGH.

THE KNAP HILL CYPRESS,

Cupressus Lawsoniana erecta viridis.

ANTHONY WATERER

Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices:—

3 feet high, 2½ feet in circumference, 30s. per doz.
4 feet high, 3 to 4 feet do., 42s. to 60s. per doz.
5 feet high, 4, 5 and 6 ft. do., 10s. 6d., 15s. to 21s. each.
6 and 7 feet high, 6 to 7 and 8 ft. do., 21s. to 31s. 6d. each.

No cuttings have been taken from the plants here referred to, which are simply perfect in growth and splendidly rooted.

KNAP HILL NURSERY, WOKING, SURREY.

NEW PEAS

FOR THE PRESENT SEASON.

KNIGHT'S NEW PEA, "THE STAR OF INDIA."

A fine new late wrinkled marrow Pea, growing to the height of about 3 feet, with fine long well-filled pods, containing Peas of a delicious flavour. It keeps on the bloom much longer than most other Peas of the same class, and will be found a desirable acquisition for exhibition and market gardening purposes.

Per quart, 5s.; per pint, 3s.

GRAYSON'S "EAST ANGLIAN."

A new and distinct early dwarf wrinkled marrow, of superior quality, large size, and great productiveness, coming in for use a week earlier than "Champion of England." The plants are of robust and branching habit, the pods broad and well filled. It has been spoken of very highly by numerous Gentlemen's Gardeners, as well as by large Growers for Market, to whom it was sent for trial last season. Height, 2 feet

Per quart, 2s. 6d.; per pint, 1s. 6d.

DUKE OF CONNAUGHT (Knight's).

This fine new Pea is of branching habit, about 3 feet high, very prolific and bearing large curved pods, containing seven to eleven Peas, which are of excellent flavour; useful for second and general crop, also for late sowing, as it is never affected by mildew. A fine exhibition and market Pea.

Per quart, 2s. 6d.; per pint, 1s. 6d.

Prices to the Trade on application.

NUTTING & SONS,

SEED WAREHOUSES, 60, BARBICAN, London, E.C.

HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,

KNAP HILL NURSERY, WOKING, SURREY.

FRANCIS & ARTHUR DICKSON & SONS.

106 Eastgate St. & The Upton Nurseries CHESTER.

Illustrated Catalogue of Vegetable & Flower Seeds,

Post free on Application.

Quality unsurpassed.

To the Trade.

WM. WOOD AND SON have much pleasure in offering magnificent dwarf-trained trees of the following:—

PEACHES, NECTARINES, and APRICOTS.

The Firm have long been celebrated for the excellence of of their trained fruit trees. Also very fine Dwarf-trained Peaches, Nectarines, and Apricots, with well ripened wood CATALOGUES on application

WM. WOOD AND SON, The Nurseries, Maresfield, near Uckfield, Sussex.

Finest Frame Cucumbers.

WOOD AND INGRAM offer fine Seed of the following well known varieties, saved in separate houses:—

ROLLISSON'S TELEGRAPH, for forcing, eight seeds for thirteen stamps.

MONRO'S DUKE OF EDINBURGH, for general purposes. Two hundred and three fruit of this variety were grown at once by W. & I. in a space of 84 feet by 4 feet. Eight seeds for thirteen stamps.

DANIELS' DUKE OF EDINBURGH, the finest for exhibition, growing from 30 to 36 inches long, and an immense bearer. Six seeds for thirteen stamps.

The Nurseries, Huntingdon.

STANDARD and DWARF ROSES.—An extensive collection of best exhibition varieties, and of very good growth, to be disposed of. Principal varieties—Alfred Colomb, Charles Lefebvre, Marie Baumann, Baroness Rothschild, Etienne Levet, La France, Francois Michelon, Louise Van Houtte, Marquise de Castellane, Countess of Oxford, Pierre Notting, Duke of Edinburgh, Madame Lachrarme, Madame Victor Verdier, Marechal Niel, Gloire de Dijon. GARDENER, St. Peter's Vicarage, Coventry.

To the Trade.

SPECIAL OFFER of SURPLUS STOCK of FOREST and ORNAMENTAL TREES, SHRUBS, &c.; all transplanted, clean, and well grown.

LIMES, 2 to 3 feet, 70*s.* per 1000; 3 to 4 feet, 10*s.* per 100; fine Standards, 50*s.* to 60*s.* per 100
MOUNTAIN ASH, fine Standards, 30*s.* per 100.
CHESTNUTS, Horse, fine Standards, 40*s.* to 50*s.* per 100.
MAPLE, Norway, fine Standards, 30*s.* per 100.
OAKS, English, fine Standards, 50*s.* to 80*s.* per 100.
THORNS, Paul's Crimson and Double Pink, feathered trees, 3*s.* per 100.
ALDER, 2 to 3 feet, 12*s.* 6*d.* per 1000.
HORNBEAM, 3 to 4 feet, 20*s.* per 1000.
LARCH FIR, 1 to 1½ foot, 10*s.* per 1000.
SNOWBERRIES, 3 to 4 feet, 20*s.* per 1000.
PRIVET, best Evergreen, 2 to 3 and 3 to 4 feet, 10*s.* to 15*s.* per 1000.
PINES, Austrian, 2 to 3 feet, 40*s.* per 1000.
SPRUCE FIR, 1 to 1½ foot, 14*s.* per 1000.
" " 2-yr. bedded, 6*s.* per 1000.
BLACKTHORN, fine transplanted, 10*s.* to 15*s.* per 1000.
WHITETHORN QUICKS, 6*s.*, 8*s.*, and 10*s.* per 1000.
MAHONIA AQUIFOLIA, 6 to 12 inches, 12*s.* per 1000; 12 to 18 inches, 18*s.* per 1000.
LAURELS, 1 to 2 feet, 40*s.* per 1000.
RED CEDARS, 2 to 3 feet, 20*s.* per 100.
CEDRUS DEODARA, 1 to 1½ foot, very fine, 50*s.* per 100; 1½ to 2 feet, very fine, 6*s.* per 100; 2 to 2½ feet, very fine, 100*s.* per 100.
LAURELS, Portugal, 1 to 1½ foot, 80*s.* per 1000; 1½ to 2 feet, 20*s.* per 100, £7 10*s.* per 1000
HANDSWORTH BOX, 9 to 15 inches, 60*s.* per 1000; 1½ to 2 feet, 15*s.* per 100.
GOOSEBERRIES, 10*s.* per 100.

LIST of General Nursery Stock on application to THOMAS PERKINS, 42, Drapery, Northampton

Dr. Maclean Pea.

CHARLES TURNER begs to announce that the following Firms have secured a stock of the above, and can supply the same:—

AUSTIN & MCASLAN	Glasgow.
BURGESS & KENT	Stoke-on-Trent.
BACKHOUSE, J., & SON	York.
BARR & SUGDEN	Covent Garden, W.C.
BULL, W.	Chelsea, S.W.
CARTER, J., & Co.	Holborn, W.C.
CATTELL, J.	Westerham.
CLIBRAN & SON	Altrincham.
COOPER, R.	Fleet Street, E.C.
COOLING, E.	Denby.
CUTBUSH, W., & SON	Highgate, N.
DANIEL BROTHERS	Norwich.
DICKSON, BROWN & TAIT	Manchester.
DICKSON, JAMES, & SONS	Chester.
DICKSON & Co.	Edinburgh.
DOBSON & SONS	Isleworth, W.
DOWNIE & LAIRD	Edinburgh.
DICKSON, E. P.	Hull.
FARRELL, J., & SON	Dublin.
FISHER, HOLMES & Co.	Sheffield.
FRASER, J.	Lea Bridge Road, E.
HAYWOOD	Worcester.
HEWITT, T.	Solihull.
HURST & SON	Leadenhall Street, E.C.
HEYNES, J.	Salisbury.
LAWSON CO., The	Southwark Street, S.E.
LEE, J., & Co.	Hammersmith, W.
LITTLE & BALLANTYNE	Carlisle.
METHVEN, T., & SON	Edinburgh.
NUTTING & SON	Barbican, E.C.
OSBORN & SONS	Fulham, S.W.
PINE APPLE NURSERY CO., The	Maida Vale, W.
PAUL & SON	Cheshunt, N.
PRINCE, G.	Oxford.
RUTLEY & SILVERLOCK	Strand, W.C.
ROLLISSON & SONS	Tooting, S.W.
ROBSON, J.	Altrincham.
ROBINSON, T.	Oxford.
SUTTON & SONS	Reading.
SIBBALD, T.	Bishop Auckland.
SHAW, J., & CO.	Manchester.
SHARP, C., & CO.	Sleaford.
SMITHERS & CRICHTON	London.
STUART & MEE'S	Kelso.
THOMSON, B.	Birmingham.
VEITCH, J., & SONS	Chelsea, S.W.
VEITCH, R. T.	Exeter
VERTEGANS, R. H.	Birmingham.
WOOD & INGRAM	Huntingdon.
WHEELER, J. C., & SON	Gloucester.
WRENCH, J., & SON	London Bridge, E.C.
WAITE, BURNELL & Co.	Southwark Street, S.E.
WALKER, J.	Thame.
WHEELER, GEORGE	Warminster.

The Royal Nurseries, Slough.

EDWARD TAYLOR, NURSERYMAN, Malton, Yorkshire, offers as under:—

GIANT ASPARAGUS roots, 2-yr., 2*s.* per 100, 15*s.* per 1000.
" Connover's Colossal, 2-yr., 2*s.* 6*d.* per 100, 20*s.* per 1000.
SEAKALE, 2-yr, 4*s.* 6*d.* per 100, 40*s.* per 1000.
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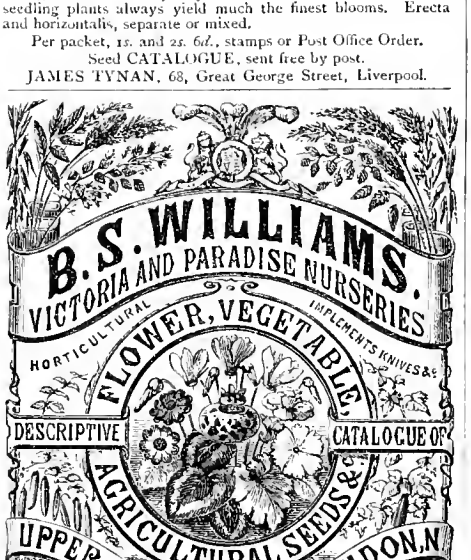

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A few friends of Mr. ALEXANDER MCKENZIE, as a tribute of their appreciation of him, have resolved, on the occasion of his relinquishing his active duties at the Alexandra Park (although still occupying the position of Consulting Landscape Gardener to the Company), to present him with a suitable TESTIMONIAL, as a momento of his long and valued connection with the neighbourhood.

Mr. McKenzie's recognised taste and ability, and the self-sacrificing devotion which on all occasions he has exhibited in the interests of Horticulture, have ensured for him, both within and without the pale of his profession, general esteem and respect. The various public works he has executed, such as the laying out of the Alexandra Park, the Thames Embankment, Finsbury Park, &c., are sufficient testimony of his genius, and these, with others of his works, afford examples of originality and skill from which all interested in horticultural pursuits may fairly profit. His kindly and genial disposition, his urbanity and general consideration for the interests of others; in short, his genuine, warm-hearted, and unostentatious goodness and liberality have endeared him to all who have the privilege of his acquaintance, and as a master and extensive employer of labour in this locality, Mr. McKenzie's name will long be remembered with affectionate regard.

Should you be desirous of co-operating, kindly communicate with JOHN BERTRAM, Hon. Sec.

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Merino Ewe—South Australia.
Group of Merino Rams—South Australia.
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Mr. J. Downing's "Veronica."
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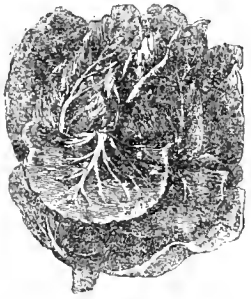

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Price, per packet, 1s. 6d.

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Awarded a First-class Certificate by the Royal Horticultural Society, October 7, 1874.

We have much pleasure in referring to the following valuable testimony of the high value of this Tomato, including the opinion of authorities to whom we have submitted fruit during the past autumn.

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In form, and firm bold double habit, they far surpass any previous introductions of this popular flower, whilst the richness and novel beauty of colouring they possess stamp them as a welcome addition to our hardy summer flowers.

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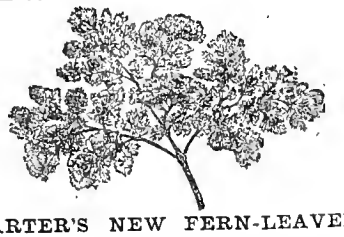

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This Bean fully sustains its reputation as the best Windsor Bean. Selected from a single pod containing seven Beans in 1864; the largest Bean in the pod was planted in 1865, which produced some extraordinary long and broad pods, all having more seeds in them than the pods of other stocks of Windsor Beans. The same process of selection was continued during the years 1866 to 1872, resulting in an improved variety of fixed type producing pods with four, five, and six beans in a pod. The general heavy crop and habit fully establishes beyond doubt the fact of its being the most productive and valuable variety of Windsor Bean ever offered to the public.

Hardy's Pedigree Windsor Bean has been grown at Chiswick, and pronounced to be a distinct Bean, intermediate between the Windsor and the Long-pod.

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This is a very distinct and peculiar variety, the leaves of the entire plant being serrated, taking the form somewhat of the Deer's antler; colour peculiar sea-green. The substance of the leaves exceedingly thick and fleshy, having a similar appearance in this respect to the Seaweed. It is very hardy and of good quality.

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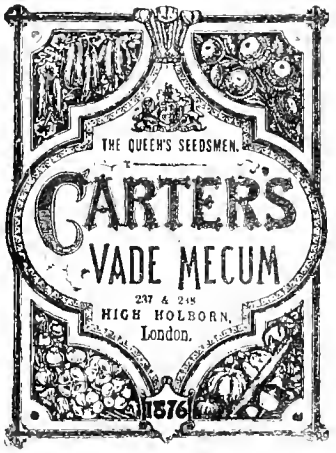

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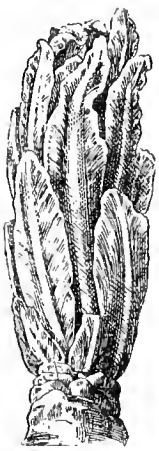
This is a most distinct and entirely new Vegetable, somewhat resembling Chicory in habit. It produces a moderate-sized beautifully white heart, in shape similar to a Cos Lettuce; and either eaten boiled or as a salad, it will be found a valuable acquisition to our short list of English Winter Vegetables. It is well known in Belgium, where it is most successfully cultivated to a large extent, in the following manner:—

Sow the Seed in drills early in June in well prepared soil, and as soon as the Plants have 4 or 5 leaves, thin out to a space of 6 inches from plant to plant, keeping the ground free from weeds, as the perfection of the Vegetable depends upon the size of the Root.

In October, dig up the Roots—cut down the leaves to a margin of about 2 inches, and replant thickly in a dry situation until forcing time—when *the whole plant* should be covered with a good layer of leaf-mould, and this again covered with a layer of dung, say from 2 to 3 feet in thickness. In about 20 days after this treatment the Vegetable will be ready for use.

Price, per packet, 1s.



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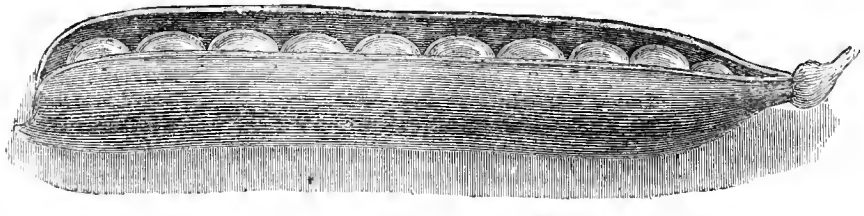
A very fine green wrinkled Marrow of exquisite flavour, *with many pods containing ten Peas in a pod.* The pods are sickle-shaped, and the height is 4 feet. During the past season the long curved pods of this variety, carrying a beautiful bloom, were to be observed in most of the collections of Peas which gained the prizes offered by ourselves and others at the various Horticultural Shows.



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Borecole, or Kale	2 *sorts*	Melon	1 *pkt.*
Brussels Sprouts	1 *pkt.*	Onion, Impd. Reading and others	3 ,,
Broccoli, best for succession	3 *sorts*	Parsley, Suttons' Imperial	1 ,,
Cabbage, do.	do. 3 ,,	Parsnip	1 *oz.*
Savoy, best sorts in cultivation	1 *pkt.*	Radish, best sorts for succession	3 ,,
Carrot, best sorts	3 *oz.*	Spinach	4 ,,
Cauliflower, do.	1 *pkt.*	Turnip, fine sorts for succession	3 ,,
Celery, do.	2 *sorts*	Vegetable Marrow	1 *pkt.*
Couve Tronchuda	1 *pkt.*	Sweet and Pot Herbs	2 ,,
Cress	3 *oz. and* 1 ,,	Tomato	1 ,,
Cucumber, best sorts	2 ,,		

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SATURDAY, JANUARY 8, 1876.

THE FRUITS AND VEGETABLES OF 1875.

THE past season, although one of the most fruitful on record, was not so remarkable as many of its predecessors for the introduction of new fruits to our knowledge. How this may be accounted for it is not our province to discuss here. Our duty just now is merely to pass in review the more remarkable of the acquisitions during the past year. That they are few and mostly unimportant we are bound to confess, but if we have not to congratulate ourselves upon the appearance of many novelties, we are at least thankful that no unworthy subjects are being foisted upon us, which it would have been equally our duty to condemn. Our race of useful fruits is now so extensive and of such excellent quality, that to secure an improved variety is no easy matter. Greater and better results can be achieved through improved cultivation than in the multiplication of mere varieties.

GRAPES, ETC.

Amongst Grapes, the pride of English fruit gardens, although we have no actual novelty to record we are pleased to be able to report on the continued excellence of the greatest novelty, viz., Golden Queen. To Peaches and Nectarines the same observations apply, but too much cannot be said in favour of Rivers' Lord Napier Nectarine. This is one of the best of newly introduced fruits. In regard to Apricots we have a welcome addition in that of the Frogmore Early, from Mr. Jones, of the Royal Gardens, Frogmore. This is the earliest of all Apricots, ripening three weeks in advance of the Moorpark, and it is good in quality as well as being early.

APPLES.

Of Apples (the staple fruit of our land), the number of seedlings submitted to our notice has been legion. Few, however, have passed muster amongst the authorities. We have already alluded to the excellence of Worcester Pearmain. It is a fine, handsome early Apple. Redleaf Russet has somewhat of the appearance of the Golden Knob, and is a fine late dessert fruit. St. Edmund Pippin is a small early dessert Apple of the Golden Russet character.

PEARS.

Of Pears the following, although not new, have during the past season come favourably into notice—viz., Beurré de Jonghe and Everard de Tournai, both of which are excellent late dessert Pears, and especially valuable on that account. A very large and magnificent seedling Pear also appeared in the hands of Mr. Wilmot. This has all the appearance of a huge Marie Louise, with the same buttery texture of flesh. It also greatly resembles the Pitmaston Duchesse d'Angoulême. Further trial is required to test its full merits or individuality.

STRAWBERRIES, ETC.

Strawberries come forward, as usual, in considerable numbers. Mr. Laxton's Pioneer is a fine hardy variety, and earlier than Keens' Seedling. Paul's Waltham Cross we have already noticed as an excellent mid-season sort, and then Dr. Roden introduces a whole host, many of them of considerable merit, such as Alpha, Bonnie Lass, Hundredfold, and a variety with prettily variegated foliage called Variegated Enchantress. In the Early Orleans we get the earliest of all Gooseberries, the fruits greenish white and of excellent quality. Melons are again brought forward in great numbers, and mostly of bad quality—due, perhaps, to the bad season, as the flavouring of Melons is greatly a matter of cultivation. The best new aspirants we tasted last season were Gilbert's A. F. Barron and Hero of Bath.

It is our duty also to record, as one of the triumphs of the past season, the fruiting of the Diospyros Kaki in the gardens of Sir William Hutt, Isle of Wight. This is an introduction from Japan of a few years ago. The fruits are of the size and colour of Oranges, the flesh juicy, with the taste of Apricot. As an ornamental fruit tree, in favoured localities this is a great addition, but it is of doubtful value as a dessert fruit in the general climate of England.

VEGETABLES.

In the vegetable department the acquisitions during the past season have not been very numerous, but it is not amongst vegetables that we look for mere novelty. New vegetables are at all times rare, although new names are for ever abundant; we owe quite as much to the careful selection and saving of pure seed for the improvement of our vegetables as we do to hybridisation or introduction. The seedsman who by careful selection presents us with a superior quality of any of our known or common vegetables deserves quite as much credit as the introducer of a new variety, and if this improved selection receives a new name by way of distinction it is fairly entitled to it. We do not object to new names to decidedly improved selections, but these should not be sent out as quite new and distinct varieties. The Royal Horticultural Society is doing good service to horticulture by its comparative trials of vegetables at Chiswick and by its reports disseminating correct information as to the value of the different sorts which are all strongly recommended by the various introducers.

PEAS, ETC.

Amongst Peas, which owe more to the efforts of the hybridiser than almost any other class, we have not this season so many actual novelties to record. The most notable amongst them is undoubtedly Mr. Turner's Dr. Maclean. This is a dwarf blue wrinkled marrow, having very large pods, and is an enormous cropper. This will prove a very useful main-crop Pea. From Scotland we hear of Allen's Champion, a good selection of the Champion of England type. Kidney Beans, Broad Beans, &c., present us with nothing new. Messrs. Carter & Co. bring forward a new and distinct Lettuce, named American Gathering, or Curled. This has the leaves peculiarly curled and crisped, and forms little or no heart. In Broccoli we have Suttons' Late Queen, and Veitch's Self-Protecting Autumn, both stated to be very excellent; and in addition Pottle's peculiar Cabbage Broccoli, which is capable of a two-fold use, first as a Cabbage, and then as a Broccoli. It is of excellent quality, and is said to be very hardy. By far the most notable in this class, however, is Dean's Early Snowball Cauliflower. This is the earliest of all Cauliflowers. It is of the Erfurt character, but distinct. Plants dwarf, heads small, solid, white, changing as they open to a purplish shade.

POTATOS.

For Potatos the past season was not by any means favourable; they suffered much from the disease, especially the earlier varieties. We have for some seasons been deluged with great numbers of new varieties from America of quite a distinct character, which, by their fine appearance and extraordinary cropping properties, seemed likely to drive our English varieties out of cultivation. The past season demonstrated the curious fact, however, that these American Potatos rapidly degenerate after importation to this country. Newly imported seed produce wonderful crops, but each successive season they become more and more inferior, both in quality and productiveness. Of this class Snowflake during the past season appeared to the best advantage. Carter's Breadfruit is very nearly allied to Bresee's Prolific, and

of Eureka it may safely be said that no worse Potato need be required. Of English varieties, Prince Arthur, from Messrs. Jackson, Kidderminster, is a promising one of the Victoria type. Grayson's Table King also claims attention as being a good form of the Regent class. Another Potato which has become somewhat famous on account of its fine handsome appearance at the great Potato exhibition, and its disputed individuality, is Porter's Excelsior. It is of the Early Handsworth class, and, like that variety, of poor quality; therefore, of no actual gain to the garden. Our chief Potato raiser, Mr. R. Fenn, although offering nothing new in commerce this season, has in his hands a number of superb seedlings, that promise fair to eclipse all his former sorts in reputation; many of them were exhibited at the late great International Potato Exhibition, and won golden honours for their fine appearance and the known good quality of all Mr. Fenn's productions. We look forward with much interest to a trial of these varieties, and for plenty of work in reporting during the coming season.

ONIONS.

In Onions we have gained some valuable information during the past season, thanks to the Fruit and Vegetable Committee of the Royal Horticultural Society. The greatest novelty to record is the Red Wethersfield, from America. This is a large and very fine variety. Williams' Magnum Bonum is a large and very fine selection of the Brown Globe, and the Banbury is the best type of the White Spanish. The New German of Veitch is a promising sort. The New Queen proved equal to its recommendations. It is a very small variety of the Silverskin section, forming bulbs almost as quickly as a Radish. It is excellent for salads or early pickling. There is no doubt but this is the same as the Early Nocera when it was first introduced, but which is now a much later sort. These very early Italian Onions have ever exhibited a tendency to lose their early character, &c., when grown in this country.

New Garden Plants.

KNIPHOFIA QUARTINIANA, *A. Rich., Flor. Abyss.* ii. 324.*

A native of the mountains of Abyssinia, at an altitude of 9000 feet above sea-level. Seeds were sent by Schimper to the Petersburg Botanical Garden, from some of which the plant from which my description is taken were raised by Herr Leichtlin at Baden Baden, where it has flowered this autumn for the first time. So far as I know, it is the only one of the Abyssinian Kniphofias that is in cultivation. The general habit is most like that of the Natal K. Rooperi, but the perianth and stamens are more like those of K. pumila. Twenty species of the genus are now known, and they are all very closely allied botanically. I strongly suspect that A. Richard's K. Quartiniana will turn out to be identical with the earlier named K. foliosa of Hochstetter, which was described from very imperfect specimens.

Leaves in a dense acaulescent rosette, lanceolate, 3—4 inches broad at the base, 1½—2 feet long, narrowed very gradually to the acuminate point, distinctly serrulate at the edge, thin but firm in texture, bright green, not at all glaucous. Scape terete, with a few scattered bracts, reaching a length of 3 feet and a thickness of half an inch. Raceme dense, half a foot long. Bracts scariose, ovate or oblong lanceolate, 3—4 lines long. Pedicels 1½—2 lines. Perianth 8—9 lines long, bright yellow without any red in these specimens, ¼ inch thick, not much constricted above the ovary, the teeth deltoid. Genitalia all exserted from an early stage, the three longer stamens at last protruded half an inch.

Herr Leichtlin writes of the plant as follows:—"The scape rises to a height of 3 feet, and the flowers are generally larger than in the specimen sent. One plant divides just above the soil, and sends up eight flower-scapes. All or most of my plants are beginning now (November 29) to flower. I think they ought to flower sooner, say in October, but they suffered from drought in July and August. One was blooming a short time ago, and then the upper part of the inflorescence had some red in it." *J. G. Baker.*

* *Kniphofia Quartiniana*, A. Rich., Fl. Abyss. ii. 324.—Acaulis; foliis viridibus 1½—2 pedalibus lanceolatis margine denticulatis e basi ad apicem sensim angustatis; scapo valido tripedali; racemo denso scripedali; bracteis 3—4 lin. longis scariosis oblongo lanceolatis; pedicellis deflexis bracteis duplo brevioribus; perianthio luteo cylindrico 8—9 lin longo; genitalibus omnibus longe exsertis.—Baker in Linn. Journ. xi 362; *K. foliosa*, Hochst. in Regensb. Flora, 1844, 30?

HOW TO DYE MOSSES, GRASSES, FLOWERS, &c.

IT may interest some of our readers to know how the Germans dye grasses, &c., in a great variety of unnatural colours; but we have our hopes that few people will follow them in the use of blue moss and other equally tasteless artificial productions. The following notes are from the *Neuste Erfahrungen und Erfindungen*.

To Dye Moss.—Green: Boil ½ lb. of alum in 4 quarts of water, and dissolve ½ lb. of finely triturated mineral blue in it, and a dark green dye is the result. Or a very beautiful green dye may be made with indigo-carmine and picric acid, adding water to reduce it to the desired hue. As picric acid is rarely to be had of uniform strength the exact proportions cannot be given. The same dye may be used for grasses.

Black: Two ounces of logwood in 1 quart of water, ¼ oz. of alum, and 3 oz. of copperas, the whole boiled together and the moss dipped into it while hot. Or two parts of logwood and one of Fleabane, thoroughly boiled together, and a little green vitriol.

Red: The best way to make this colour is to boil as much red aniline in rain-water as will produce a pretty red. The dye should be hot when the moss is dipped.

To Bleach and Dye Everlasting Flowers.—Bleaching: Put a number of flowers, which have previously been placed in a warm chamber to cause them to open, in a vessel containing a solution of chloride of lime, ½ oz. of soda, and 2 quarts of water. Cover the vessel and leave it as it is in a moderate temperature for four or five days. During this period the flowers first change to an orange colour and afterwards to a blueish white. As soon as these changes show themselves take the flowers out and pour off the fluid, and fill it up again, using this time only 1 oz. of chloride of lime and no soda. Let the flowers remain in this until quite white, subsequently drying them in a warm oven.

Dyeing.—Carmine: ¼ loth (about 2 drachms) of Munich lac, ¼ quint (about ½ drachm) ultramarine blue, dissolved in 12 loth (about 6 ounces) of warm water.—Rose: ¼ quint of extract of safflower, dissolved in 1 quart of cold water.—Dark blue: 1 loth indigo extract in a quart of water.—Cornflower blue: ½ loth blue aniline, 2 loth spirits of wine, in 1 quart of water.—Violet: ½ loth violet aniline, with the same proportions of water and spirit.—Light blue: ¼ loth Prussian blue, dissolved in a quart of water.—Dark blue: 1 loth of catechu, boiled in a quart of water.—Light green: ¼ loth picric acid, and ¼ quint of indigo in 20 loth of alcohol.—Black: as given above.—Orange: 3 loth of borax in 2 quarts of hot water, leaving the flowers to steep for some time.

The dyes for grasses, &c., are made in the same way.

To Preserve Asters.—Place a vessel containing muriatic acid and sulphur in a suitable air-tight box, and hang the Asters in it.

To Bronze or Gild Grasses, &c.—Take a solution of equal parts of oil of turpentine and copal lac, and immerse the grasses, such as Anthoxanthum, Briza, &c., and, before they are quite dry, strew them over with gold, silver, or copper bronze. All other colours for grasses are put on as follows: Dip the grasses in a very thin solution of gum arabic, and, when they are partially dry, lay on the colour with a soft pencil.

To Dye Asters, &c.—Take a pint of water and add an eighteenth part of sulphuric acid, and dip the newly cut flowers into it singly, afterwards hanging them up to dry in an airy, shady place, when they will assume a beautiful red colour. Zinnias, Pansies, Pelargoniums, Fuchsias, &c., may be dipped in a very thin gum and afterwards dried, care being taken that the leaves retain their natural position. Where the leaves happen to stick together they may easily be parted with a penknife.

THE POINSETTIA.

WE have received inquiries as to this plant since the publication of our figure in the last number, and which lead us to think that the following additional information may not be unwelcome to some. The epithet "double" is a complete misnomer. The term "double" is strictly applied only to those cases where petals are substituted for stamens and pistils, or where there is an unusual number of petals. Nothing of this kind occurs in the Poinsettia. What happens in the so-called double Poinsettia is this—instead of one row, comprising a relatively small number of coloured bracts, as in the ordinary form, we have here a crown of leaves as bright in colour as usual, but much more numerous, owing to the repeated branching of the flower-stem.

The original Poinsettia was discovered in Mexico by M. Poinsette, and came into the hands of Mr. Buist, of Philadelphia. Mr. McNab, the present Curator of the Royal Botanic Garden, Edinburgh, then in America, brought it thence to Edinburgh in 1834. The late Dr. Graham, Professor of Botany in the University, figured and described the plant in the *Botanical Magazine*, tab. 3493, from specimens which flowered in the garden. Shortly after it flowered with Dr. Neill, of Canonmills, near Edinburgh, and it rapidly assumed the popularity it now enjoys as a brilliant flowering winter shrub.

Whether the present variety will be as popular as the typical plant remains to be seen. Botanically speaking, Poinsettia is not distinguishable from a Spurge, Euphorbia, but the garden name will probably never be disturbed, and it is not to be desired that it should be. One inquirer asks if the bracts are to be considered part of the flower or not. This is a question not so simple as it seems at first sight. Structurally they are not parts of the flower, but physiologically they are important accessories to it, as it seems most probable that their purpose is to attract insects, and direct them to the nectar which exudes from the flower, and so ensure the setting of the seed. It would be interesting if some Mexican traveller could tell us what are the insects which visit the flower in that country.

THE CEYLON BOTANIC GARDEN.

EARLY on the morning of December 3, the Prince of Wales, with the Duke of Sutherland and some other members of his suite, drove out to visit the Botanic Garden at Peradenia, a distance of about 4 miles from Kandy. This garden, originally formed about forty-five years ago, has been of incalculable benefit to the island, and its beauty is on a par with its utility. Its director, Dr. Thwaites, is a botanist whose reputation is well known at home, and his *Enumeratio* is a most valuable contribution to the science. The garden, whose surface is beautifully diversified by natural undulations, covers an area of about 150 acres, and it is girdled on three sides by the broad flood of the swift-flowing Mahawelli-ganga, on the other side of which rise steep slopes covered with luxuriant verdure. As one walks through the grounds, beauty after beauty meets the eye in quick, bewildering succession. One is aroused from a trance of admiration for the lovely grace and towering grandeur of the group of Palms facing the entrance, to pass on to where the festoons of flowering creepers (Ipomœas and Bignonias) have so smothered and enveloped a symmetrically planted range of trees, that the effect is presented of a gigantic ruin clad so closely with verdure that its hoary stonework is invisible.

The Sensitive Plant, persistent in its obdurate shyness, folds its fronds and retires within itself at the lightest touch; you cut Cinnamon off the trunk of the living tree; you pull Cloves while as yet green; you may make a nosegay of the Camellia-like flowers of the Tea plant, and pull "Young Hyson" for yourself; you may slake your thirst from the beneficent Gourd of the Calabash tree; a scratch of your finger-nail will fetch the creamy caoutchouc juice from out the spreading snake-like root of the Indiarubber tree; you stroll into the damp shade underneath the dense tall foliage, and find there a fernery that is a dream of beauty. It is not to be wondered at that Dr. Thwaites, who is a cicerone above all praise, and whose eye glows and whose voice is tremulous with enthusiasm for the pursuit to which he has devoted his life, should have insisted, with correctness of taste which close contact with Nature in her most beauteous shapes always engenders, on having the garden unspoiled by artificial decoration for the Royal visit. What triumphal column that should not serve but as a foil to the slim grace and towering symmetry of the Palm trees? What arch could vie with the natural aisles of the Banyan tree of the Straits? What made festoons of flowers could compare with the trailing cables of green studded with blue blossoms of the Bignonias and Ipomœas? *Daily News.* [A portrait and memoir of Dr. Thwaites will be found in our columns for 1874, vol. i., p. 438, and a view in the garden at Peradenia at p. 439 of the same volume. EDS.]

AN OPEN-AIR ICE-HOUSE.

STACKING ice in the open air is a very inexpensive but, nevertheless, an effective way of preserving it for nine or ten months of the year, or even for a longer period; therefore a few remarks upon the *modus operandi* practised here may not be uninteresting to those of your readers who have not an "ice-house proper." Our plan is very simple indeed, and is as follows:—After we have filled our ice-house (which is a good one, and certainly not a very small one), we make two large stacks in a valley overhung with spreading trees (but not immediately over the stacks), the luxuriant foliage of which renders a shady and agreeable canopy to the stacks during the summer and early autumn months. At the bottom of the slope (a north-east one, and which is rather steep, thus affording ample drainage) we commence our stacks, and build "up hill" about 15 feet to the edge of the cart-way—which has been made for the occasion. There are some hurdles placed at the bottom, forming a kind of semicircle, to prevent the ice when "tipped up" at the top from going beyond its bounds at the bottom. The ice, the same as in the house, is well broken and rammed together, and boiling water applied as the work proceeds to consolidate it.

When the stack is headed, a man, with a ladder placed against it, spade in hand, commences at the top, and trims the whole stack right round to the bottom, thus filling all the crevices with the descending "ice dust," which is well beaten in as the operator progresses with his work. This done, the whole is covered with sifted sawdust 3 inches thick, then 2 feet thick of leaves, over which some long litter is placed to prevent the wind from blowing the leaves off; and, as a "finishing touch," the stacks, or ricks, are enclosed by hurdles which are fastened by tar string to stout sticks driven into the ground, by which means the cattle, &c., are kept away. I have seen many ways of preserving ice out-of-doors resorted to in England, Ireland, and Scotland, but never have I seen any to answer so admirably in every respect as the one above described; and so far as I am aware the plan (here at all events) was suggested by my noble employer. *H. W. Ward, Longford Castle Gardens, Salisbury.*

HOW TO GROW MISTLETO.

As there has been some discussion in your columns lately about the growth of Mistleto in Scotland, I may state that I propagated it pretty freely on the Mountain Ash some years ago for the late Mr. James Cunningham, of Comely Bank Nursery, Edinburgh, who used to take my stock of it every year from 1838 to 1847. My practice was to net the berries, and preserve them from the birds until they were fully ripe, about Easter. I then sowed them pretty thickly on the bark of young Mountain Ash stems, about 2 feet from the ground, that being the most convenient height for my customer. By sticking on plenty of berries I could insure some of them taking on nearly every tree I manipulated. The first year the berries shot their radicles, generally two in number, and pressed them close to the bark, to which they adhered. The second year each plumule separated from the berry, and became with its radicle a distinct plant. Thus, if they both succeeded (which is very uncertain), each berry would produce twins, but whether of the same or opposite sexes I could never ascertain. Early in the following spring they were taken up, packed, and sent to my friend, in commercial exchange for some of his novelties, and through him some hundreds must have been distributed through Scotland.

Such was my commercial experience with the plant, but I took a much deeper interest in it than that. I had several large growths of it, both male and female, on my Apple trees, which produced me plenty of berries, but I thought they looked very ugly, these crow-nestlike patches. Could it not be grown in a more ornamental manner? Why not have them equally all over a handsome tree, in fact a Mistleto tree? With this idea in view I fixed on a tree of the Yorkshire Greening Apple, which is a very horizontal-growing kind, and forms naturally a flat, wide-spreading cone, in fact the head of the tree is just the shape of the Apple it bears—a very broad-based cone; and here I may remark that I have always observed that the shape of the fruit corresponds with tolerable certainty to the natural form of the tree, whether flat-coned, upright-coned, circular, or any other form—arising, no doubt, from a corresponding cellular growth action throughout every part. The Mistleto is certainly, with its round fruit and spherical head, no exception to this rule. The May Duke and Morello Cherries make round-headed trees, while the Blackheart forms a cone; so with Apples, Pears, or any other fruit.

Having selected my tree, I devoted one fine April afternoon to putting on the Mistleto berries. For this purpose I had my stock ready gathered, about half a gallon in a pan; I then with a stout stick stirred them all up into the consistency of jam, and taking up two handfuls at a time I drew every branch through and through my hands until I left the seeds sticking within 2 or 3 inches of each other to the very points. This took me the whole afternoon, and it was hard work. The seeds took well, and in five years' time I had a noble tree; and when the Apple blossoms were fully out in the spring, it was an exceedingly beautiful object. Imagine an evergreen cone 20 feet in diameter, and between 7 and 8 feet in height from the base to the apex, on a 5-feet stem, full of its large white, rose-tipped blossoms. Alas! beauty is often transient, and that was the last year of my tree, for I received notice from the North Kent Railway Company that it stood within their projected line, and in the following autumn it was broken down to make way for the steam-horse.

Such an object on a gentleman's lawn or park would be invaluable, and might easily be established on some of the ornamental Thorns or Crabs we sometimes see there. Not that I think they would last many years, but a succession might be kept up by planting young trees. I should think the Pyrus spectabilis would be a good stock for it. If thoroughly done and attended to, taking care to trim-in any extra strong growths, so as to have no crow-nests, handsome trees might soon be obtained. *John Hully, Turner Road, Lee, S.E.*

THE CULTURE OF THE MOREL.

THE flavour of the Morel, so peculiar and delicious, as well as its very singular appearance, cause it to be highly appreciated by all who take interest in the curiosities of the kitchen. Dried or preserved Morels are better than none, but fresh Morels are the best of all. Whether dry or fresh they are neither common nor cheap, though sometimes temporarily abundant in certain localities; whence it happens that they are given away as often as sold, and are procurable for love rather than for money.

Could they be cultivated like the Mushroom it would be a great boon to many an epicure—by which term is merely meant a person who has the common sense to prefer good things to bad ones, and the courage to avow it. But is the Morel cultivable? Some say it is, others aver that the experiments made have not given satisfactory results. Meanwhile, as no inherent impossibility appears to forbid the accomplishment of the feat experimentalists might make further trials, and, to encourage them, we quote from the second *Bulletin de la Société d'Horticulture de l'Arrondissement de Meaux* (p. 7, 1874), an article by M. Simar recording what looks like a successful attempt.

"I brought," he says, "to the meeting of January 1872 a pot of Arum garnished with large Morels, and I had them in like manner on almost all my pots. After long searching I came to suspect that it proceeded from the composition of the earth which I used for potting; nevertheless I could not be positively certain of it. At the beginning of the autumn of 1873 I made a composition of earths analogous to that which I had made in 1872, and obtained exactly the same results. I am now, therefore, assured of the culture of the Morel, and that it can be effected with much greater economy and less trouble than the culture of the Mushroom.

"My earth for the purpose is thus composed:—1. One quarter of two-year-old tan, well rotted. 2. One quarter of heath mould or leaf mould. 3. One quarter of ordinary vegetable mould. 4. One quarter of fresh loam (*terre franche*)."

The present writer ventures to suggest that, as there are now five quarters of the world, a fifth may be added to the above list of ingredients, namely, 5. One quarter of mould from some spot where the Morel is known to thrive. Mr. Worthington G. Smith knows a wood in Bedfordshire, called "Morel Wood," where in spring this rare and delicious fungus abounds. Persoon (in Badham) remarks that, though the Morel rarely appears in a sandy soil, preparing a calcareous or argillaceous ground, it frequently springs up on sites where charcoal has been burnt, or where cinders have been thrown. The writer knows a wood on sandy soil, which produces a good crop of fine Morels in spring; he has also found it on a hedge-bank of arable loam. All which would lead one to suppose that the growth of Morells depends less on the quality of the soil than on the presence in it of Morell spores or mycelium.

M. Simar further directs—carefully mix the whole together. When the composition, as directed, is made you refill your pots with this fresh compost. At the beginning of October you make a bed of fresh tan (in the state it comes from the tanner's hand) 6 or 7 inches deep, the fresher the tan the better. In this you set the pots as close together as possible, and let them remain without touching them; in three weeks or a month you will find mycelium (*du blanc*) on the surface of each pot, about three weeks afterwards it disappears. There is no occasion to be alarmed, for five weeks after its disappearance you will find on all your pots hundreds of Morels of the size of pins' heads; you have then only to give frequent sprinklings with soft water. The most suitable temperature is 47° Fahr. at the beginning of the culture and 50° towards the close.

In this way the Morel can be cultivated without any great expenditure either of cash or of trouble. *E. S. D.*

THE COMMON HOLLY AND ITS VARIETIES.—VIII.

P. LEAVES SILVER-VARIEGATED.

§§ Spines few, wanting, or inconstant.

† Leaves silver-edged.

‡ Leaves large, 2½—3 inches long.

80. I. A. LAURIFOLIA ALBO-MARGINATA.—This handsomely-marked Holly was received from Ochtertyre, where it forms a tree 30 feet high. It is one of the green-barked series, and is said to be a male or sterile (not berry-bearing) variety. The leaves are elliptic, with a slight obliquity, sharply acuminate, and either spineless or with one or two aberrant spines near the tip, where, quite as an exception, as many as four spines are occasionally developed. We are informed that it was sent out about 1869 by Messrs. Lawson under the above name, previous to which the tree at Ochtertyre was supposed to be unique. The leaves have a broad, but irregular border of white.

‡‡ Leaves medium-sized, about 2 inches long.

87. I. A. SULPHUREA, Fisher.—This variety has purplish bark, and the leaves vary from 2 to 2½ inches long and 1 to 1½ inch broad; they are oblong acute, and are either spineless or produce a few spines in the plane of the frond. The disk is mottled with green and grey, and they have a broad creamy white margin.

‡‡‡ Leaves small.

88. I. A. SCOTICA ALBO-MARGINATA, Waterer.—This is a sport from scotica, which it resembles in all respects, except that the leaves have an even border of creamy white, of moderate width. It appears to be a slow-growing sort. The bark is purple.

†† Leaves silver-blotched.

89. I. A. ARGENTEA PICTA, Fisher. — A well-marked variety, with green bark. The leaves are ovate, 2 inches long, entire or with a few spreading aberrant spines. The disk has a feathered blotch of creamy white, becoming paler in age, and is also marked with patches of yellowish green, with an irregular border of dark green.

90. I. A. LACTEA PICTA: Upright Milkmaid, Waterer. This Holly somewhat resembles the last in its foliage, but its bark is of a reddish-brown hue—a feature which, so far as our observation has extended, is fairly distinctive amongst the varieties of this valuable hardy shrub. In the present sort the leaves are about 2½ inches long, and either ovate and entire, or elliptic and slightly spiny, the spines being quite erratic in position. The ground colour of the leaf is a deep green, and this is marked by an irregular central blotch of creamy white, which becomes pale green if it reaches the edge. Like other blotched sorts, it is apt to run out unless it is watched, and the green shoots cut out as soon as they appear.

§§ Spines superficial and marginal.

91. I. A. FEROX ARGENTEA, Fisher, Lawson, W. Paul, Smith; ferox argentea variegata, Barron;

Silver-striped Hedgehog, Waterer (fig. 9). This well-known and strikingly handsome Holly has the bark of a deep purple colour. The leaves are ovate, more or less strongly convex, of a deep green, the disk green towards the base, but towards the front and edges bristling with stiff echinate spines, whence it obtains the name of Hedgehog. The margin is also strongly wavy-spined, but, being turned under, these spines are less seen than in the ordinary varieties. The margin and the surface spines are of a creamy white, the prominent white surface spines rendering the plant very conspicuous at a distance. It differs from the Golden Hedgehog in being a marginate instead of blotched variety.

C. LEAVES GOLD-VARIEGATED.

§ Spines marginal, numerous, strongly developed.
* Spines divaricate—*i.e.*, variously directed.
† Leaves gold-edged.
‡ Leaves large, 2½—3 inches long.

92. I. A. AUREA REGINA; Golden Queen, Waterer, Fisher, Kinmont & Co.; reginæ, Lawson; latifolia marginata, Barron; aurea marginata, Lee (fig. 8).—A grand Holly, and decidedly the finest of all the gold-edged series. The bark of the young wood is green, and the leaves are broadly ovate, 2½ to 3 inches long, and 1½ to 2 inches broad, with very strong spreading and variously-directed spines. The disk is usually much mottled with grey and green, often in nearly equal proportions, and there is a broad, well-defined, continuous margin of deep golden-yellow. It is a free-growing but sterile variety. The tree at

FIG. 6.—I. A. AUREA ANGUSTIFOLIA.

Ochtertyre is 20 feet high. The tendency to variegation is so strongly marked on this beautiful plant that it is not uncommon, notwithstanding its robust habit of growth, to find leaves which, either on one side the midrib or on both, are entirely gold-coloured. No selection of Hollies should be without this.

93. I. A. AUREA REGINA NIGRA.—Under this name we have received from Ochtertyre, where the tree is 15 feet high, a variety bearing considerable resemblance to the true Golden Queen, but having purple bark; it is also grown in Messrs. Dickson & Turnbull's nursery. The leaves are large, fully 3 inches long, and nearly 2 inches broad, ovate oblong, with very strongly developed divaricate spines. The disk is dark green blotched with grey-green; and the margin, which is yellow, is irregular, usually narrowish, and in some parts scarcely developed, the green colour extending to the spines. It is said to fruit very sparingly.

94. I. A. AUREA REGINA PENDULA, Lawson (fig. 7). — A fine golden weeping Holly, which appears to be distinct in the irregular toothing of its leaves from I. A. aurea pendula. The bark is purplish, and the leaves oblong-ovate, 2¾ inches long, by 1½ inch broad, the disk conspicuously blotched with dark and yellowish green, and the strongly-spined wavy margin of a deep yellow, The spines are mostly large, and in many instances set at very unequal distances, though not always so much so as the annexed figure represents. It is a vigorous growing sort.

95. I. A. AUREA PENDULA: Gold Weeping, Waterer; pendula aurea marginata, Lee; pendula aureo-marginata, Barron.—A fine variety, of pendulous habit, belonging to the purple-barked series. The leaves are about 2½ inches long, ovate or oblong-ovate, very strongly divaricate, the spines being stout, tolerably equal in size, and set at moderate distances. The disk is very much mottled with grey-green on a dark green ground, and the yellow margin, though irregular, is well-marked, and

FIG. 7.—I. A. AUREA REGINA PENDULA.

broadish, sometimes extending half way across the leaf.

96. I. A. AUREA MARGINATA, W. Paul, Lawson, Lee, Kinmont & Co.; marginata aurea, Fisher.—Though not equal in the beauty of its leaves to the true Golden Queen, this Holly forms a very fine specimen tree when standing alone, a plant at Ochtertyre being reported as 20 feet high. The bark in the majority of the samples quoted above is green. The leaves are large, 3 inches long by 1½ inch broad, oblong ovate, the centre or discal portion of a dark green with mottlings of grey-green, and the golden edge being narrowish and unequal, most developed towards the tip. The spines are stout, much divaricate, and usually set at very unequal distances. The growth of this variety is moderate, and it is said to fruit but sparingly.

97. I. A. AUREA MARGINATA ROTUNDIFOLIA, Lee; rigida aurea marginata, Lawson; Boskoop, Waterer.—A fine and distinct Holly, with the young bark purplish. The leaves are 2 to 3 inches long, and 1¾ inch broad, broadly or roundish ovate, the margins regularly spined and moderately wavy, less divaricate

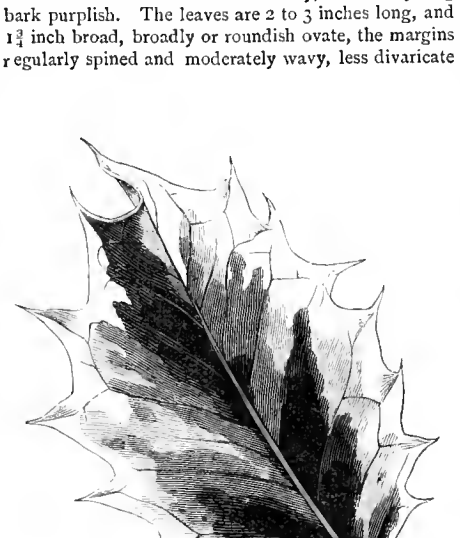

FIG. 8.—I. A. AUREA REGINA.

than in the preceding golden-edged sorts. The broad green centre is occasionally splashed with grey, and the margin is a clear pale yellow, but irregular and not continuous. It is noted as a good grower.

98. I. A. BICOLOR, Fisher.—A green-barked sort, which the aurea muricata of Fisher's collection appears to approach rather closely. The leaves are oblong-ovate with an acuminate apex, 2¼ inches long and about 1¼ inch broad, rather distantly spined, the spines moderately wavy, occasionally with spineless intervals; they have a dark mottly green centre, with a broadish but irregular yellowish edge.

99. I. A. AUREA ANGUSTIFOLIA, Fisher; angustifolia aurea marginata, Lee (fig. 6). — This is a well-marked Holly, with a purplish-red bark (or in one specimen, apparently the same, green). The leaves are elliptic-oblong, acuminate, 1½ to 2¼ inches long, and scarcely an inch in breadth, with a spiny edge, which is but moderately wavy; the centre is strongly marked with pale green, and the narrow but even margin is of a deep gold colour. We have what appears to be the same, but without name, from Mr. Waterer's collection.

100. I. A. AUREA LATIFOLIA, Smith; Black-barked Gold-striped, Waterer.—A distinct form, with purple bark on the young wood. The leaves are ovate, 2 to 2½ inches long, strongly divaricate, and with well-developed spines. The disk is splashed with pale green, and there is a narrow, but irregular deep golden edge.

101. I. A. AUREA MURICATA, Fisher; aureo-picta, Smith.—A green-barked form, with ovate leaves, 2½ inches long, moderately wavy and spiny, the disk mottled and flaked with dark and greyish green, and with a broadish, but unequal edge of yellow.

102. I. A. JACKMANNI; Jackman's, Waterer.—

FIG. 9.—I. A. FEROX ARGENTEA.

A variety with purple bark, and elliptic-ovate leaves, upwards of 2 inches long, which are spiny at the edge, with the spines divaricate. They have a pale green blotched centre, and a comparatively broad yellow margin—not so broad, however, as in Golden Queen, nor is the green of the disk so dark and well-contrasted.

103. I. A. AUREA MARGINATA FRUCTU-LUTEO; fructu-luteo aurea variegata, Lawson; Yellow-berried Variegated, Fisher; Gold-striped Yellow-berried, Waterer.—This is a green-barked variety. The leaves are bold, ovate, 2½ inches long, coarsely and rather distantly spined, the spines strongly divaricate. The colour of the disk is green, blotched with grey, and the edge is greenish yellow, or yellow broken with green, not remarkable for clearness or distinctness of marking. Indeed, apart from its very distinct yellow fruit, it is, as a variegated shrub, not by any means an attractive sort. *T. Moore.*

NUT TREES FOR PLEASURE AND PROFIT.

IT appears strange that in the laying-out of parks and pleasure grounds Nut trees are so seldom introduced. By Nut trees I mean it to be understood that I allude to edible Nuts only, such as the Walnut, the Sweet Chestnut, and the Filbert in its numerous varieties: these are certainly to be found in many parts of England, but they are, as a rule, chance specimens, thinly scattered and generally old established trees. In newly laid out parks and plantations these trebly useful trees seem to be almost forgotten; their less rapid growth may account for this, but those who plant, not only for present enjoyment, but to benefit posterity, would do well to consider what a high claim our Nut trees have to a place in every

park and pleasure ground, not only on account of their beauty as ornamental subjects, but also for the store of food they annually bring forth and for their timber when they have attained to maturity, and it becomes necessary from one cause or another to cut them down.

Leaving on one side for the present the claims of the Walnut and Chestnut, I will consider the utility of the Filbert as a fruit-bearing as well as an ornamental plant.

The county of Kent has so long been associated with the growth of the various sorts of Filberts on the most extensive scale, that all, save professional gardeners, are apt to imagine that it will not flourish in other soils and climates. This is an unfortunate mistake, for it has resulted in many hundreds of acres lying waste which might have been profitably employed by the extensive planting of Filbert trees, and in a great loss of one of the most highly-esteemed luxuries of our winter dessert, even if it may not be generally considered, though we believe it is, a necessary and nutritious article of food.

As marketable commodities, Filberts, Cob Filberts, and even common Hazel Nuts are of excellent value; they command a good and steady sale even during the most abundant seasons; and, should the market price at such time as they are ripe for gathering not be deemed sufficiently remunerative, the crop can be stored and held over until there is a favourable rise in the market. The only drawback to the extensive cultivation of the Filbert is the time necessary for the plant to mature and bear a sufficiently heavy crop to make a good return for the outlay of capital, but this would be of small account to those who plant for ornamental purposes, not pecuniary profit, although this would assuredly follow in due course—a desideratum not likely to be despised even by the most wealthy proprietor.

In planting either for use or ornament it should always be borne in mind that the very best variety of tree, although dearer, is in the end the most remunerative; this rule applies forcibly not only to Nut trees, but to every plant in the vegetable kingdom. Therefore the best Cob Filberts, or, as we have been accustomed to call them, Kentish Cob Nuts, should alone be planted; these and the ordinary Filbert would be sufficient, leaving for distant copses and covers the pretty but less remunerative Hazel.

As a connecting link between the ornamental grounds and the kitchen garden, Filberts are extremely useful; we have seen them used with good effect at Hale Hall, Lancashire, where there is an old avenue of these trees forming a densely shaded walk during summer, quite impervious to the scorching rays of the sun; a charming retreat in autumn, when the crop of Nuts hangs on the trees, and the dying foliage is brilliant with many tints of gold and green, and almost as beautiful even in winter, when the interlacing branches, bare of leaves, form a Gothic arch against the clear wintry sky, and every spray is marked with a delicate but distinct tracery of hoar-frost.

Where Filbert trees are to be planted merely for profit, we have the authority of Mr. Webb, of Calcot, Reading, for stating that they will in seven years return more than cent. per cent., and, as they will grow in any soil, it is to be regretted that at least some portion of the waste lands of Great Britain are not utilised for their cultivation.

In Wales there are hundreds of acres of hillsides and of land bordering mountain streams where the wild Hazel flourishes to luxuriance, and where the Filbert would, as a matter of course, thrive.

To persons of small capital, in a position to buy a few acres of land perhaps, no investment of their money and their labour could be more profitable than that of Filbert growing. Unlike the run of market-garden crops, the first is almost the only expense, the annual digging of the ground around the trees and the gathering of the Nuts involving the greatest yearly outlay; manure is but a small item, one good dressing in six or seven years being sufficient. There are but few seasons when good Filberts are retailed at less than 1*s*. a pound, generally they are much dearer.

Supposing each tree in a plantation of Filberts to produce but one shilling's worth of Nuts, the return upon each acre of land would, at this low figure, be £32 per annum, but as one tree alone has been known to yield 110 lb. of Cob Filberts at one gathering it may reasonably be anticipated that the profit would be considerably greater. *T. S. Y.*

BRITISH GARDENERS.—XXXIII.

GEORGE SAGE.

FOR some years past the kitchen-garden at Ashridge Park, the seat of Earl Brownlow, which has been under the care of Mr. George Sage, has been renowned for the skill with which it is managed—the flower-garden department being equally well sustained in other hands. It is indeed quite a treat at any time during the active season to run through this garden, and to note the high culture to which the various crops bear witness, and whether it be quarters of Celery, Beetroot, Onions, French Beans, Cabbages, or Cauliflowers, it is a great chance if the whole plot of each is not filled with plants which appear all to have been cast in one mould—so true and even are they in development. As an exhibitor of Grapes, too, Mr. Sage often puts in an appearance, and gains an honourable position in the prize list. The various forcing departments at Ashridge—from Pines and Musas, to Mushrooms and Tomatos—bear the same evidence of being skilfully handled. The growth of nuts, again, is a feature in which Mr. Sage excels, the produce from his moderate-sized, carefully-pruned bushes being something remarkable. The garden at Ashridge is not one of the best adapted to secure successful results, but in almost every department may be seen at any moment the evidences of success, notwithstanding the adverse conditions which have to be met and surmounted.

We have much pleasure in now submitting Mr. Sage's portrait to our readers, with the following autobiographical memoranda:—

"I was born in the year 1824, at Hillingdon in Middlesex. My father was then gardener to Lady Hazlerigg at Hillingdon Heath, a small place, which he held for twenty-eight years. At the age of thirteen I commenced to work with him, and at the end of three years, wishing to make a change, I went into the gardens at Belmont, Uxbridge Common, then in the occupation of Mr. Richard Fell, where I remained about five years.

"I was next recommended as gardener to Mr. Smith, of the firm of Hall & Smith, bankers, at Uxbridge, but soon after entering this situation I began to think that, unless I could gain more experience, the scope of my practice must be limited. My father being acquainted with Mr. Mills, we consulted him on the subject, with the result that I was taken into the gardens at Gunnersbury Park, where I had some good practice in the different departments. The Pines were at that time chiefly grown in pits, heated by dung linings, and the custom was to turn a portion every morning, so that the whole was moved once a fortnight. Although it is now twenty-five years since, I have not forgotten the part I took with another in getting through that work, as some of the pits were badly drained, and sometimes we had to bale out sixty large cans of water in one morning. Pines, Cucumbers, and Mushrooms, were well grown at Gunnersbury.

"My next change was to Chatsworth, the seat of his Grace the Duke of Devonshire, where I entered the garden in March, 1849, through the recommendation of Mr. Mills. Here for the first two years I was under Mr. Eyles, amongst the Orchids and stove plants; and after that I got a change to the forcing department under the late Mr. Andrew Stewart, and remained with him about the same length of time.

"In April, 1853, I left Chatsworth to go as foreman to Mr. Eyles at the Crystal Palace. For the first three months I was engaged at Messrs. Loddiges' nursery cleaning and preparing the plants for removal to the Palace, the whole collection having been bought for the Crystal Palace Company. I then went to the Palace, and was engaged under the directions of Mr. Eyles in the formation of the borders for the reception of the plants, in planting, &c.

"I obtained my present situation, which I entered on January 2, 1858, through the interest of Sir Joseph Paxton, and for eight years had charge of both departments, namely, the flower garden, and the kitchen and forcing garden departments. It was after that time thought desirable to separate these two departments, as they are situate at some considerable distance from each other, and the latter fell to my lot. In reference to my success as an exhibitor, I may mention that I have taken the gold medal of the Royal Botanic Society, and I may perhaps claim to have been tolerably successful in a general way."

PICEA PARSONSIANA.

IN the September number of the *Gardeners' Monthly* I noticed some remarks of E. Manning on the beauty of our Picea Parsonsiana and his doubt whether it is a variety of P. grandis. The seed from which this variety was grown was received without name from California in the spring of 1853. In the autumn of 1855 Stuart Low, then in this country, bought all the young plants which we were willing to spare. A plant was also sent to Kew Gardens and to Mr. Barron, at Elvaston Castle.

Some years after our plant was introduced, seed was received in England, the trees from which I saw in the spring of 1859 in the grounds of Waterer and Godfrey. These I recognised at once as our Picea, although they had given it the name of lasiocarpa. We then wrote to Mr. Barron, whose opinion of Conifers ranked high, and who was always supposed to speak *ex cathedra*. He wrote us that the true lasiocarpa was totally different from the plants of Waterer and Godfrey, that their plants were wrongly named, that our Picea was undoubtedly a new species unlike anything known in England in 1855, and that he should adhere to his nomenclature given at that time, which was Picea Parsonsiana. On examining our own plants, as well as those of Waterer and Godfrey, we found that the species sported very much, and produced trees widely differing, but having a predominance of straight leaves. Finding among our own stock a variety which we did not find in England, with curling leaves, symmetrical form and a remarkable Fern-like aspect, we concluded to propagate that only, and let the straight leaved plants go. This curled form can be perpetuated only by grafting. From seed it sports as much as the Norway Spruce, and the curled variety cannot be so obtained with certainty. This variety having been cultivated as lasiocarpa by Waterer and Godfrey, was distributed by them, and from this distribution came to us, without our knowledge of its source, the plant which Mr. Manning received under that name.

Mr. Bolander, formerly botanist of the California State Survey, on a recent visit to our grounds, examined our plants and stated that they were all grandis, that the straight or flat leaf was the coast form, and the curled leaved variety, or our P. Parsonsiana, was the mountain form. Mr. Fowler, of Castle Kennedy, writing in the *Gardeners' Chronicle*, says that the P. Lowii, which he makes a synonym of Parsonsiana and lasiocarpa, was discovered by Wm. Lobb in California, and seed sent home in 1860. If therefore Lowii and Parsonsiana are identical, and if our plants were sent to Mr. Low in 1855, and this seed from California came in 1860, it is clear that we are entitled to the name, however unwilling we may be to interfere with the rights of Mr. Low, for whose personal character and enterprise we have the highest respect.

Be that as it may, the tree remains, and no description can do justice to its beauty. It is worthy of admiration at all seasons; but in June, when the new growth is crowned upon the old, when the delicate light steel-green of the new shoot is contrasted with the rich darkness of the old, and the leaves curl up over the branches till they almost meet, it is especially beautiful. My finest specimen near my house succumbed to the frosty pestilence of 1872. Lovers of trees would sit upon my piazza and, fascinated by its charms, gaze upon it as a connoisseur devours with his eyes a beautiful picture. Of all the disasters of that disastrous spring, none were more felt than the loss of this charming specimen. *S. E. Parsons, in the American "Gardeners' Monthly."*

Florists' Flowers.

DRESSING CARNATIONS AND PICOTEES.—I am greatly disappointed with "D.," of Deal. From his expressed deference for the late Rev. George Jeans, I had hoped he would much profit by the perusal of Mr. Jeans' paper on this subject; but instead of this he only perverts it. Then he assumes fallacies for facts, even more broadly than at the first, and completely caricatures and misrepresents the practice and effects of "dressing."

I shall proceed to demonstrate these assertions *seriatim*, and then, as the columns of a weekly paper are scarcely a convenient vehicle for the discussion of abstract principles, my part in this matter (so far as "D.," of Deal is concerned) will cease.

By the courtesy of the editor of the *Florist*, I hope to offer to its readers a monthly paper on the Carnation and Picotee, and, at the fitting time, a chapter on "dressing." To that chapter I must beg to refer any one who may be desirous of ascertaining the principles on which the practice is founded.

1. As to "D.'s" perversion of Mr. Jeans. Mr. Jeans, in the paper to which I referred "D.," and which was a reply to some strictures on the practice of "dressing flowers," by Philip Havapek (a *nom de plume* assumed for the nonce by the late Mr. Edward Beck), expressly states that in the nonage of his floricultural life he held opinions somewhat similar to those expressed by "P. H."—viz., that there was something very "unnatural in the practice, and calculated to deceive the public, as establishing a deceptive difference between flowers as grown and flowers as shown." "But," he says, "as I have since considerably modified my opinion, and become reconciled to the practice, it is fair to ask whether I can give a sufficient reason for having done so, and this I will try to do." And this Mr. Jeans does, in a chain of incontrovertible argument—sufficient, I should have said, but for "D.'s" avowal, to carry conviction to any one. It completely convinced Mr. Beck. "D." says of this paper, "I have looked at it, and find it was written in answer to some such remarks as I have made, and that he said he had maintained (? held) the same views, but had seen fit to modify them, so that very able florists for years held the same views which Mr. Dodwell attributes to ignorance."

Until "D." can show that ability is the concomitant of inexperience, and ripe judgment of lack of knowledge, I shall hold that "D." has perverted Mr. Jeans. I suppose also the "deference" which "D." in your issue of Dec. 25 informs us he was ready to pay to the name of Mr. Jeans, is not to be attributed to the utterances of his ripened experience and long-trained judgment, but to some crude imaginings unexpressed?

2. His fallacies for facts. "D." assumes that I write from a northern point of view, he from the southern, as if a principle could be altered by the points of the compass. "D." may not know, and it is not necessary he should, that I am a southern born and a southern bred florist; but it is scarcely pardonable that he, who professes a thirty years' acquaintance with floriculture, should not know that for years in my earlier efforts to advance the progress of opinion as to the Carnation and Picotee, I was denounced as a "southern innovator" by a certain section of northern florists, who made up in intensity of feeling what they lacked in intelligence. Fortunately I was upheld by, and am grateful to believe made many fast friends amongst, the best cultivators and best intellects of the North—far, indeed, beyond my deserts. And as to "D.'s" assumption, "that a very different style of flower is favoured by growers of Picotees and Carnations (I exclude Pinks) in the two divisions," that illusion of his would have been blown to the winds had he been present at the "trial exhibitions" at Slough and Derby in 1850. For years I attended exhibitions, and saw the best collections both North and South respectively, and the same flowers won, the same style of showing obtained, and the same rules and practices were observed at all even pretending to position. Of course I do not say all exhibited equal intelligence; there were winners of 3d prizes then as now, and idiosyncrasies were not unknown.

"D." says, "surely with such flowers as Mrs. Fordham and others" (rather indefinite that "others"), "Mr. Dodwell can hardly say we have not fuller flowers than we used to have." Well, it is most unfortunate that "D." should ask this question in public, because, if space permitted, I could give him, not one, but the names of a score of fuller flowers popular twenty-five years ago. Two will suffice, and from the same class, scarlet-edged, with Mrs. Fordham—Green's Queen Victoria and Willmer's Princess Royal, both of which were to be found in almost every leading exhibition at that period. There were many good flowers at that time so full that for the purpose of exhibition the side blooms only could be used, whilst, according to information which I get from Mr. Turner, only three varieties, all Carnations, are now in that category, viz., Guardsman, S.B.; Mr. Hextall, R.F., both varieties of Mr. Turner's; and Puxley's Princess Royal, R.F.

3. "D." says: "I said it seemed to me a very curious thing that while you may pluck out any number of petals in a Carnation or Picotee without its being disqualified, yet that to gouge out the eye of the Dahlia was regarded as utterly dishonest, and so I say still." Well, it would be "very curious" indeed if "any number of petals" might be plucked from the flower of a Carnation and Picotee "without its being disqualified;" but this is precisely the thing that does not happen.

It is a singular commentary on this very curious assumption of "D.'s," that he says in his last letter to the *Journal of Horticulture*, "I should very much like Mr. Horner to tell us the meaning of the rule that, if a flower be mutilated, the stand is disqualified." I beg to be allowed to say to "D.," and also to your readers, that nothing that is not allowable in the Dahlia may be practised on the Carnation or Picotee.

"D." is especially unhappy in his closing paragraph. He admits, if going before his bishop he would desire to present a becoming appearance. But he says, "I should not feel inclined to pull out half the few hairs I have left, shave my head, and turn my coat inside out," a process he is pleased to think "analogous to the dressing of a Carnation or Picotee." Nor would the "Bond Street artist" prescribe such a course, unless in his trepidation "D." had first put on his coat the wrong way; and instead of pulling out half the few hairs left, he would so dispose of them as should give the greatest dignity and expression to his appearance—and this is just the work the judicious dresser might do for the flower.

If "D." thinks I have been severe in the above remarks, or in those of my former letter, he must attribute it to the position he occupies as a writer on floriculture. An unknown man may preach heterodox doctrine, possibly without evil; but from a writer of mark like "D.," if uncorrected, it cannot but be calamitous. On this subject he has certainly held forth without a sufficient examination of its bases, or a competent knowledge of its surroundings, *E. S. Dodwell, 11, Chatham Terrace, Larkhall Rise, Clapham, S.W., Jan. 1.*

Natural History.

TOADS.—I am pleased to read in the *Gardeners' Chronicle* that there are some people who care for the creeping things on the face of the earth. How often do we see people tread and abuse the poor toad, and as a rule many people are really timid and frightened at the sight of a toad, especially among the female sex. I have invariably asked ladies which of the two, toads or frogs, they liked best. The reply was generally frogs, but not so with me—toads are my favourites; I often pick them up and carry them into the glass structures. I was in company with a few friends not long ago, and toads came up in the course of conversation. I had with great difficulty tried to convince one of my friends about my experience with toads for the past ten years. At all events, I began telling him how I fed my pets, and I had several monsters as large as his fists I told him; they were in a warm bed and scarcely visible, and I had names for them—Jim, Dick, &c.—and if he would come with me he would see them come out of their beds when I called them.

I brought him into a Cucumber house, and in a minute they appeared. I told him to take his rule out of his pocket, which he did, and we put a spider on the end of it, when he was half frightened at the smack Jim gave, to his great astonishment. He wanted to know how he caught it, but on replenishing his rule with another spider, Dick came up and, with a bow and a nod of his head, he found Dick caught it with his tongue, and, his throat moving, it was soon demolished. I must add that the spider is one of the toad's most dainty dishes; often and often have we amused ourselves since by taking in a few spiders to feed our pets. *H. Russell, Preston Gardens, Basingstoke, Hants.*

SQUIRREL CATCHING.—Snaring of squirrels can only be done in woods that are forty or fifty years of age, where the trees stand about 15 feet apart from each other. Fir woods are the best for this purpose, because the squirrel thinks itself hidden behind the evergreen leaves. The catching of them is regularly followed as a trade in Windsor Forest, to procure them for pets, for the mining and manufacturing districts of England, where they command a ready sale. It is done by two people acting together; one throws stones for a few minutes at the squirrel, which, after leaping from one tree over three or four, betakes himself to the top of one of the Firs, puts his back against the stem, and keeps his eye steadily fixed on the person who has been throwing the stones. The stone-thrower then stands perfectly still staring at the squirrel, who pays no attention to the confederate; he, with climbing-irons upon his legs, which grip the stem, rapidly ascends the tree immediately behind the squirrel.

The climber draws up after him a thin wand about fifteen feet long, at the end of which there is a piece of string, and at the end of the string a small noose of fine wire, having a knot upon it to prevent its slipping too tight. When the climber has ascended far enough to reach the squirrel, he puts out the long wand, and places the noose in front of the squirrel's head. Immediately the noose is in the right position, a noise is made, and the squirrel ceases to pay attention to the person upon the ground, jumps forward, and is caught. Two expert hands never fail to secure them, and it is great amusement for boys to attempt it, although they seldom succeed. Winter is the best time for this sport; it is cruelty to capture them in the summer, as the young ones die of starvation. *"Forest Trees and Woodland Scenery as Described in Ancient and Modern Poets," by William Menzies.*

THE PEACOCK BUTTERFLY.—Two months since I found one of these beautiful insects inside of my bedroom window. Wishing to see how long it might be made to exist under more favourable auspices, I placed it under a small glass shade, beneath which are also a few dried blooms of the Helichrysum. This stands on a mantelshelf, under which a fire is burning every day. The butterfly is still alive and hearty, but its wings are somewhat frayed, and every day it has a short flutter and changes its position. Of course it has had no food given it. If on a sunny day the globe is placed in the window, the insect is especially lively, and seems heartily to enjoy the extra warmth and light. Could butterflies be preserved in quantity in this way through the winter months? *A. D.*

Garden Operations.

PLANT HOUSES.

GREENHOUSE HARD-WOODED PLANTS. — The requirements of these for the present will be of a routine character. At this season less water will be needed than at any other time, consequent upon short days, humid atmosphere, and the plants being in their most dormant state; but it sometimes happens that serious injury is done by letting the soil get too dry. Although comparatively few of the plants will need water at each time the stock is gone over, yet the whole should be examined two or three times a week, attending to this early in the day, and being careful not to slop any about than can be avoided. The temperature of the water used for greenhouse plants, especially during winter, often receives less consideration than its importance demands; where the necessary convenience of a supply cistern in each house does not exist, it frequently happens that the water is obtained from wells or other sources, and used at once many degrees lower in temperature than the roots of the plants; this, of course, is not so directly injurious as it would be during the most active season of growth, yet it has a tendency to stagnate the energies of the plants, which are never quite at rest. Any hard-wooded plants, especially young specimens, that may appear rather delicate—lacking that robust health so much to be desired—may frequently be brought round by putting them at this season in a few degrees more warmth, say in the temperature of a Pelargonium-house (about 45° in the night) but when so placed they must have plenty of light. Such things as Leschenaultias, especially the blue varieties, Gompholobiums, Tetrathecas and Pimelea spectabilis) should not be kept too long in so low a temperature as the generality of hard-wooded subjects will bear. It will be the more necessary to avoid this now when their flowers will naturally want to commence growing: the result of keeping such plants as the above too cold is that it usually affects the leaves in a way that causes many to fall off, which has a most baneful effect upon their health, not only in their power to flower freely in the coming spring, but the roots also suffer so as to interfere with the summer's growth.

CAMELLIAS.—Any plants of these that have got naked will be much improved by heading-down, but this should never be resorted to unless the plants are in good condition at the roots: to head-down a plant with poor unhealthy roots is generally fatal in its effects. Where it is the intention to thus operate upon Camellias, the sooner it is done the better. The length of time it takes to form good heads is much shortened by early cutting back, as the roots, not yet being much in action, do not receive such a check, and many more buds will break than if headed-down later on when they were about to commence growing. Before heading-down these or any other subjects grown in pots or tubs, care should be taken that the soil is in a suitable state as to moisture; if too wet the roots are liable to rot—if dry it necessitates their being soon afterwards watered, which has a similar effect. After being thus cut-in they should be placed for some weeks in a night temperature of 45°; this will cause numbers of latent buds that are not visible, but which nevertheless exist on the main stem and remaining portion of the strong branches, to swell and ultimately break into growth, whereas, if the cut-back plants are hurried into growth, they will bleed severely and break sparingly. *T. Baines.*

FLOWER GARDEN.

There being so little attraction in the garden at this season in the shape of flowers, no labour should be thought too great to make it attractive in other ways, and there is no more effective way of doing this than by constantly keeping lawns and walks scrupulously clean. Frequently roll the latter, and particularly after heavy rains or sharp frosts. Now that the weather is open, new work of all kinds should be advanced with despatch, particularly turf laying and levelling of verges and other uneven parts of lawns. The planting of all kinds of evergreen and other shrubs should also have attention, as late spring planting (unless for a very few kinds of shrubs) is undesirable. Mulch and stake as soon as planted, that no injury accrue to the roots through frost, drought, or wind-waving. On the first indication of severe weather protect half-hardy Ferns and other plants by mulching round the base of them with sifted coal ashes, and covering the tops with bracken or any other light material. Tie up the foliage, and by wrapping mats round them protect such plants as Aralias, Australian Dracænas, Phormiums, and Palms, many of which are very nearly hardy, and prove perfectly so with the protection of a mat. Dig or trench vacant flower-beds, and manure or not according to the kind of flowers or foliage it is intended to fill them with. Calceolarias, Verbenas, and all moisture-loving "bedders" require rich feeding, and, therefore, the beds intended for these should be liberally dealt with in this matter. Pelargoniums and the like flower best when the soil is rather poor. Now that the leaves are all down, shrubbery borders should be lightly forked over just deep enough to cover the leaves, to prevent them blowing about. A list of plants likely to be required for summer bedding should be made out forthwith, and the stock of plants looked over, that any kinds likely to be short may be prepared for propagating purposes by their introduction into heat. This applies more particularly to Pelargoniums and other plants of slow growth. As to Alternantheras, Coleus, Petunias, Verbenas, &c., a month hence will be ample time to commence propagation. *W. Wildsmith, Heckfield.*

FRUIT HOUSES.

ORCHARD-HOUSE.—In this structure, when artificial heat is employed, the Apricots, Peaches, and Nectarines will now be beginning to swell their buds, and daily syringings will have to be commenced. If the trees are in pots, watering them once a week will only be required, unless the balls of earth are very dry, when a good soaking must be given, care being taken that the drainage is not defective. At this stage of the growth of the trees the house must be aired freely in the daytime and shut up closely at night, and the temperature kept up by fire-heat if the thermometer threatens to fall many degrees below the freezing point. In unheated orchard-houses, owing to unfavourable springs, there is great uncertainty in Apricots, Peaches, and Nectarines setting good crops, unless they can be protected when in bloom in February or March. Plums, Cherries, Pears, and Apples, naturally blossoming later, are safer in such structures, and their management by amateurs and gardeners short of forced fruit is a source of great pleasure and excitement, if not of profit. See to all surface dressing, pruning, and painting the trees with a mixture of Gishurst, sulphur, with some tobacco juice added, and clay, to make the mixture thicker and to deaden the colour. This will help to keep aphis and red-spider in check when growth commences. If the trees are now out-of-doors it will be safer to put them in the house or under cover until the buds begin to swell. *William Tillery, Welbeck.*

VINES.—Where it is requisite to have new Grapes in April or early in May, these should now be in a forward state of growth, and if sufficiently advanced so as to show fruit the strongest shoots may be stopped at one or two joints above the fruit. If grown in pots—and this is the best plan for very early work—all superfluous or barren shoots may be removed. As a rule not more than five or six bunches should be carried on each one-year-old Vine, and as these are useless after the crop is taken it is better to direct the energies of the plant to the production of fruit rather than an excess of foliage. Maintain a steady night temperature of 60° to 65°, increasing to the maximum in mild weather; when the temperature of the house rises above 70° with sun-heat a little air should be given for a few hours during the middle of the day, closing up early. Syringe the Vines gently once or more during the day until the flowers begin to expand, when the atmosphere of the house should be kept somewhat dryer and syringing the Vines discontinued, at the same time increasing the temperature a few degrees, while in bloom. Sprinkle the pathways and floor daily, but avoid watering over the pipes or flues when overheated, as this frequently produces a superabundance of heated vapour which is injurious to the tender foliage, and at a later period is a fruitful cause of rust. Vineries to be started now, presuming pruning, cleaning, and washing, if necessary, have been done in due time, should be closed for the next two or three weeks so as gradually to excite the action of the sap before applying fire-heat, except in severe weather, in which case a little may be applied when the thermometer falls below 50°. Prepare the later houses as far as fruit is cleared off; the longer the Vines have to rest after pruning the better, so as to thoroughly heal their wounds. *William Cox, Madresfield.*

MELONS.—For an early supply of Melons, a few seeds may now be sown in small pots, and plunged in a bottom-heat of 85°, keeping them well up to the glass, which must be clean, as the Melon, like the Cucumber, requires all the light that can be obtained at this dull period of the year. When the plants are coming into rough leaf they may receive a shift into 5-inch pots, using good turfy loam, which must previously have been warmed to the temperature of the pit. Observe great care in potting, as the slightest pressure of the stems at this early stage will prove fatal. Replunge in bottom-heat, and water sparingly until the roots have taken to the new soil. By the time the plants are fit for removal from the nursing-pit, that for their reception should be put in order. Cleanse the glass, paint the woodwork if necessary, and wash the walls with quicklime, to which a handful of sulphur has been added. If bottom-heat is obtained from tanks or hot-water pipes, small mounds or a ridge of compost should be formed in time for the heat to pass through it before the plants are turned out. For the growth of Melons I always use 16-inch pots plunged in good fermenting material over the bottom-heat pipes. The roots are under command, the fruit sets better, and the flavour is improved by restriction. The compost which suits them best is strong loam from an old sheep pasture, with a liberal admixture of lime rubble or plaster firmly rammed into the pots. Seakale or ordinary flower-pots with the bottoms partially broken out best answer the purpose, as they allow of the free egress of water, of which the Melon requires copious supplies when swelling off its fruit. *W. Coleman, Eastnor.*

FIGS.—It is a common practice in forcing these to employ trees in pots for the purpose of giving the earliest supply of ripe fruit. Directions concerning the needful preparations for forcing, and the first conditions of treatment of such trees, appeared in the preceding month's Calendar; for the present those directions should continue in force. To supplement the former supply it will now be necessary to start the earliest house of permanently planted trees; maintain about these by artificial means a genial state of atmospheric moisture at a temperature of about 50° at night and 55° in the daytime, and if sunny it may range between 60° and 70° at this time, having a free circulation of air in the house. Syringe the trees every morning and afternoon, and open and close the house at about 57°. At this stage in forcing operations avoid as much as possible a premature excitement. See also to the condition of trees in later houses; get them pruned forthwith and dressed if needful, and then retied to the trellises in readiness for starting. Notwithstanding the very limited area to which the roots of many Fig trees are restricted, exuberance of growth will sometimes prevail and in some degree cause a deficient crop of fruit. Whenever the trees attain such a condition, do not let the proper time—the winter months, the earlier the better in the case of forced trees—pass without using remedial measures by practically lifting the roots and shortening them back with a knife, at the same time adding fresh soil—loam only, to induce rootlets to start afresh. *G. T. Miles, Wycombe Abbey.*

KITCHEN GARDEN.

To have vegetables of first-class quality—rich, juicy, and succulent—deep cultivation is of the utmost importance for the roots; too much dependence appears to be placed on manure, and too little on deep cultivation, as it is no uncommon thing to see the top spit full of this, while the subsoil is hard and impenetrable. Where this is the case, it is impossible for the crops to stand even a few days' drought without suffering considerable injury. Trenching is, therefore, one of the most important operations connected with this department, and when labour can in any way be spared it should be carried out on every piece of ground as it becomes vacant. Before proceeding with trenching and manuring, it is necessary to decide as to what particular crop shall occupy the different parts of the gardens. For this purpose a plan should be got, and a certain portion of ground, alloted to each kind of vegetable, to suit the known requirements of the establishment. The different parts can then be prepared according to the kind of crop it is intended to grow, and such as are gross feeders and derive benefit from soil abounding in manure, can be treated to suit their requirements, while others, delighting in great depth of soil free from fresh manurial matter, may likewise be accommodated. This would not be the case were the land to receive manure as it became vacant without any set plan or systematic variation of crops. By a little forethought and study of the requirements of the different kinds of vegetables, one crop may in a great measure be made to prepare the ground for the next. Cauliflowers under the protection of handlights or other glass structures should have an abundance of air both day and night, or the present mild weather will cause them to button. Where any are still standing on the seed-bed, a few hundreds should be potted up at once in rich light soil and be placed under glass, to fall back on in case the earliest do not stand. A sowing should likewise be made in boxes, to be placed in heat, to succeed the above. No time should be lost while the weather is favourable in making a second sowing of Peas, to succeed the first earlies, and for this purpose there is none better than Advancer, as it is very early, a splendid cropper, and of most delicious flavour. For borders, Maclean's Gem is unsurpassed, and where the early sown crop is unsatisfactory a few boxes of this sown at once in sifted leaf-soil will be found most valuable for transplanting in March. Taking into consideration the losses through vermin and insects to which early sown Peas are liable, the little extra trouble of sowing in pots or boxes and transplanting the same is fully made up by the certainty of ensuring a full crop. *J. Sheppard, Woolverstone.*

HORTICULTURAL EXHIBITIONS, 1876.

JANUARY.

19.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.

FEBRUARY.

16.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.

MARCH.

1.—Royal Horticultural Society, South Kensington, Meeting of Fruit, Floral, and Scientific Committees.
14.—Manchester Botanical and Horticultural Society. Floral Meeting at the Town Hall.
15.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
15 and 16.—Leeds Horticultural Society. Spring Show.
29.—Royal Botanic Society (Regent's Park). Spring Show.

APRIL.

5.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
19.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
25.—Manchester Botanical and Horticultural Society. Exhibition of Auriculas, &c., at the Town Hall.
26.—Royal Botanic Society. Second Spring Show.
27.—Royal Horticultural Society of Ireland. Spring Show.

MAY.

3.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
17.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
18.—Royal Horticultural Society of Ireland. Second Spring Show.
24.—Royal Botanic Society. Summer Exhibition.

THE

Gardeners' Chronicle.

SATURDAY, JANUARY 8, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Jan. 10	Sale of Orchids and Lilies, at Stevens' Rooms.
TUESDAY,	Jan. 11	Sale of Poultry and Pigeons, at Stevens' Rooms.
WEDNESDAY,	Jan. 12	Sale of Imported and Established Orchids, at Stevens' Rooms.
THURSDAY,	Jan. 13	Sale of Imported Lilium auratum, at Stevens' Rooms.
FRIDAY,	Jan. 14	Sale of Miscellaneous Scientific Property, at Stevens' Rooms.
SATURDAY,	Jan. 15	Sale of Hardy Trees and Shrubs, Roses, Bulbs, &c., at Stevens' Rooms.

THE question of the INFLUENCE of CLIMATE on, or of the amount of heat, light, and moisture required by different PLANTS in order to perform their several functions perfectly is one of the first importance to the practical gardener. Facts are constantly unfolding themselves before our eyes, and often without being duly appreciated and their full significance understood. Every gardener, however, be his experience ever so slight, is aware that the first process or phase in the life of a plant, germination, requires a certain amount of heat (associated with a relative amount of light and moisture) to effect it, varying widely for the different species commonly cultivated. Further, that although this and other stages in the development of certain well-known species progress under very diverse climatal conditions, there is a definable range of temperature, amount of light, and quantity of moisture, subject to which each species will most perfectly perform its several functions. In forcing plants particularly, whether for their fruits or flowers, we find that we are bound to observe the constitutional peculiarities of the species under treatment. Indeed, ignorance on this point is the principal cause of failure, and has often led to impracticable schemes, such as growing Grapes in the open air in this country for wine-making. It is notorious that our climate is deficient in solar light and heat, especially in the autumn, as compared with Continental places in the same latitude, hence perfect ripeness is rarely attained by some fruits. There is, however, great diversity in the ability of different species to thrive and reproduce themselves under somewhat extreme climatal conditions. While some, like the Apple and Grape Vine, will flourish in very different climates, others are killed by very slight increments of heat or cold. Some plants will bear an increase of heat with impunity, whereas the slightest frost is sufficient to destroy them; others, again, are better able to withstand a greater amount of cold than they commonly undergo where they grow wild. But it will be found that it is not difficult to ascertain the constitution of a plant if we know something of the main features of the climate of its native habitat. Much greater care is necessary in forcing the Peach or Cherry, for instance, than the Grape Vine, though all are quite hardy in the open air. But we know that the Grape Vine is a native of a warmer climate than the Cherry. This bring us to an interesting and important fact in connection with the perfect development of a plant and the fulfilment of all its functions. It is this—that practically the total amount of heat, or the sum of the temperature used by a plant in profitably performing a given function, is essentially the same when other agents, such as light and moisture, are present in their proper proportions. But when there is a preponderance (for the species under trial) of one of these agents, the results, as will be seen below, are exceedingly unequal. As already indicated, some plants are capable of receiving the amount of heat required for certain functions either slowly—that is, distributed over a lengthened period, and the temperature never very high—or more rapidly; the result being substantially the same in both cases. But there are minimum and maximum sums of temperature for each species, below or above which vegetation is impeded or certain functions retarded or altogether arrested. The climate of Great Britain is such that we have many striking illustrations of this class of phenomena around us. Many exotic plants that are capable of withstanding the cold of our winters rarely if ever produce flowers, so that they would quickly die out if left to themselves, unless they have the power of spreading from the root. Others, again, flower every season, but seldom or never produce mature seeds.

The question of how much heat is required by certain plants to perform given functions has, at some time or other, occupied the attention of many of the most noted searchers into the secrets of vegetable biology—SCHACHT, NÆGELI, BURCKHARDT, DE VRIES, PEDERSEN, SACHS, HOFFMANN, &c., several of whom have pursued the inquiry from different points of view. ALPHONSE DE CANDOLLE was among the first to practically apply a system of amounts of heat to the phenomena of plant life. His first exposition of the subject will be found in his *Géographie Botanique Raisonnée* (1855). Quite recently he has published, in the *Archives des Sciences de la Bibliothèque Universelle*, the results of his investigations up to the present time, and his deductions therefrom. This memoir embodies the data afforded by experiments in the germination of seeds under perfect control, and the less exact information obtained from the registration of the leafing, flowering, and maturation of the same species under different climatal conditions, with especial reference to the amount of heat used by the plant for these functions, with greater or less light and moisture. In the first place we will take the initial phase in plant life, germination. It is not an uncommon practice now to soak certain seeds to hasten germination, and some will even bear boiling for a short time. That this does not cause decomposition of the testa, but simply affords the heat required for germination in a concentrated form, is evident from the nature of the seeds of many plants that succeed thus treated. Much time is gained by scalding the seeds of some of the Acacias, and those of the familiar Albizzia lophantha, kept in water at about 150° Fahr. for a few days, speedily germinate, otherwise they usually lie dormant in the ground for a long time. The experiments of DE CANDOLLE and other physiologists include the extreme temperatures at which seeds of different plants will germinate, and the time consumed before the appearance of the radicle. All the calculations are based upon the zero of the Centigrade thermometer (equal 32° Fahr.), and for convenience we have reduced all the figures quoted to FAHRENHEIT'S scale. By means of the apparatus employed, the experimentalist was able to maintain a temperature of 32° during thirty-five days without any variation; and in higher temperatures the variation has never exceeded a degree (1°.8 Fahr.). We will quote two examples, one germinating at a low, and the other at a high temperature. Mustard, Sinapis alba, germinated below 32° on the seventeenth day, and it is probable that this minimum might have been reduced still lower if it had been possible to keep liquid water around the seeds at 31°.1 or 30°.2. Between 32° and 41° and 51°, each degree greatly accelerated the germination of Sinapis. Thus, at 35°.6, fifteen days elapsed; at 39°.2, nine days. Afterwards the advance was more regular, but the rate of progress decreased gradually with each increment of temperature. Between 54° and 68° the seeds invariably came up the second day. At 69°.8 germination took place in less than a day—22 hours. This was the most rapid rate reached. At 77° the rate slightly diminished, and at 82°.4 only a small proportion of the seeds sprouted, and those at the end of the third day. At 104° not a single seed germinated. The second was the Cantaloup Melon, whose lowest temperature of germination was about 61°.5 to 62°.5, more than nine days being required at this heat. From 66° the period was nearly uniform up to 75°, being three days. From 77° to 82°.5 it slightly increased, as the seeds did not germinate till the fourth day, and this period was maintained with little variation up to 104°. At 105° one seed came up in ninety-four hours, that is, four days less two hours.

Many other species tried exhibited the same rapid increase at first, then uniformity during a long series of augmentations of temperature, succeeded by longer periods until the upper limit was reached. The seeds of Collomia coccinea offered a curious exception. They will germinate between 41° and 43°, but not readily except between the narrow range of 48° to 62°. Above this the heat becomes injurious to the species, and at 70° it took twenty-seven days, and with a greater heat the seeds did not germinate at all—

The following are the figures for one species, with sums of the temperatures, according to the Centigrade scale.

Sinapis alba.

Temperatures.	Days.	Sums of Temperature above the Minimum, which is 0°.
0°	17	0°
1°.9	16	30°.4
5°.7	4	22°.8
9°	3½	31°.5
13°	1¾	22°.7
17°.2	1.7	29°.2
21°.1	1.9	40°.1
25°.1	1½	37°.6
28°	3	84°

We give one more table for the sake of showing the two calculations of the sums of temperature, one set above 0°, and the other above 11°—the minimum at which the seeds germinated:

Sesamum orientale.

Temperatures.	Days.	Sums of Temperature above	
		0°	11° (min.)
12°.6	9	113°	14°
16°.9	3	51°	17°
21°.1	1.4	29°	14°
24°.6	0.94	23°	13°
28°	0.92	25°	15°
40°.7	0.44	18°	13°

The preceding figures offer two points worthy of consideration:—1st. In both methods of calculating the amounts of heat, whether from 0°

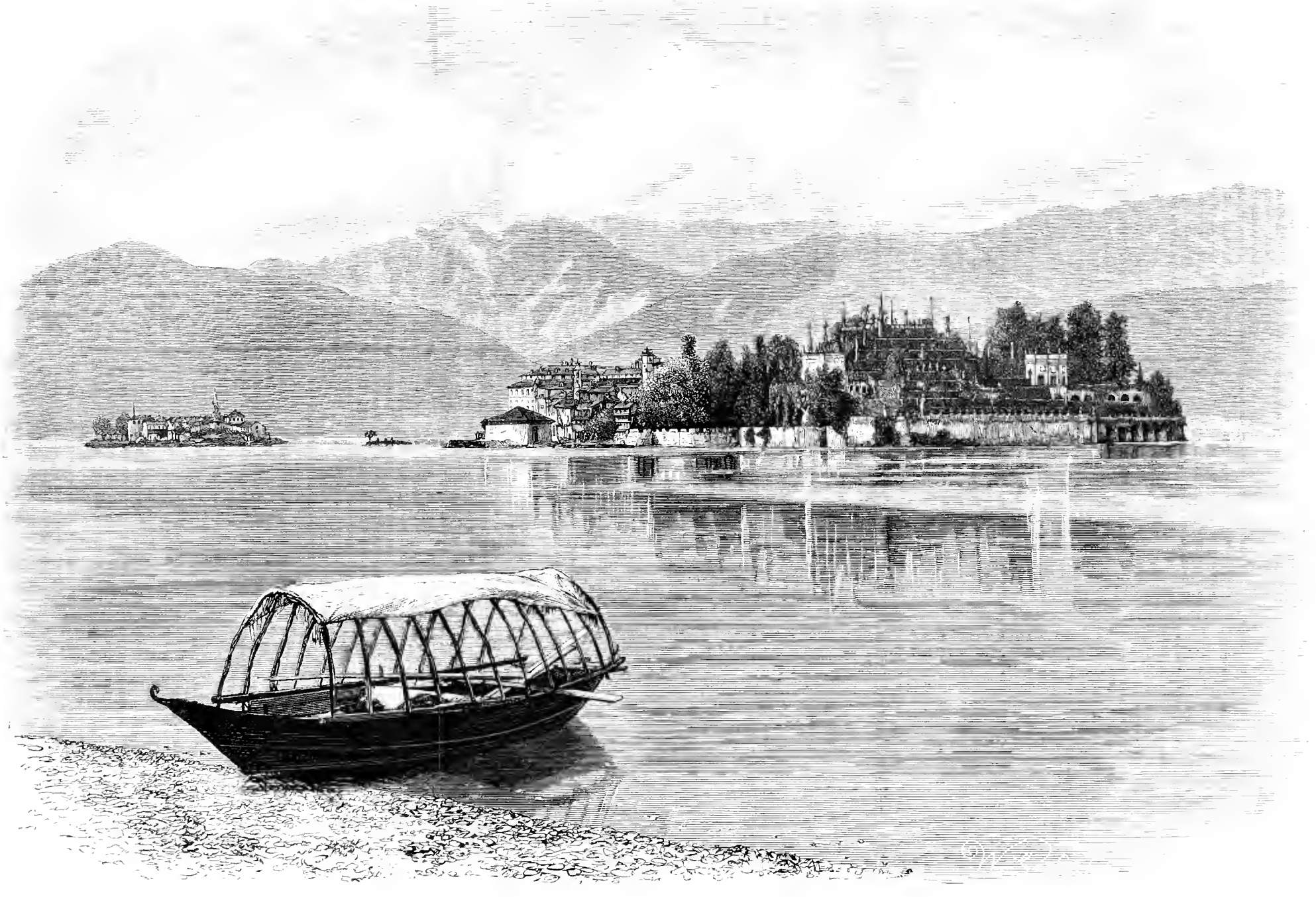

FIG. 11.—THE GARDEN OF ISOLA BELLA IN THE LAGO MAGGIORE. (SEE P. 51.)

or from the minimum for the species, the first and last figures do not tally with the intermediate ones, especially in the case of species that will germinate at very different temperatures. The plant may be likened here to a steam-engine whose work must not be reckoned upon with an insufficient quantity of fuel, nor must it be heated to the point of bursting. 2d. When the extreme minimum is known for a species it will be seen that the figures agree better if calculated from that minimum rather than from 0°.

Respecting the sums of temperature for leafing, flowering, and maturing of the same species in different localities, which are taken many of them from LENSSER'S very exact calculations, the learned author deduces the following laws :—

First Law.—Under about the same latitude and at similar altitudes, the sums of temperature above 0°, observed in the shade, are always higher for the same species and the same function in western localities, with a humid, equable climate, than for eastern localities, having a dry extreme climate.

Second Law.—In western Europe, between 43° and 60° of latitude, the sums of temperature above 0°, and in the shade, for the same species and the same function, diminish in advancing from the south northwards, whilst in eastern Europe the figures do not present any regularity corresponding to the degrees of latitude.

Third Law.—The additional heat due to insular position, and the accessory advantage possessed by certain countries of a suitable degree of humidity, explains, to a great extent, the diminution of the sums of temperature in the shade for each species, in advancing from the west to the east, and from the south to the north. In other words, if it were possible to calculate these influences with exactitude, and add them to the sums of temperature in the shade, the total sum thus obtained would come much nearer being equal throughout Europe for the same function of the same species.

We forbear quoting more figures, but it appears that we suffer in two ways from an excess of humidity, as the total amount of heat does not effect so much as an equal amount in a moderately dry climate would do. The utility of these outdoor observations is obvious, especially those relating to cultivated species or their varieties, as they give us a knowledge of the minimum at which they will grow, and the lowest sum at which they will thrive.

—— IN the gardens of W. TERRY, Esq., Peterborough House, Fulham, there is a plant of ONCIDIUM SERRATUM, in an 8-inch pot, with a spike 8 feet 6 inches long; there is also a smaller spike 2 or 3 feet long. The two have in all seventy flowers. Other Orchids in flower in the same collection are Odontoglossum Alexandræ and O. Lindleyi, Cypripedium insigne and C. Maulei, also C. Lowii, Lælia anceps, Oncidium ornithorhynchum, Angræcum sesquipedale, with three spikes and five flowers open; Calanthe vestita, and Goodyera discolor, in 8-inch pots, with twenty spikes, some of which are 12 inches long.

—— It is not often that we find anything of horticultural interest in what is termed a "religious" newspaper, but the following note on the CULTIVATION OF EUCALYPTUS GLOBULUS IN ROME, which we take from our contemporary the *Tablet*, is worth reproducing in these columns :—

"On December 15 one of the deputies to the Italian Parliament, named COMIN, presented an order of the day, requesting the Government to promote the cultivation of the Eucalyptus globulus, a tree which possesses the virtue of destroying fever and malaria. The Parliament rejected the order of the day. But the enterprise of some of the despised religious orders has done to some extent what the Italian Legislature declines to attempt. The Trappists at the Convent of St. Paul at the Three Fountains, have successfully undertaken the culture of this wonderful plant, and proved that it can be made to grow in any quantity on Roman soil. One FREDERIC VON HELLWALD, in the German Review, the *Ausland*, thus describes the operations of the Trappists :—'When I visited the Convent of the Three Fountains, I saw young plantations of the Eucalyptus, the tallest of the trees being over 13 feet high. The Eucalyptus globulus possesses in an eminent degree the property of dispelling fevers, and one may see in Spain, Algiers, and Cuba, many tracts of land which in a short time were purged of fevers by the Eucalyptus and rendered salubrious. The result was obtained as much by the absorbent power of the roots, which removes the humidity of the soil, as by the balsamic and camphorous perfume emitted by the leaves. I was always convinced that the malaria of the Roman Campagna could only be combated with success by means of the Eucalyptus. The only question in my opinion was whether the climate of Rome would suit this precious and delicate plant. My surprise was great in finding the question solved with complete success. On my visit to the Three Fountains I was received kindly by the Trappists, and was permitted by the monk who acted as gardener to examine everything minutely, and to collect all details of information concerning the plants. There is no doubt the Eucalyptus grows and thrives at the Three Fountains. The plants are already over a thousand in number, and the monks do their utmost to multiply the young shrubs by separating and transplanting them. They have suffered somewhat from the rigour of the winter, but the great majority of the plants have undergone the ordeal of the severe weather without serious harm.' Herr VON HELLWALD, who is a German Freethinker, recommends GARIBALDI, in spite of his hatred of monks, to visit the Three Fountains, and see what the Trappists have done towards promoting the culture of the Eucalyptus. The Trappists willingly give away plants to proprietors of land who wish to make trial of them. On HELLWALD'S visit forty-five trees were given to one gentleman of the neighbourhood. It is noteworthy, says HELLWALD, 'that while the deserted solitude of the Campagna Romana is imputed to the priestly *régime*, it is precisely to monks that we owe the discovery and practice of the only means which can remedy the evil.'"

In connection with the introduction of the Eucalyptus in the Roman Campagna, the names of GARIBALDI and of Prince TROUBETZKOI should be mentioned, as having been active in promoting this good work, in addition to others whose names are more familiar.

—— The Comte D'ÉPREMESNIL calls attention, in the *Revue Horticole*, to the following method of GROWING GRAPE VINES IN POTS, which, though not new, is little practised. He recommends it especially for districts where the Grape ripens badly or not at all. In the spring, before vegetation begins, specially reserved canes one or two years old are taken from a Vine trained against a wall and bent downwards to the ground, and introduced through the enlarged hole of a 12-inch pot from the bottom upwards, so that the cane, furnished with side-shoots, stands about 18 inches above the top of the pot. That part of the cane in the pot is split longitudinally, and two or three small wooden wedges inserted in the cleft to keep it open and encourage the formation of roots. The pots are then filled up with good soil, and moderately watered as soon as the buds begin to break. A slight protection of tiffany or some such material against late frosts is recommended. Treated in this way, the writer says he saw early last September plants with from twelve to fifteen bunches of first-rate Grapes, ripened as well as one could wish. As soon as frosts threaten, the canes should be severed from the mother Vine below the pot, and the plants taken to the Grape-room, to be removed for the table as occasion may arise. By these simple means excellent fruit may be obtained with comparatively little trouble. In countries where Grapes do not ripen well, sash-lights might be profitably employed to cover them in a slanting direction, or the canes might be parted from the mother Vine a little earlier, and removed to a greenhouse, where there is usually plenty of space at this time of year.

—— Professor THISELTON DYER, Assistant Director, Royal Gardens, Kew, will give four LECTURES, on Saturdays, February 12 to March 4, AT THE ROYAL INSTITUTION of Great Britain, Albemarle Street, W. The subject of the Professor's discourses will be the Vegetable Kingdom—the boundaries and connections of its larger groups.

—— A writer in the *Gartenflora* says, in spite of the objections of local botanists that "it spoils the flora," he cannot see how anything but pleasure can accrue from the NATURALISATION OF handsome, and at the same time harmless, EXOTIC PLANTS in the fields and woods of his neighbourhood; and carrying out this view he scatters seeds of various plants broadcast. What matter if these uncertain botanists exhaust their vain endeavours to determine these colonists, so long as they embellish our valleys? This is in the Duchy of Saxe-Weimar, where he has succeeded in establishing Saponaria ocymoides, Salvia Sclarea, &c. The Laburnum and Cytisus elongatus are also naturalised in the woods, and Mimulus luteus has become exceedingly abundant in some localities. Collomia coccinea grows in large patches on the sandy banks of the Apfelstedt between Gotha and Erfurt. We can see no harm in this, for the distribution of plants is now too well known for botanists to be easily imposed upon.

—— In a recently issued report on the Island of Dominica, Mr. PRESTOE, the Government botanist at Trinidad, mentions the BLACK ANTIGUA and PITCH LAKE varieties of PINE-APPLES, as being excellent keepers. He has proved by experience that both keep quite as long as the Queen. "The Pitch Lake Pine of Trinidad is pre-eminent as a long keeper, and in the combined characters of size, consistence, and flavour, is perhaps the finest Pine in the world." Do these find their way into Covent Garden?

—— The GREAT CONSERVATORY which is being erected at LACKEN for the King of the BELGIANS is 120 metres long. The centre forms a vast dome, 58 metres in diameter, and surmounted by a crown-shaped top, 30 metres high. It is probable that the King took the idea from the winter garden belonging to the Burgomaster of Ghent.

—— The next meeting of the INSTITUTION OF SURVEYORS will be held on Monday evening, January 10, when a discussion will take place upon the paper read by Mr. W. D. GARDINER at the last meeting, entitled "The Present State of the Law Relating to Lights." The chair to be taken at 8 o'clock.

—— According to the *Builder*, one of the finest specimens of POLLARD OAK ever grown in England was sold the other day in Liverpool. Its trunk was 14 feet in length and 21 feet in circumference, its actual weight, inclusive of the root, being 13 tons. This tree, which was grown near Chipping Norton, in Oxfordshire, is to be used for furniture. It was opened at the Brunswick Saw Mills, Liverpool, and presented a rich brown appearance, resembling in every respect tortoise-shell, and being perfectly free from shake. The tree is calculated to produce 70,000 feet of veneers, their value being estimated at 500 guineas.

—— Dr. HANCE, in the current number of the *Journal of Botany*, has an interesting note on the HUSKLESS WALNUTS OF NORTH CHINA, which may be taken as supplementary to Mr. JACKSON'S remarks upon that fruit in a recent number. These huskless Walnuts are of two sizes, the smaller measuring an inch across, the larger an inch and a half.

"The nuts are rather thinner and more brittle than in the common Walnut, and their surface is curiously and irregularly eroded, presenting very much the appearance of sea-worn rock; the outer polished coat, in fact, is partly wanting and partly separable from the inner thin part, which it covers only in patches, and pieces of it can easily be detached by the nail. They show a tendency to split longitudinally at the side of the thickened keel formed by the junction of the valves; and the small-sized nuts (which are much thinner, indeed, sometimes little more than coriaceo-cartilaginous in texture) along the middle of the valves also. Vertical and transverse sections exhibit the thin septa, and in all respects the structure of the ordinary form of Juglans regia, Linn., of which this is doubtless only a singular monstrosity. Dr. BRETSCHNEIDER says this curious fruit is cultivated in the mountains to the north-east of Peking.

—— Mr. DAYDON JACKSON writes to the *Athenæum*, from 30, Stockwell Road, S.W. :—

"I have nearly completed the editing, for speedy issue, of the *Catalogue of Gerard's Garden in Holborn*, which was published in 1596, one year prior to the publication of his well-known *Herball*. May I ask you to inquire for me, through the medium of the *Athenæum*, if any of its readers could direct me to copies in private hands, for convenience of collation; also, any copies in

public libraries, other than the British Museum and the Bodleian? I may mention that I intend to publish both editions of the *Catalogue*, with modern names appended, and such additional matter as I have been able to get together."

—— The first annual meeting of the committee of the HORTICULTURAL CLUB was held at the Club-house on Wednesday last. The financial position of the Club is, we are glad to say, in a most satisfactory position. Dr. HENRY BENNET, Captain CHRISTY, and Dr. DENNY were elected members of committee in the place of the three retiring members. It was arranged that meetings for discussion on questions of interest to horticulturists would take place during the winter months. The subject to be discussed at the next meeting is the general question of "Pruning." Altogether the Club exhibited proof of its being able to meet in a satisfactory manner a long-felt want amongst horticulturists. A library committee was appointed to take steps to form a reference library. Messrs. MAURICE YOUNG, of Godalming; GEORGE CHRISTY, of Buckhurst Lodge, Westerham; and JOHN WATERER, of Bagshot, have been recently elected members.

—— It is stated that the next number of the *St. James' Magazine* will contain an article on the history and fortunes of the Royal Horticultural Society, from the pen of the late Secretary to the Society, W. A. LINDSAY, Esq.

—— From Messrs. HOOPER & Co., Covent Garden, we have received some samples of neat CANE AND WOOD TRELLISES, similar to those introduced from America last year by Messrs. WILLIAMS & Co., and figured in our columns in April, p. 446.

—— A schedule of prizes has been issued by the ROYAL BOTANIC SOCIETY for exhibitions to be held at Regent's Park on March 29 and April 26. On the last-named date three prizes are offered for "six old-fashioned hardy plants in flower, distinct (in pots)," with the condition that no plant introduced to the gardens of England during the present century is to be considered old-fashioned.

—— According to M. BALTET, who, however, does not speak on the point with certainty, the Pear known as Brockworth Park is synonymous with Bonne d'Ezée. Mr. SCOTT fully maintains their identity.

—— We have seen and heard of many OLD PELARGONIUM PLANTS, but none so old as those described by the Comte D'ÉPREMESNIL in a letter to the editor of the *Revue Horticole*. He says: "I have seen two remarkable plants in M. LECLERC's garden at Fecamp. They are two Pelargoniums of the variety Tom Thumb, known, on good authority, to be more than forty years old. They were growing in two vases about 18 inches deep by 15 inches in diameter. The size of the plants was nothing unusual, the stem being only about 4 inches in girth at 8 inches from the ground, but they formed fine dense bushes about 5 feet high by 8 feet in circumference, and were a perfect blaze of colour. Of course they would have been very much larger, if they were not annually subjected to a severe pruning." Some of our younger readers may like to know the history of this old friend, and they will find it in our volume for 1866, p. 973.

—— The French horticultural journals call attention to AMPELOPSIS CITRULLOIDES as a handsome hardy creeper, remarkable especially for its violet coloured fruit spotted with green. We have not seen the plant, but it seems to be worth inquiring for.

—— A CURIOUS PELARGONIUM SPORT is recorded in the *Revue Horticole*. A gardener, named CREPET, living at l'Orme-du-Pont-en-Puysaie, Yonne, has a double-flowered Zonal Pelargonium with a single stem which exhibits this peculiarity, that the flowers of one-half of the head are of a beautiful rose, while those of the other are of a dark scarlet, the normal colour of the flowers of the variety.

—— As Pears ripening in August are few in number it may be well to cite M. CHARLES BALTET's recommendation to plant Clapp's Favourite, the Assumption, and Doctor Jules Guyot.

—— According to M. PETZOLD, in the *Deutschen Reichsanzeiger*, the original tree of the upright Oak, QUERCUS ROBUR FASTIGIATA, near the village of Haareshausen, by Aschaffenburg, is 100 feet high, 3 feet 4 inches in diameter breast high, and about 280 years old. The first branches are given off at about 30 feet from the ground. The first descendant of this fine tree adorns the grounds of Wilhelmshöhe, near Cassel. It stands near the castle, and is 92 feet high, and a foot less in diameter than the parent tree. The age of this specimen is estimated at 90 years, and it is a very vigorous, healthy tree, branched to the bottom, so that it may be expected to exceed the parent tree in height and size, as it does already in beauty.

—— The Manchester Field Naturalists' Society is collecting information with regard to TREE LIFE IN CITIES, and proposes to issue a memoir setting forth definitely how far the conditions antagonistic to tree life, in cities in general, and in Manchester in particular, may be modified or overcome.

—— It is stated in the *Gartenflora* that many gardeners failed to flower the VICTORIA REGIA last season. In the Botanic Garden at St. Petersburg it developed unusually fine leaves but no flowers, and this is said to have been the case in other places on the Continent. It flowered in the nurseries of Messrs. ABEL, in Vienna, last August, from plants raised the previous January, and planted out in June. Sixteen years ago it flowered at Schönbrunn for the first and last time, and since then, until last season, it has not flowered in or near Vienna. This unsuccess is rather inexplicable, and we ask, with the editor of the journal named, what can be the cause of it?

—— A CURIOUS INCIDENT IN HOT-WATER HEATING has been observed at the Grove Vineyard, Feltham, a new establishment owned by Mr. WM. COLE, formerly of Ealing Park. In heating a 150 feet lean-to vinery, Mr. COLE used three lengths of piping, two flows and one return, the pipes being laid side by side on raised piers of brickwork. The middle pipe, one of the flows, has on its outside at intervals lengths of cast-iron gutters to hold water for evaporation. When all the piping was fixed it was found to answer admirably, but as soon as water (cold) was placed in the gutters no heat was found to pass beyond the one nearest the boiler, and in consequence considerable heat was lost. Mr. COLE was unable to account for this stoppage of the circulation until, desiring to have a drier atmosphere, the gutters were emptied, when the flow again commenced, and the heat was as effective throughout the pipe as in the other flow. As an experiment, some cold water was again placed in the first gutter, and a speedy check was once more apparent.

—— We understand that Messrs. G. JACKMAN & SON, of Woking, have made arrangements by which they will hold their fine EXHIBITION OF CLEMATIS again next spring in the garden of the Royal Botanic Society, in the Regent's Park. The show is to open on the first Wednesday in May, and to be continued for two or three weeks, as the effect of the season on the plants may permit. The varieties staged will be principally of the spring-flowering patens group, supplemented pretty freely by the early summer-flowering group, for the varieties of which latter we are chiefly indebted to the persevering hybridising efforts of Mr. JACKMAN himself. The Clematis exhibition of last year, of which we gave an illustration at p. 365, vol. ii., was, we may conclude, appreciated by the fashionable world, and we may expect that its repetition will render it still more popular amongst the upper ten thousand.

—— The old Oak-leaved form of the PELARGONIUM called ROLLISSON'S UNIQUE is a fine decorative plant for winter, blooming freely from large, well-matured plants, while the flowers, being of a bright crimson hue, and produced in large trusses, are invaluable as cut flowers. We recently saw some large plants, 4 feet, at least, in height, and from 2 to 3 feet in diameter. The plants are cut-in hard about May or June, and potted as soon as they have made shoots an inch long, a rich compost being used, and placed in the shade for a time till fresh roots are formed, and then placed in the full sun till removed to the greenhouse in September. Indeed, such plants bloom nearly all the year round, the well-ripened wood putting forth short shoots that flower with great profusion. Unfortunately, this fine old decorative plant appears to be in some danger of dropping out of cultivation, for it is rarely met with now.

—— The forty-eighth annual general meeting of the proprietors of the MANCHESTER BOTANICAL AND HORTICULTURAL SOCIETY will be held at the Town Hall, Manchester, on Monday next, for the purpose of receiving and considering the report of the retiring Council, together with a statement of the receipts and expenditure for the past year, for electing a Council for the ensuing year, and for transacting such other business as may be lawfully done at an annual meeting. From the balance-sheet, which is before us, we are sorry to learn that the Society's exhibitions held last year were not so successful, financially, as in previous years. The profit on ordinary expenditure was £223 12s. 10d. The National Exhibition held at Whitsuntide brought in a profit of £418 16s. 8d., against which we have to rank the following losses:—£21 4s. on the Musical *Fête*; £66 18s. 10d. on the Rhododendron show; £229 1s. 6d. on the Rose show; £16 13s. 6d. on the Tulip show; and £15 13s. on the floral meetings at the Town Hall. The Council states in their report:—

"It will be in the remembrance of the shareholders that, during the period of these exhibitions, the time was extended till 10 o'clock in the evening by the introduction of artificial light; and an increased expenditure was also contracted for newspaper advertising, placards, military bands, &c., in the hope that the evening receipts might prove favourable. The Council need not remind the shareholders how frequently their expectations have been disappointed by the weather, and this effort added only one more experience of the same kind. The exhibitions held in the Town Hall and at the gardens during the past year were of a very superior order, and however the circumstances referred to may have affected the influx of casual visitors and the income of the Society, yet, so far as the real and prominent purposes of exhibitions of this kind are concerned,—improvement in one of the most interesting, useful, and healthful of rural employments, and in the art which it is the special mission of the Society to foster,—there has been nothing to complain of."

—— At a meeting of the Liverpool Town Council held on Wednesday last it was resolved to accept with the best thanks of the Council, an offer made by Mr. R. CHOLMONDELEY, of Condover Hall, Shropshire, to give berths and free quarters on board a yacht which he is fitting out for a DREDGING AND NATURALISING EXPEDITION TO THE WEST INDIES. The Rev. H. H. HIGGINS and two of the Museum staff were selected as the representatives of the Council. The specimens they collect will be brought to Liverpool.

—— The sixth grand spring exhibition in connection with the BRISTOL, WEST OF ENGLAND AND SOUTH WALES CHRYSANTHEMUM, AUTUMNAL PLANT, SPRING FLOWER, AND FRUIT SHOW SOCIETY [Phœbus, what a title!], will be held in the Victoria Rooms, Clifton, on March 22 and 23.

ISOLA BELLA.

[WITH ILLUSTRATION ON P. 49.]

A GARDEN with such a pretty name as this attracts attention at once. It is, as many tourists know, one of a group of tiny islets in the Lago Maggiore—the larger of the lovely lakes which receive the waters from the melting snows of the Alps on their Italian slope. In the midst of exquisite surroundings, with the snowy range of the Simplon in full view, with a climate so soft that Palms and Agaves, Bamboos, Eucalyptus, Lemons, and other half tropical plants thrive in the open air, it is no wonder that guide-book writers plunge into ecstacies, that visitors give themselves up to Lotus-eating, and willingly fetter themselves with chains of Circe's weaving. Amid such scenery, and subject to such influences, note-taking becomes a bore—the writing out of one's notes a trouble, the saving of the post a matter of indifference; and yet amid all this loveliness, which appeals preeminently to the eye, there is much, very much that merits, nay demands, a more thorough investigation than mere scenery, however eye-entrancing, permits of. Were it otherwise one might as well sit in the stalls at Drury Lane and be content with the transformation scene. The horticultural reader will appre-

ciate this when he learns that the shores of this lovely lake, as also those of its neighbour, Como, are studded with hundreds of villa gardens—that within cannon-shot—how incongruous that sounds here!—are such gardens as those of Prince Troubetzkoi, alluded to by Prof. Koch in our columns for 1874, vol. i., of the Count Borromeo, of the Marquis de Casanova, Signor Franzosini, the remarkable nurseries of the Signori Rovelli, and—others, as the books say, too numerous to mention. Of some of these we may speak at another time. Our purpose now is with Isola Bella, a representation of which is shown in our illustration on p. 49. At a distance this merits all that enthusiastic guide-book writers say about it. See it at a distance, and it is fairy-land. Waves of perfume, of Lemon and Orange, of Myrtle, Eucalyptus, and Tuberose, are wafted from the island; so that, resting on the clear blue placid lake, the visitor might fancy himself bathing in exquisite light and delicious perfume.

A large portion of the illusion vanishes when the visitor sets foot on the island. A huge palace, part never finished—monstrously out of proportion to the island, is at one end, the garden at the other. Of the palace we will here say nothing, but of the garden with its cockney grottos, its tea-garden rockeries, its wretched impertinences of statues, its grotesque monstrosities of fountains, or whatever else they may be called—all green, slimy, and dilapidated—we may be permitted to speak. Now we have let off our spleen, let us see what there is to praise; how far are the guide-book writers justified in their heroics?—what reasonable grounds have they for calling up memories of Odysseus and of Calypso, of Tasso and Armida, of Moore and Lalla Rookh, and all the rest of them? First of all, it was an extraordinary feat of some former Count Borromeo to construct these gardens. Two centuries ago it was a barren, slaty rock, sticking up out of the lake. In 1670, terrace after terrace was constructed, rising tier upon tier. On these rocky ledges, with infinite labour and at great cost, soil was deposited. Flues, it is said, were constructed beneath some of them, foreshadowing the geothermal culture of modern times. Whether these are in operation now we cannot say, but we have our doubts on the subject.

The topmost terrace is surmounted with the biggest, ugliest monstrosity of stone and statuary that eye could light on. Perhaps it looked better when clean and in good repair—now it is a thing to rush away from and forget for ever, if possible. The proverb—*Ars celare artem*—is, indeed, completely set at nought here. What a relief it is to turn from this distressing abortion to the glorious mountains beyond, the peaceful lake beneath. How one breathes more freely when we look up at that noble Camphor tree—Laurus Camphora—perhaps the biggest in Europe, to the splendid Myrtle bushes and to the Lemon-covered terraces.

By the way, it is worth noting that the Lemon trees are grown against the walls here, and receive some slight protection in winter. Eucalyptus is quite at home here, making astonishing growth, as is its wont to do. Of Conifers Dacrydium cupressinum and Deodars are noteworthy for the size they attain. Camellias, of course, grow like Laurels. Magnolias form shady groves with their dense thick green leaves and scarlet cone-like fruits (October). Bamboos lend a charm which will be appreciated by any one who remembers their elegant habit and graceful foliage. But most surprising of all is perhaps the Artocarpus integrifolia, the "Jack," out-of-doors. That makes us think that the alleged subterranean flues are, after all, no myths, though we could learn nothing about them in reply to our inquiries. Imagine the rocks clothed with Agaves, Opuntias, and Mesembryanthemums, down to the water's edge, and you will have a fair idea of Isola Bella, in which Art has done so much to despoil Nature.

Isola Madre, the adjacent islet, is far more agreeable in the eye of the horticulturist. Few or none of the monstrosities which are so distressing on Isola Bella are to be seen here, while the vegetation is as rich and more varied. Here are the Lemons trained to wires like Peaches at home. Here are the Opuntias, Fourcroyas, and Agaves, the great Grevilleas, the odd Colletia bictoniensis, Arbutus Andrachne, and Sterculia platanifolia. Here are sweet-scented Acacias, gorgeous Erythrina Belangeri, trees—Heaths, Kalmias, Cork Oaks, and Liquidambars, Taxodium distichum, Cryptomeria, Araucaria brasiliensis, and Cupressus horizontalis, and, most elegant of all, C. himalaiensis. Edgings of Ophiopogon japonicum form a neat substitute for grass verges or Box edgings. Here, underneath a fine Grevillea, runs a ravine filled with fragrant Funckias; here is a bed of Colocasia with leaves 4 to 5 feet long, backed up by a grove of Camellias. Everywhere where a corner is to be filled up is the curious Tricyrtis hirta, which in England we never see out of a greenhouse. Much use is also made of the brilliant Cuphea eminens. A Eucalyptus five years planted has already a height of 40 feet! Mandevilla suaveolens, with its long pods, and Physianthus albens, also in fruit, attracted our attention, as also Lagerstrœmia indica, Chamærops humilis, Jubæa spectabilis, and a host of other fine things which we are accustomed to see under glass. The keeping is not first-rate, and there is little evidence of cultivation proper. Who would work in such a climate if they could help it? Still, for all that, no horticulturist should miss taking a run round Isola Madre if he have the opportunity—it is so small that he won't lose his breath, while he may without loss content himself with a glance at a distance at Isola Bella. Of course he will not follow our advice. Every one visits the last-named island, and many visit that and leave the other: let us hope these are Cookites or Yankee travellers, not gardeners. *The Rambler.*

THE VEGETATION OF NEW GUINEA.

FROM the interest that has recently been excited, and indeed is still prevalent, as to the comparatively unknown island of New Guinea, the following notes from an account in a Sydney paper by Mr. William Macleay, who recently superintended an expedition to New Guinea, will, no doubt, be acceptable to our readers. The expedition left Port Jackson on May 18 last, and consisted of a small company only, composed of thirty persons, including four zoological and three botanical collectors. The ship, named the *Chevert*, was fitted up chiefly with the object of making collections in all branches of natural history—animal, vegetable, and mineral—in the islands of Torres Straits and in New Guinea, places which had never been previously thoroughly examined. The Palm Islands are lofty and precipitous, apparently entirely of granite formation, yet the soil is good, and the vegetation of the richest tropical luxuriance. The roughness of the ground and the density of the vegetation oftered great bars to the rambles of the explorers; but, notwithstanding, large collections were made. Few aborigines were seen, and these were all men who had probably come over from Cleveland Bay. They are described as being short, thin, and dirty, without a rag of clothing of any kind. Their canoes are small, hollowed-out logs with an outrigger. At Cape Grenville the exploring party stayed five days. The vegetation of the country is described as being scanty, the lower hills clothed with coarse grass, dwarf Grevilleas, &c. The higher ranges are thinly clothed with Acacias, Banksias, and Pandanus; the declivities or gullies only are densely wooded, while near the water's edge the Mangrove, as usual, holds its sway. The natives were tolerably numerous, and were mostly well grown and apparently well fed. They knew a little English, could appreciate tobacco and biscuits, and, unlike most of their race, were willing to work well for their food.

On arriving at New Guinea, and before landing, the *Chevert* was visited by two canoes with about twelve men in each. They went on board the vessel with the utmost confidence, and though they could only previously have seen vessels of small size they did not testify much surprise. It was explained to them that this visit was a friendly one, and that the object was to see the country and to collect specimens of the animals and plants. When the officers of the vessel landed, to the number of about twenty-two, they were received at the village by the elder members of the tribe, seated in a circle on a large piece of new matting. Their mode of smoking seems to be the inhaling and swallowing from a thick piece of Bamboo a quantity of smoke from a bad quality of tobacco, which they grow themselves. They are described as being intensely ugly; both the men and women are very fond of personal ornaments. The chief and almost only weapons of offence are bows and arrows, but these are of a very formidable description. The bows are of Bamboo, very like those used by English archers, and strung in the same way, and the arrows are over 4 feet long, and can be used effectively at a distance of 120 yards. Like the woolly-haired natives of Fiji and the new Hebrides—of which they are probably a variety—these people use Kava (Piper methysticum). Captain Edwards saw some of the root with one of the chiefs, who informed him it was got some distance up the country, and that they were well acquainted with the use of it. They are great navigators, and go long distances in their canoes, which are of great size, and are made from the excavated trunks of large coral trees (Erythrina.) Their supply of animal food is chiefly from the pigs, which are very numerous both in the wild and tame states. There were no indications among them of cannibalism, though human skulls were not an uncommon ornament in their houses. The appearance of the country is the same everywhere. From where the ship lay, the coast-line of New Guinea, from Saiba Island on the west to Bristow Island on the east, a distance of 30 miles, the uniformity was perfect. In some places the Mangrove seemed to grow out into the sea; in others, as at Mohatta, there was a beach closely belted by Cocoa-nut Palms, and behind everywhere the same absolutely level mud flat, without the slightest apparent rise as far as the eye could reach, and all densely covered with trees of all kinds and sizes. At no place apparently was this interminable, wooded morass more than 3 or 4 feet above the sea or river. The driest spots have all been selected by the natives for their Banana and Taro plantations, but even these places have to be intersected every 3 or 4 feet by ditches, to keep the water off them. There they cultivate, besides Bananas, Taro, Yams, and Sweet Potatos, Crotons and other showy-leaved plants. The country also produces Cocoa-nuts, Sago, and Bread-fruit.

The Katow River at its mouth is 200 yards wide; it very soon, however, narrows to about 60 yards, and it was not more than 30 yards wide at the highest point reached by the expedition. For the first 2 miles the party passed through a dense forest of Mangroves, but beyond that the margin of the river was closely lined by a very beautiful Palm, which raised its huge frond-like leaves right from the surface of the water to a height of nearly 50 feet. Behind these there was the lofty and interminable forest, excepting where occasionally a break in the dark mass showed a Banana or Taro plantation. In one part of the river a large tree had fallen, which completely stopped the progress of the vessel. Cross-cut saws and axes were brought to bear upon it, but the obstruction remained immovable, and the boats were compelled to return. The natives, however, along the whole route exhibited the most perfect friendliness, in some places making large presents of Bananas, Cocoa-nuts, and Taro; in others crowding round the boats and offering to trade. Tobacco, tomahawks, knives, and bright-coloured handkerchiefs and prints are the articles most in demand amongst them.

Yule Island is about 6 miles long, picturesque and healthy-looking. The soil is rich, and the plantations of the natives are numerous. The appearance of this part of New Guinea is the very opposite of that of Katow. For a few miles from the coast there are in most places dense Mangrove swamps, intersected by salt-water creeks, and it is in these places where the population, which is dense, is mostly congregated; but beyond that there are low ranges of well-wooded open forest, bearing Gum and gigantic Coral trees.

Mr. Macleay winds up a very interesting account of the voyage as follows:—"It is only by penetrating the island from the head of the gulf or some point further west that its real character and conformation can be ascertained, and this, which would be a work of great difficulty, should, I think, be undertaken by the Imperial Government. An expedition of this kind, fitted with steam launches, and accompanied by scientific men, whose duty it would be to investigate the mineral resources of the country, and report upon the value of its vegetable productions, such as timber, gums, barks, spices, india-rubber, &c., could be associated with a surveying party for the survey of the south coast of the island, which is at present very incomplete. All this, I think, should precede annexation or settlement." *John R. Jackson, Kew.*

EUPATORIUM WEINMANNIANUM.

WE give a figure of this elegant greenhouse shrub (fig. 12), as some confusion exists as to its correct name. It has, indeed, been thought to be the same as E. odoratum, E. glandulosum, E. adenophorum, E. roseum, E. Morrisii, and E. glabrum, all of which names do not properly apply to our present plant. E. Weinmannianum was first described by Dr. Regel

in 1857, and is figured in his *Gartenflora*, 1867, tab. 555, and again in Saunders' *Refugium*, t. 155. The figure we give will enable gardeners to recognise it, especially when we add that the leaves are quite destitute of hairs. The plant is a native of Brazil.

It is a useful greenhouse plant at this time of year for cutting from, as its flowers are elegant and fragrant. The reader is referred to an article of Mr. Sheppard's on the cultivation of this plant in our number for December 18, 1875, p. 784.

THE SILPHION PLANT.

IN a former volume (vol. ii., 1874, pp. 646 and 743) we gave the substance of Dr. Ascherson's sketch of the vegetation of the Libyan Desert, and at p. 486 of the same volume will be found an abstract of an article on the Silphion plant, by Dr. Laval. We quote these references because Cyrenaica and the Silphion plant are there associated, and because, with only a modern map for consultation, it is not easy to determine exactly in what part of North Africa this country lies. The ancient Cyrenaica now forms the eastern part of the State of Tripoli, and is bounded on the south by the Libyan Desert. Although situated on the shores of the Mediterranean, and only so short a distance from the centre of civilisation, comparatively little is known of this formerly important and flourishing Greek colony. True, the principal nations have established consulates in some of the chief ports, and something like law and order prevail in and about the towns, but it is otherwise in the more remote parts. Moreover, it does not bear the reputation of a healthy country. Visitations of the plague are not infrequent, it is stated; and we regret to add that the Dr. Laval above mentioned fell a victim to it on his return thither to continue his investigations and experiments respecting the medicinal virtues of the Silphion. It may be remembered that he entertained very sanguine views as to its beneficial action in pulmonary affections and other complaints, and he was very anxious to prove his convictions to the world. He maintained that the Silphion plant was specifically distinct from Thapsia garganica, a South European plant also sometimes used in medicine. However, as we observed in our abstract of the article referred to, it is impossible to distinguish the two plants from dried specimens. And now M. J. Daveau, who has lately traversed the country, states that there can be no question as to their identity. This traveller contributes a short notice of the vegetation of the districts through which he passed to a French journal, to which we are indebted for the following notes.

Passing by the account of his preparations, mode of travelling, &c., we may explain that he traversed the country from west to east; starting from Benghazi. Leaving Benghazi by the route for Dernah, and no more than a dozen miles from the former place, one is struck with the regular character of the vegetation. Different plants grow in well-defined zones, as in mountainous regions. Yet there are no changes in the nature of the soil, which is everywhere composed of a uniform ferruginous compact clay; but there is in the altitude, which gradually increases as we advance, though the rise is so slight as to be inappreciable. These zones are so marked that square leagues are covered with the same species of plant. Journeying in the direction of Dernah, the travellers crossed tracts of country successively covered with different species in the order they are given:—Kentrophyllum lanatum, Phlomis Samia, Satureia Thymbra, Seseli tortuosum, Passerina hirsuta, Marrubium Pseudo-Dictamnus, Artemisia pyromacha, Poterium spinosum, Juniperus Lycia and Pistacia Lentiscus. The last forms beautiful regular masses. Approaching Dernah the forests increase in density, and are richer in species. Here may be seen Phillyrea angustifolia, Olea europæa, Arbutus Unedo, Cistus, Rhamnus, and Ephedra altissima, climbing over the trees and revealing here and there among their foliage its slender branches covered with clusters of yellow flowers. Near the ruins of Lamloudèh there are large woods composed entirely of Arbutus Unedo. About midway between Benghazi and Dernah, after crossing the valley of Meraonah, the first plants of the celebrated Silphion were found.

A few particulars respecting this plant, of which so much has been written lately, may be useful. In the first place, there is no doubt whatever that Thapsia Silphium of Viviani is identical with T. garganica of Linnæus, as was proved on the spot, and in the herbarium at Paris, by a comparison of stem, leaves, fruits, &c. Dr. Laval, in the article already referred to, declared that the Silphion rarely, if ever, produced any ripe seed, as it was destroyed before mature by an insect, and further, that the plant increased and spread by means of its creeping roots. This, although not altogether impossible (*Ægopodium*, for instance), was not credited, and M. Daveau says that the root neither creeps nor forms offsets. It is not gregarious, the plants being usually scattered about singly at distances of 20 yards; and it frequently grows in the clefts of rocks. Respecting the fruit, it seems that in the neighbourhood of Dernah, at least, it it very generally attacked and destroyed by Pentaloma lineata, a hemipterous insect. But on ascending to a higher level, toward Guegueh on the ruins of Cyrene (now Grennah), this insect becomes much rarer, and perfect seed is produced in abundance; and there is, therefore, no doubt that it is propagated from seed. In traversing the Cyrenean plateau several other Umbellifers were seen, among them Smyrnium Olusatrum. This yields a resinous gum by exudation from incisions, which is a reputed remedy in cases of ophthalmia. It grows in various places, and was pointed out as the Asafœtida in the valley of Dernah. *W. B. H.*

FIG. 12.—EUPATORIUM WEINMANNIANUM.

Home Correspondence.

Chamæpeuce Casabonæ. — This half-hardy biennial, commonly known as the fish-bone Thistle, is a very useful and ornamental foliage plant for the adornment of the flower and subtropical garden, and although not so rare as some plants which are recommended for the decoration of greenhouse and conservatory, it is nevertheless quite equal, if not superior, to many in effectiveness for this purpose. As a table plant, too, it is not to be despised; from its graceful habit, and dark green glossy foliage, bordered on either side with spines symmetrically arranged with a midrib of a light green colour, it produces a striking and pleasing effect (especially by gaslight), which must be seen to be appreciated. It is easily raised from seed, and of quick growth. For table decoration a 48-sized pot is most suitable, for it is apt to grow too large if grown in a larger size. Chamæpeuce diacantha, or "the ivory Thistle," is likewise a very ornamental plant, but this kind is better adapted for outdoor decoration, being a stronger grower, and not so compact or graceful in its habit of growth. *E. Morgan, The Butts, Harrow-on-the-Hill, N.W.*

Glazed Copings for Peach Walls.—Many of your readers must have had more or less practical experience of permanent glazed copings for Peach

walls, &c., and I should be glad of a little information on the subject. Ordinary protection may, and will ward off several degrees of frost, and in many cases secure a crop, but with canvas and such protection as is often used I have found it in some cases not much advantage against a continuance of wet and cold. By adopting a permanent glazed coping, and with a little front protection, cold rains can be kept from injuring the blossom: but I am told by some that such copings are of no use, which I cannot understand. When asked for the causes of failure, one will say the top half of the trees is destroyed by red-spider through the atmosphere remaining too hot and dry; another says the trees are excited too early in the season, and consequently there is great danger of losing the crop by this means; another person has told me that his experience was, that the fruit from such walls were not of so fine a flavour as from walls without a coping. I am thinking of putting up one on one of our Peach walls, but before commencing to do so should be glad to hear through the *Gardeners' Chronicle* if others have experienced the same disadvantages. My idea was to have a 3 feet coping, 2 feet 6 inches of glass and a 6-inch wooden flap next the wall, for ventilation, and in warm showery weather it could be opened so as to give the trees and foliage the benefit of whatever rain might fall through this 6-inch opening. *J. Easter, The Gardens, Rathdaire, Monasterevan.*

The Weather in 1875.—The year which has just passed away has been one of considerable variation and peculiarity. Great mildness prevailed at the beginning, a cold late spring, a lukewarm summer, a drenching autumn, and at the close an almost unprecedented mildness, formed the chief features of 1875. January, with the exception of the first three days, was throughout at very mild month, the thermometer falling below freezing-point on five occasions only; the highest and lowest temperatures were 53° and 9°, the former on the 14th, the latter on the 1st. During February the thermometer was on twenty occasions below freezing, the severest frost being 11°. North and north-east winds prevailed, snow falling to the depth of several inches during the month. March witnessed continued change, severe frosts, high winds, snow and calms prevailing. The air during the greater part of the month was unusually dry. On eleven days N.N.E. winds prevailed. In April the thermometer was below freezing on six occasions, the highest and lowest temperatures being 71° and 25°—the former on the 20th, the latter on the 14th. Great dryness prevailed from the 12th to the end of the month. May throughout was very changeable, except its last week, having hail-storms and thunder, with high winds at times during the month. June was cold at night, hot during the day-time, and dry at the early part. The highest and lowest temperatures were 81° and 33°—the former on the 3d, the latter on the 1st. The alarming rainfall which fell during July commenced on the 14th, and continued until the 25th, with the exception of the 17th. The floods in various parts of the kingdom did a vast amount of damage to property, and also caused loss of life; hanging fruit crops that were ripe at the time were a great many of them spoilt. In August the weather throughout was fickle and changeable, rain falling on nine days in succession, accompanied with thunder, lightning, and heavy storms. September on the whole turned out a favourable month, the highest and lowest temperatures being 78° and 36°—the former on the 19th, the latter on the 10th. October witnessed continuous change—heavy rains, severe frosts, hail, thunder and lightning, high winds and calms prevailing; the highest and lowest temperatures were 63° and 25°—the former on the 4th, the latter on the 13th. November was very much like its predecessor except in the amount of rain; the highest and lowest temperatures were 55° and 26°—the former on the 18th, the latter on the 9th. From the 1st until the 8th of December we experienced very severe weather, with keen north-easterly winds, and snow on the ground to the depth of 8 inches. On the 11th the snow disappeared, and during the remainder of the month great calmness prevailed, and the year closed with weather more like April than December. The warmest day was August 16—84° in the shade; the coldest day was January 1—20° in the shade; the warmest night was August 17—75°; the coldest night was January 1—9°; the wettest day was July 20—with a fall of 2.21 inches. The rainfall for the year was 37.14, and the number of days on which rain fell, 142. *F. Clarke, Barleythorpe.*

Wellingtonia gigantea at Powderham Castle.—In taking the dimensions of the Wellingtonia gigantea growing in the pleasure grounds here I thought they might be interesting to you for publication. The dimensions taken early in August were as follows:—Height, 53 feet 3 inches; girth at 33 feet from ground, 2 feet 4½ inches; girth at 25 feet from ground, 3 feet 7½ inches; girth at 15 feet from ground, 5 feet; girth at 5 feet from ground, 8 feet 4 inches; girth close to the ground, 15 feet; circumference of branches at the base, 85 feet. To-day I have measured the height again, and find it 53 feet 11 inches, thus showing a growth of 8 inches since the first week in August. I do not remember ever reading of any exceeding this one in its dimensions. The tree is growing on the site of an old kitchen garden which was converted into pleasure grounds some thirty years ago, and possessing a good rich loamy soil. *D. C. Powell, Jan.* 4.

Are Sedums and Sempervivums Distinct Genera?—Mr. Frederick Stratton, F.L.S., is publishing in the pages of the *Hants Independent* descriptive notes of the "Wild Plants and Weeds of the Isle of Wight." Describing the House Leek he speaks of it as a Sedum; the Cobweb variety, S. arachnoideum, is also mentioned as a Sedum. Is this correct, and if so, why are these plants commonly classed as Sempervivums? I may add that Mr. Stratton's descriptions appear to be exceedingly truthful, and, being devoid of technicalities, are easy of comprehension by ordinarily intelligent readers. *A. D.* [We presume it is an oversight. House Leeks (Sempervivums) differ from Stonecrops (Sedums) not only in habit, but in the construction of the flower. The parts of the flower are much more numerous in Sempervivum than in Sedum. EDS.]

The Potato Disease.—Without wishing to establish a grievance, I feel that you have in your reference to this subject at p. 16 done me scant justice. You say, "It was reserved for Mr. Worthington Smith to show that this so-called new disease was in reality only a form of the old Potato disease," but it will be remembered that these were almost my own words when speaking on the subject at South Kensington, at a meeting prior to that at which Mr. Smith made public his famous discovery of the resting-spore. When Dr. Hogg was writing to the *Times* that the new Potato disease ought to be stamped out, and Mr. Berkeley publicly pronounced that it was a genuine new disease, without doubt it needed some courage on my part, as a non-scientist and a very humble individual, to publicly express my belief that there was no foundation for the supposition that it was a new disease, and to offer my reasons for holding that it was but a product of the old disease that had resulted from causes of an exceptional character, which I then pointed out. Mr. Smith's discovery fully bore out the non-scientific opinion I had previously given expression to—an opinion nothing that has since been made public has caused me to change. I do not think it is probable that we shall suffer from a similar early attack next summer, as all diseased Potatos have decayed or are thoroughly decaying, and it is not probable that tubers having in them the germs of disease as existed last year will be existent at planting time. When the disease manifests itself in a wet virulent form, as last year, it is tolerably certain to follow that none but thoroughly sound tubers will be available for seed the following spring. You refer to the comparative indifference with which practical Potato growers have received Mr. Smith's discovery. I think this indifference is due not so much to any lack of interest on their part in all that relates to the Potato disease, but rather to the fact that the value of the discovery has not been sufficiently demonstrated to them. It must not be forgotten that Mr. Smith found the resting-spores in the *pabulum* of diseased tubers, and not in or upon healthy, or what are termed sound sets. Under the most ordinary form of cultivation or storage we endeavour to destroy or put out of the way all diseased or decaying tubers, as, although we could not in a scientific manner demonstrate the actual nature of the living disease in them, yet we know that, whether containing active or resting germs or not, yet that they are a source of danger and a nuisance, and therefore they are treated as such. Sound healthy tubers, or apparently such, we retain with all possible care for successional planting, and our concern naturally is with these, and not with decayed ones. I hope I shall not be esteemed impertinent if I say that scientists should turn their attention to an examination of ordinary seed tubers, and endeavour to discover, if possible, any evidence of spores on these, and if not successful here, then to turn to the soil and the atmosphere, with the object of finding, if possible, from which direction the growing plant is attacked, and how by any diverse form of cultivation the disease may be cured or alleviated. So far, I think, it must be conceded that Mr. Smith's discovery has only a botanical value, but so soon as he enlarges it into the sphere of practical operation he will find it received by Potato growers with the most cordial thankfulness. *Alex. Dean.* [We are glad to give our correspondent the opportunity of vindicating his claim, which is a just one. As to the practical value of the discovery, surely that is as much or more for the cultivator to determine than for the scientist. The miner brings the ore to the surface, but he does not do the silversmith's work. Meanwhile it must be obvious to any one that the discovery of the sexes of the Potato fungus, and consequently of one at least of its modes of reproduction, is a discovery of no slight value. EDS.]

Names of Apples and Pears.—At p. 18 of the January number of the *Gardeners' Chronicle* there is an article on "Apple and Pear Names," referring to a notice of M. F. Jamin on the unintelligibility of some names, and Eyewood Pear is given as an instance. It is well known that the said Pear was raised by T. A. Knight, once President of the London Horticultural Society, and that Mr. Knight named the Pear Eyewood, after the residence of one of his friends, situate in the county of Herefordshire. I wish the orthography of all fruits was as plain and intelligible. As to the Linnæus Pippin—or, as some write it, Lineous—I think that the same reason that induced people to call the Bonne d'Ezée Pear by the pseudonym of Brockworth Park, or the Brown Beurré by the name of Benedictine, induced some one to honour the memory of Linnæus from the same motives—either ignorance or gain; and I could quote a hundred other examples. Had M. Jamin turned to that unique work, Leroy's *Dictionary of Pomology*, he would have found all the difficulty about the Linnæus Pippin solved (see p. 432, *et seq.*). I procured trees of the Linnæus Pippin from France, and the Seek-no-further from America, and soon found them to be the same. I was at first inclined to consider the Linnæus Pippin to be the same as yellow Belleflower, or Belle-fleur, to be more correct. *J. Scott, Merriott.*

Mistleto.—During a visit to Baden-Baden last year, M. Max Leichtlin took me for a drive to the Alt Schloss, and on the way we noticed immense quantities of Mistleto growing on the Fir trees, but what species of Fir I am not positive. I am, however, certain that it was not Spruce or Scotch—two species mentioned in Mr. Evershed's interesting paper. Perhaps M. Max Leichtlin, with his usual courtesy, will kindly inform your readers? *Fred. H.* [We have seen it on the Silver Fir (Picea pectinata) in Switzerland. EDS.]

Notices of Books.

British Popular Customs, Present and Past; *Illustrating the Social and Domestic Manners of the People: Arranged according to the Calendar of the Year.* By the Rev. T. F. Thiselton Dyer, M.A. Bell & Sons: London, 1876.

This handsome volume, appearing at a season when presents are generally given and received, seems, from its subject, especially appropriate to Christmas-tide. There is probably no season round which so many and so varied customs cluster as this present cheerful season of Christmas, extending as it does until "Twelfth Day," or "Old Christmas Day," as January 6, the feast of the Epiphany, is still called in some parts of the country. Mr. Thiselton Dyer—who must not be confounded with the well-known botanist so named—supports us in this opinion by the book now before us, about a sixth of which is devoted to the customs connected with these twelve days. The bringing together of so much information connected with a subject which would appear at first sight to be extremely limited, speaks much for the industry and research of the compiler of this volume; and all who are interested in our local or national customs will find in it a larger collection of them than has hitherto been brought together. We could have wished for a greater amount of original observations and suggestions as to the rise and foundation of some of the more remarkable of the customs collected by Mr. Thiselton Dyer, and especially for some reference to the occurrence of similar traditions in other countries—a point which becomes increasingly interesting as our knowledge of the social and home life of other nations extends; but this formed no part of the author's plan, which was "simply to collect together into a readable and condensed form accounts of customs which, if not already obsolete, are quickly becoming so." A more copious introduction of cross references, too, would, we think, have added to the usefulness of the book, the arrangement of which often necessitates the separation of similar customs—thus, for instance, the hunting of the wren in Ireland, which takes place about St. Stephen's Day, is noticed at p. 497, while the similar Welsh custom on "old Christmas Day" occurs on p. 35. More might well have been said as to the real or supposed origin of this custom, which still exists in full swing in many parts of Ireland, and is accounted for in various ways by different writers. Indeed, the chief fault we have to find with the book lies in the want of definite information as to the existence or non-existence of customs at the present day. It would be too much to expect any man to verify this

in all or even in most cases, but it would not be difficult to ascertain, for example, whether "the three vicars of Bampton" still give "beef and beer on the morning of St. Stephen's Day to those who choose to partake of it"; and the value of the book would have been much enhanced by the supplying of facts of this kind.

A few remarks on the account given by Mr. Thiselton Dyer of Christmas customs will form a seasonable notice of his book, and, at the same time, enable us to indicate one or two points on which further information might have been given. His mention of the tolling of the church bell at Dewsbury on Christmas Eve may be supplemented by the statement of a curate of that place (given in Helmore and Neale's *Christmas Carols*), to the effect that "no sooner has the church clock struck twelve (midnight) than the sexton begins to toll the tolls for one hour, and then begins to ring the number of years since the Christian era." Another Yorkshire custom, which obtains at Ackworth—that of suspending a sheaf of corn on Christmas Eve for the birds—might be paralleled by a reference to the same pretty custom as generally prevailing in Sweden and Norway. We cannot agree with Mr. Dyer regarding "Christmas-Boxes," as exclusively connected with St. Stephen's Day; that, indeed, is known as "Boxing Day," and is the day on which servants expect gratuities, but in the domestic circle Christmas Day itself is the occasion on which presents are exchanged. The term is hardly fully explained by Mr. Dyer; indeed, there are doubtless many to whom the statement that a veritable "box" was originally intended will be novel. Nares, however, says, "This was a box generally made of earthenware, with a slit in it through which the money given at Christmas was passed into the box. It was carried about by apprentices and others to receive gifts, which were hoarded up, and could only be obtained by breaking the box." This explains the allusion of George Withers in his poem of *Christmas*:—

"Our kitchen boy hath broke his box."

As well as Gay's lines—

"When time comes round a Christmas box they bear,
And one day makes them rich for all the year."

The increasing prominence which Christmas carols assume each year renders some reference more recent than one in the sixteenth century absolutely necessary. In one or two churches, perhaps more, the use of hymn books is suspended during Christmastide, carols being substituted, while the old custom of singing them after or during the service has been resuscitated with much spirit in many places. As to decorations, we do not think that any one with the slightest practical knowledge of the matter would include Rosemary among the "favourite plants for church decoration"; while, considering the importance of the Mistleto in our domestic festivities, it is at least strange that no allusion is made to the principal mode and object of its employment. Christmas cards, too, which have become so important a feature of late years, should have had a reference, and the performance of orchestral music under the walls of Windsor Castle early on Christmas morning is quite as worthy of note as many things included in the book.

Coming to a class of customs which, as being more or less connected with plants, is more appropriate to our pages, we find notes upon "Apple-bowling," "rush-strewing," and other matters which have from time to time been brought under the notice of our readers. The strewing of churches on certain days with Rushes, grass, hay, or (as at Farnborough in Kent) with Reeds, is shown to be much more general than might be supposed, even if in some of the instances quoted it should now, as is probable, be discontinued. With reference to the "St. Thomas' Onions," mentioned as having been used in love divinations, and as having been formerly cried under that name in the London Streets, it would appear from a note in Parkinson's *Paradisus* that this name is a corruption of "St. Omer's Onions." May garlands, Hemp sowing, carling-Sunday, nut-crack night, Fig-Sunday, flowering Sunday, the Holly boy and the Ivy girl, Gospel trees, grass week, Palm Sunday, the Shamrock, and many other days and customs associated in name or in observance with plants or trees, find a place in Mr. Dyer's book, which contains more collected information upon these and the many and varied matters of which it treats than any other work with which we are acquainted. We have much pleasure in commending it to our readers, certain that whatever may be the class of subjects to which their inclination may lead them, they will find in this volume something bearing upon it which will give them information, and in not a few instances suggest to them the sources whence further material may be obtained.

Rambles and Adventures of our School Field Club. By G. Christopher Davies. King & Co. 8vo, pp. 284.

The title of this book gives a very good general idea of its contents. The locality is the town of Oswestry and its neighbourhood, the actors a number of schoolboys, who in their passion for adventure manage to get into all sorts of scrapes, and to pick up a variety of information in the process. In the course of holiday rambles boys have an opportunity for learning with their eyes and ears a vast amount of most varied information which most of them at any rate can never obtain in after life, but whose value is incalculable. The cultivation in this agreeable manner of the faculty of observation and comparison is, to say the least, as advantageous an exercise to the mind as gerund-grinding, and far more profitable to the body. Almost all boys are born naturalists, and it is left for thoughtless parents and obstinate pedagogues to ignore if not positively to oppose this wholesome curiosity on the part of their children and pupils. The author of the present volume appears to be quite alive to the value of a training in natural history pursuits, especially when self imposed, or taken up as an amusement and not as a task. If a boy obtains a fair general knowledge of the country within a mile or two of his home or his school, its conformation and natural history products, he has stored his mind with a number of facts and inferences which may possibly never be of direct benefit to him in after life, but which indirectly cannot fail to be of very great service to him whatever career he may eventually enter upon. As to the pleasure and excitement experienced in gaining this sort of information, what is there in the world to excel it among the delights of boy-life—what in which there is so little alloy—what in which the retrospect is so wholly satisfactory? The botanical section of the present volume hardly gets sufficiently extended treatment; indeed, with the exception of a brief allusion to the so-called moss balls of Ellesmere, there is but little reference to wild plants, and the delights of searching for them. By the way, similar moss balls must surely exist in other lakes besides the one at Ellesmere, and yet they apparently escape observation.

Some reference to the physical geography of the country and to its archæology might also readily have been expected, and would have greatly added to the interest of the book. As it is, however, many a boy will eagerly peruse the accounts here given of birds'-nesting, fishing, and butterfly catching, and will sympathise with the hopes and fears of the young naturalists. Doubtless the book will find its way into every school library.

Agricultural Holdings Act; *with Exposition, Appendix, Notes, and Forms*. By H. Winch, Esq. Weedon & Co., Bedford Street.

In a recent issue we had occasion to mention a work on the same subject, and now another candidate for public favour is before us. In this the text of the Act itself is given at the end of the volume, while the earlier portion is devoted to an analysis and commentary of its several sections. It remains to be seen how the Act will work in practice. Certainly as detailed and commented on in the works devoted to its exposition, it appears likely to cause a good deal of bewilderment alike to those who have to administer the law, and to those who have to abide by it.

—— Cassell's *Dictionary of Cookery* may be safely recommended to our readers so far as it has gone. It consists of a series of recipes arranged in alphabetical order, and which appear clearly stated, very varied, and not, as is so often the case with similar productions, extravagant. The introduction on the principles of cookery should be read and thoroughly digested by every one who aspires to cook, even though it be only a chop and potato.—The same publishers send us some parts of an *Illustrated History of India*, which will be of interest at the present juncture to many who previously never troubled their heads about our great Dependency. How wonderfully attractive the history of that country is may be judged from the splendid essays of Macaulay on Clive and Warren Hastings, to which the compilers of the present work seem to be under considerable obligations. The execution and printing of the woodcuts are open to great improvement.

—— Beeton's *Dictionary of Universal Information*, the first part of which (or of a re-issue?) is before us, may be recommended to those desirous of having a great deal in a small compass and at small cost. It makes no pretensions to the exhaustiveness and authority of larger books, but will be serviceable to many to whom more important works are not accessible.

—— The *Academy* states that Mr. Robert Roberts, of Boston, Lincolnshire, has printed, under the title of *Posies of Roses*, a small gathering from the poets—Chaucer to Thackeray—illustrating the moral of Herrick's "Gather ye rosebuds while ye may," and Spenser's "Gather the Rose of Love while yet is time."

—— The *Journal of Industry*, which has entered on the third year of publication, has been enlarged, and is now a more complete monthly review of civil engineering, manufacturing processes, inventions, &c., the applied arts and sciences. Mr. Arthur Williams retains the editorship.

PUBLICATIONS RECEIVED.—The New Quarterly Magazine (Ward, Lock & Tyler)—The Journal of Botany (Ranken & Co.)—The Ladies Treasury, a Household Magazine of Literature, Education and Fashion (Bemrose & Sons)—The American Agriculturist (Orange Judd & Co., New York)—The Journal of the Central Horticultural Society of France—The Popular Science Review (Hardwicke)—The Revue Horticole—The Florist and Pomologist for January, 171, Fleet Street)—Science Gossip for January, (Hardwicke)—The Gardener for January (Blackwood & Co.)—The Belgique Horticole for November and December—The Gartenflora for November—Mercurius' Predicting Almanac for 1876 (E. W. Allen).—Fühling's Landwirthschaftliche Zeitung (Jubilee number); Berlin, Vorgst.—Forstliche Blätter (January); Berlin, Vorgst.—Le Bulletin Horticole; Huy, De Grace.—The Australian Churchman.

The Villa Garden.

TOWN GARDENING: OUTSIDE GARDENING.—Reverting again to the matter of an appropriate fencing to the exterior window sill, we have seen some formed of ornamental cast iron work, as a matter of course permanent in character, and painted green. It is not difficult in providing this kind of fencing to give a larger width of standing room for pots than that furnished by the window-sill, only it should not protrude too far so as to become unsightly. Elaborate arrangements of this character can be provided without difficulty, but what we have now more especially to deal with is arrangements of the most elementary character, suited for those who reside in crowded districts, where space and means are alike considerations of importance, and where elaborate effects would be altogether out of place.

It is in the courts, alleys, and side streets of the city of London—and in fact in any other part surrounding the city—rather than in the main thoroughfares, that plants are grown, and here, many spots other than windows are utilised for the purpose. Thus the tops of walls, leads, the flatter parts of the roof, plant stages of homely construction set up in odd corners, areas, balconies, &c., are all called into requisition during the period of the year when plants can be exposed in the open air. Those who work the flower shows held in the City, at Westminster, and other places, are brought into contact with many contrivances and attempts, allied to much ingenuity and no small amount of skill. They are highly satisfactory and extremely interesting examples of gardening under the gravest difficulties. Would that some gold medals could be available for distribution here and there, for gardening of this character involves much broader social issues than the mere growing of huge specimen plants for challenge cups.

There is more or less exposure of the plants under almost all circumstances—the danger of being blown over by the wind being one of the chief to be contended with. In the case of plants on the top of a wall, we have seen a rudely-constructed kind of fence put up on one side—as a general rule on that least exposed to view—and to this the plants are fastened in the way that best suggests itself to the cultivator. As a matter of course, there are degrees of elegance or taste in setting up these contrivances, but let

any one who takes an interest in the illustrations of city and town gardening to be so plentifully sought out, use ordinary powers of observation, and he will not fail to notice the gradual spread of a higher taste even in setting up the rudest contrivances. This is akin to what is noticed at the City and Westminster exhibitions, namely, that practice, and the desire to emulate, surely results in a decided improvement in the appearance of the plants produced from year to year.

We have also seen plants growing on exposed walls, where all fences to tie the plants to are dispensed with, and have given place to boxes in which the plants are stood, and provided with a low wooden framework of a similar character. There is one advantage about this arrangement: that plunging material can be placed about the pots, which, as before stated, serves to keep them cool and moist in hot weather. Another arrangement consisted in fastening to the walls pieces of flat iron hoop in an upright direction and some 12 inches in height from the top of the wall. Towards the top, these pieces of hoop are twisted, and so turned half-way round, and this part is drilled with holes capable of holding a piece of stout twine or cord. After the plants are placed in position the pieces of hoop are bent inwards, and come above the level of the rims of the pots; and when the cord is passed through at the requisite height the pots are kept fairly secure. When plants are stood on leads the best way to keep them securely in an upright position is to plunge them in cocoa-nut fibre—an article which can be had without trouble, and at a very moderate cost. We cannot go into an examination of all the positions assigned to plants, but these we have instanced, and the hints given in connection therewith may serve to indicate what can be applied to other arrangements.

The framing of windows with Ivy or any other suitable hardy evergreen plant is a practice much to be commended, as it affords something green and pleasant to look upon all the year through. We are treating now of a permanent framing, and for that purpose it is difficult to suggest anything better than the Ivy. It does well in most positions, it is always green, and it bears exposure to the severest test of weather. Intense frost and glaring sun alike might almost as well attempt to wreak their worst on the wall it covers as on that

"Rare old plant, the Ivy green,"

if the necessary matter of moisture be attended to during the summer. A light framework of wire or wood can be made to line the sides of the window, and arch it over; the most durable and the cheapest in the end would be the wire frame. It is necessary to have a box or something of the kind to plant the Ivy in on both sides, and the ordinary garden-pot can be used for the same purpose. Ample root-room is indispensable, at the same time the Ivy will flourish when its roots are in a confined space if the soil about them be kept moist. The value of the Ivy would consist in the preservation of its green leaves, and it is obvious that drought and poverty at the roots would cause the leaves to turn yellow and fall away.

The effectiveness of the Ivy frame might be heightened by blending with the green form one of the vigorous growing variegated types, and this combination would yield a pleasant contrast. During the winter but little water would be required, but during the summer [considerable attention of this sort would be necessary.

And during the summer it would not perhaps be very difficult—in somewhat favourable positions at least—to have an additional framework inside the Ivy, formed of some running flowering plant, such as Tropæolum aduncum (Canary Creeper), Convolvulus major, Scarlet and other Sweet Peas, and Maurandya Barclayana; even old plants of bedding Geraniums and Fuchsias, if they were pretty well pot bound and had well-ripened branches, would be certain to produce plenty of flowers; and even if the added floral effect did not last long, it would be something gained to have had it for a short period. It is our opinion that much more can be done in this way during summer than is generally imagined.

Obituary.

DIED, on Christmas Day, at the Red Lodge Nursery, Southampton, WILLIAM FREDERICK, the eldest son of Mr. W. H. ROGERS, J.P., the well-known nurseryman. The deceased was in his twenty-ninth year, was a young man of great promise, and had for several years taken an active part in the management of the business. His early death, after a short illness, has brought great grief into the midst of a loving home circle.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, JAN. 5, 1876.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Dec. 30	In. 30.11	In. +0.21	° 48.6	° 41.4	° 7.2	° 44.9	° +7.6	° 39.0	80	WSW : S.W.	In. 0.00
31	29.94	+0.05	48.8	39.4	6.4	42.4	+5.2	37.0	82	S.S.W. : S.W.	0.00
Jan. 1	29.86	+0.04	47.8	35.5	12.3	41.7	+4.5	39.2	92	S. : S.W.	0.18
2	29.93	+0.14	51.0	31.8	19.2	40.5	+3.6	39.4	96	N.E. : E.	0.08
3	29.98	+0.21	54.6	46.0	8.6	50.8	+14.1	48.3	94	W. : WNW	0.05
4	30.13	+0.37	47.5	38.2	9.3	43.0	+6.4	40.8	92	SW. : S. : S.S.E.	0.00
5	30.22	+0.47	38.4	29.7	8.7	33.6	−2.9	31.1	89	S.E. : E.	0.00
Mean	30.02	+0.21	47.7	37.4	10.3	42.4	+5.5	39.3	89	variable	sum 0.31

Dec. 30.—A fine day, but generally cloudy.
— 31.—A dull cloudy day. Fine from 1 to 2.30 P.M.
Jan. 1.—A dull day, occasional rain after 11.30 A.M.
— 2.—Dull and cloudy throughout. Slight rain at 1 P.M., and occasionally till midnight. The maximum temperature at 3 P.M. was 40°.8, but gradually rose to 51° by midnight.
— 3.—Overcast and dull till evening, fine and clear after. Very mild and warm.
— 4.—Overcast, dull, foggy and misty throughout.
— 5.—A fine day, partially cloudy. Cold.

—— During the week ending Saturday, January 1, 1876, in the vicinity of the metropolis the reading of the barometer at the level of the sea increased from 30.46 inches at the beginning of the week to 30.47 inches by the morning of the 26th, decreased to 30.43 inches by the evening of the same day; increased to 30.54 inches by the morning of December 28, decreased to 29.99 inches by about noon on January 1, and was 30.11 inches at the end of the week. The mean reading of the week was 30.32 inches, being 0.36 inch above that of the preceding week, and 0.26 inch above the average.

The highest temperatures of the air observed by day varied from 48½° on December 30 to 45¾° on the 31st; the mean value for the week was 46¾°. The lowest temperatures of the air observed by night ranged between 42¾° on December 27 and 35½° on January 1; the mean value was 40¼°. The mean daily range of temperature in the week was 6½°, the greatest range in the day being 12½° on January 1, and the least 3½°, on December 27. The mean daily temperatures of the air were as follows:—December 26, 43°.4; 27th, 44°.3; 28th, 44°.1; 29th, 44°.2; 30th, 44°.9; 31st, 42°.4; January 1, 41°.7; and the departures in excess of their averages were—5°.6, 6°.7, 6°.6, 6°.8, 7°.6, 5°.2, 4°.5. The mean temperature of the air for the week was 43°.6, being 6°.1 above the average of sixty years' observations.

The highest readings of a thermometer, with blackened bulb in vacuo placed in sun's rays, was 66° on December 26. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, was 27° on January 1; the mean for the several low readings was 37°.

The direction of the wind was W.S.W., and its strength gentle. The weather during the week was dull and cloudy, but very mild.

Rain fell on Saturday, January 1, to the amount of 0.18 inch. Slight fog prevailed on December 26 and 27.

In England the highest temperature of the air observed day by day was at Sheffield, 55½°; at Nottingham the highest temperature in the week was 47°; the mean value from all stations was 50°. The lowest temperature of the air observed night by night was at Liverpool, 29¾°; at Truro, Bradford, and Leeds the lowest temperature in the week was 40°; the general average value from all stations was 35¾°. The range of temperature in the week was the largest at Liverpool, 21½°, and the smallest at Bradford, 9½°; the mean range from all stations was 14¼°. The mean of the seven high day temperatures was the greatest at Truro and Sheffield, both 49¼°, and the least at Leicester, 45°; the general average from all stations was 47°. The mean of the seven low night temperatures was the largest at Truro and Bradford, both 42½°, and the smallest at Leicester, 38°; the mean from all stations was 40°. The mean daily range of temperature in the week was the greatest at Sheffield, 10°, and the least at Bradford, 5¼°; the mean daily range from all stations was 7°.

The mean temperature of the air from all stations was 43½°, being 17½° higher than the value for the corresponding week in 1875. The highest occurred at Truro, 45½°, and the lowest at Leicester, 41¼°.

The amounts of rain measured during the week at the several stations varied from seven-tenths of an inch at Wolverhampton to five-hundredths of an inch at Leeds; the average fall over the country was a quarter of an inch.

The weather during the week was generally dull and cloudy.

Snow fell at Wolverhampton and Birmingham on December 31 and January 1.

In Scotland the highest temperatures of the air varied from 51½° at Leith to 50° at Glasgow and Dundee. The mean from all stations was 50¾°. The lowest temperatures of the air ranged between 29½° at Aberdeen and 37½° at Leith, the mean value being 34¾°. The mean range of temperature in the week was 16°. The mean temperature of the air for the week from all stations was 44¼°, being 17½° higher than the value for the corresponding week in 1875. The highest happened at Leith, 45½°, and the lowest at Aberdeen, 42°. Rain fell at Greenock to the amount of 3½ inches, at Glasgow 1¼ inch was recorded, and at Dundee and Aberdeen one-tenth of an inch only was measured. The average fall over the country was 1 inch.

At Dublin the highest temperature in the week was 54°, the lowest 25½°, the mean 45, and the fall of rain 0.22 inch.

Law Notes.

NOT IN ACCORDANCE WITH SAMPLE.—*Hammond* v. *Cooper*.—This was an action brought in the City of London Court on the 5th inst. to recover the sum of £6 odd, being the value of sundry sacks of Potatos sold by the plaintiff to the defendant. Mr. Weatherfield appeared as solicitor for the plaintiff, and Mr. Seale for the defence. Mr. Hammond being called, said that the defendant waited upon him at Blackheath and ordered him to send twelve sacks of Potatos from a sample he showed the defendant, and which Potatos he, the plaintiff, had himself grown. The Potatos were sent in due course, and the plaintiff had heard of no complaint until he had applied to the defendant for payment, when he was told the goods were not saleable, and was requested to fetch them back, which the plaintiff refused to do—hence the present action. This being the plaintiff's case, Mr. Seale, on the part of the defence, urged that the Potatos were not in accordance with sample, and would call the defendant to prove that his instructions were correct. The defendant being called, said he was a salesman in the City; he did not deny ordering the goods, but they were not up to sample: he supplied many hotels and restaurants in the City, and they were wholly unsuited to his class of customers.

In answer to the learned Judge, the defendant did not consider it was his duty to return them after the plaintiff had been told to take them away; they were in readiness to be sent for. In cross-examination the defendant said he had the Potatos a month or more before he complained to the plaintiff. After Mr. Seale had addressed the Court, the learned Judge said it was obviously the duty of the defendant to have at once complained of the state of things to the plaintiff, and to have instantly returned the Potatos, but instead of doing this he had kept them for more than a month, and expected (which was very absurd) that the plaintiff should send from Blackheath to London for them. Under these circumstances there would be judgment in favour of the plaintiff for the amount claimed, with costs.

Enquiries.

He that questioneth much shall learn much.—BACON.

90. CHILIAN BEET.—Will Chilian Beet stand good next year if taken up and kept from frost, and planted out again in spring? *T. J.*

Answers to Correspondents.

FLOWERING OF THE CHESTNUT TREE (Qy. 89, p. 24); I have often seen Chestnut trees in flower in May and June, in the counties of Durham, Northumberland, and Derbyshire. *M. F.*

ARRANGEMENT OF HERBARIUM: *Enquirer.* Apply to Mr. Harris, The Herbarium, Royal Gardens, Kew.

BOOKS: *M. F.* We know of no book on the Clematis,

by Bateman. Jackman and Moore's volume on *The Clematis as a Garden Flower* can be had for a few shillings. Apply to Mr. Jackman, Woking.

GOURD SOUP: *Cottager.* To make first-rate Gourd soup take Carrots, Turnips, Celery, and Onions; peel them and make them fit for use. Cut them to pieces, and fill a good sized basin. Empty the basin and fill it with water, in which boil the pieces until no goodness is left in the vegetables. Cleanse the vegetables through a sieve. Fill the same basin with pieces of Gourd, and boil them in water until they pass through a sieve. Then mix the first and second boiling together, and season with pepper, salt and sugar. If not thick enough add butter and flour. If milk is used with the Gourd, the soup will be all the better. It is necessary to boil the soup for at least an hour after the ingredients are mixed together.

GREENHEART TREE: *S.* Mr. Laslett, in his *Timber and Timber Trees*, says that this is an exceedingly valuable tree, yielding timber of perfectly straight growth, of from 24 to 50 feet in length, and 12 to 24 inches square. Its botanical name is Nectandra Rodiæi; and is a native of Guiana in the north-eastern portion of South America.

HOT-WATER PIPES: *R. C.* They should be kept near the front, and laid side by side, not placed above each other. If the border is outside, the Vines may be planted between the pipes and the wall.

LEAVES COMING TO LIFE AGAIN: *Doris.* Yes; such an instance is recorded in our volume for 1841. The whole of the leaves of a Bay tree appeared in spring to be brown and apparently dead, from the action of frost. As the spring advanced many of these leaves fell off, and the branches gradually acquired new leaves, while many of the brown and to all appearance dead leaves gradually recovered their green colour, and in some cases were completely restored to life!

NAMES OF PLANTS: *E. Preston.* Epidendrum ciliare. —*Ewing & Co.* Abies Morinda. *A. M.*

NURSERYMEN: *J. Thomas.* We do not undertake to give such addresses. Consult our advertising columns, or the *Horticultural Directory.*

POINSETTIA: *W. G.* The bracts, strictly speaking, are not part of the flower. See p. 42; pulcherrima is pronounced as though written pulkerrima. It means "most beautiful."

SECURING A NEWLY PLANTED TREE: *D. W. W.* One of the best plans for securing a newly planted

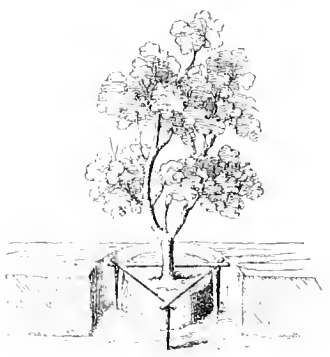

FIG. 13.

tree is the one illustrated in the accompanying woodcut, fig. 13. Drive three sharp-pointed stakes, from 3 to 3½ feet long each, into the ground in a triangular position, and then lay over the ball three rough pieces of plank, of sufficient length to meet each other above the stakes, to which they must be made fast with nails, &c.

SLOES AND RHODODENDRONS: *S. R.* 1, Sloes may be sown the same year, but are better treated the same as Haws; 2, Rhododendron seed may be kept for three years.

☞ FOREIGN SUBSCRIBERS sending Post Office Orders, and which are to be paid at the post-office, King Street, Covent Garden, London, are requested to be good enough to write to the Publisher, at the office of this paper, 41, Wellington Street, Covent Garden, at the same time, to inform him of the fact.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "Editors," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. *Letters relating to Advertisements, or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

CATALOGUES RECEIVED.—Messrs. Waite, Burnell, Huggins & Co. (79, Southwark Street, London, S.E., and 32, Rue Sery, Havre, France), Wholesale Price Current of Seeds, &c.; also Wholesale Catalogue of Gladioli, Lilies, &c.—Mr. W. E. Rendle (3, Westminster Chambers, Victoria Street, London, S.W.), Catalogue of Patent Plant Houses, Conservatories, Plant Protectors, &c.—Messrs. J. C. Wheeler & Sons (59, Mark Lane, London, E.C., and Northgate Street, Gloucester), Illustrated "Little Book," or Short Select Seed List for 1876.—Messrs. J. & F. Howard (Bedford, and 4, Cheapside, London, E.C.), Illustrated Catalogue of Agricultural Implements, Steam Cultivating Machinery, &c.—Messrs. Dickson, Brown & Tait (43 and 45, Corporation Street, Manchester), Catalogue of Vegetable and Flower Seeds.—J. Vick (Rochester, New York), Floral Guide and General Catalogue for 1876.—Mr. P. T. Rodger (Shipquay Street, Londonderry, Descriptive Catalogue of Select Kitchen Garden, Flower, and Farm Seeds, Manures, &c.—Mr. J. Cattell's (Westerham, Kent), Spring Catalogue of Kitchen Garden, Floricultural, and Agricultural Seeds, &c.—Mr. R. Buist, Sen. (Sixty-seventh Street and Darby Road, Philadelphia), Select Catalogue of Greenhouse, Hothouse, and Hardy Plants, Bulbs, &c.—Messrs. Hooper & Co. (Covent Garden, London, W.C.), Gardening Guide and General Catalogue for 1876.—Robertson & Galloway (157, Ingram Street, Glasgow), Descriptive Seed Catalogue and Amateur's Pocket Guide to the Kitchen and Flower Garden.—Mr. B. S. Williams (Victoria and Paradise Nurseries, Upper Holloway, London, N.), Descriptive Catalogue of Flower, Vegetable, and Agricultural Seeds, Horticultural Implements, &c.—Messrs. W. Drummond & Sons (Stirling, N.B.), Catalogue of Vegetable and Flower Seeds, &c.—Messrs. Barr & Sugden (12, King Street, Covent Garden, London, W.C.), Descriptive Spring Catalogue of Choice Seeds for Flower and Kitchen Garden, &c.—Messrs. Smith & Simon (36 and 58, Howard Street, St. Enoch Square, Glasgow), Cultural Guide and Descriptive Seed Catalogue, &c.—Messrs. Hender & Sons (Bedford Nursery, Plymouth), Illustrated Catalogue of Vegetable, Flower, and Agricultural Seeds, &c.

COMMUNICATIONS RECEIVED.—G. S.—H. G. S.—H. S. J. L. P. P.—E. M.—W. H.—C. B.—A. Boyle.—W. Farr.—J. B. K. (thanks; next week).—R. T. W. Bishop.—P. W.—A. De C. M. C.—J. R. J.

*** IMPORTANT NOTICE.—*The* AGRICULTURAL GAZETTE *is now* PUBLISHED *on* MONDAYS, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, January 6.

Business still keeps quiet for rough goods, but better class fruits meet a ready sale. The market is well supplied with good samples of Alicante and Lady Downe's Grapes, Black Hamburghs and Muscats being nearly over. Pears consist of Glou Morçeau, Jean de Witte, Bergamotte d'Esperen and Ne plus Meuris, and a fair sprinkling of Easter Beurré—the last-named variety coming principally from the Continent. No alteration in Kent Cobs. *Jas. Webber, Wholesale Apple Market.*

PLANTS IN POTS.

	s. d.	s. d.
Azaleas, per doz.	42 0	63 0
Begonias, per doz.	6 0	12 0
Bouvardias, do.	12 0	18 0
Cyclamen, do.	12 0	24 0
Cyperus, do.	6 0	12 0
Dracæna terminalis	30 0	60 0
— viridis, per doz.	18 0	24 0
Epiphyllums, do.	18 0	42 0
Euphorbia jacquiniæfolia, per doz.	9 0	18 0
Ficus elastica	2 0	15 0
Heaths, in var., doz	12 0	30 0
Hyacinths, per doz.	12 0	18 0
Hyacinths, Rom. do.	12 0	30 0
Mignonette, do.	6 0	9 0
Myrtles, do.	3 0	9 0
Pelargoniums, scarlet, per doz.	6 0	9 0
Poinsettias, per doz.	15 0	24 0
Primula sinensis, do.	6 0	12 0
Solanums, do.	6 0	24 0
Tulips, do.	9 0	18 0
Veronica, do.	4 0	12 0

CUT FLOWERS.

	s. d.	s. d.
Azaleas, 12 sprays	1 6	3 0
Camellias	4 0	12 0
Carnations, 12 blooms	2 0	4 0
Cyclamen, 12 blooms	0 3	0 6
Epiphyllum, p. doz.	1 0	3 0
Eucharis, per doz.	6 0	18 0
Euphorbia, 12 spr.	4 0	9 0
Gardenia, per doz.	12 0	18 0
Heliotropes, 12 spr.	0 6	1 0
Mignonette, 12 bun.	6 0	9 0
Narcissus, per dozen	3 0	6 0
Pelargoniums, 12 spr.	1 6	3 0
Zonal do.	1 0	2 0
Poinsettia, per doz.	4 0	12 0
Primula, dbl., p. bun.	1 0	1 6
Roman Hyacinths, 12 sprays	3 0	6 0
Roses, indoor, p. doz.	3 0	9 0
Spiræa, 12 sprays	2 0	4 0
Stephanotis, 12 sprays	6 0	12 0
Tuberoses, per doz.	4 0	9 0
Violets, 12 bunches	3 0	6 0

FRUIT.

	s. d.	s. d.
Apples, per ½-sieve	1 0	2 6
Cobs and Filbts., lb.	0 0	0 9
Grapes, per lb.	1 6	6 0
Lemons, per 100	6 0	10 0
Melons, each	2 0	4 0
Oranges, per 100	6 0	12 0
Pears, per doz.	1 6	6 0
Pine-apples, p. lb.	0 0	5 0

VEGETABLES.

	s. d.	s. d.
Artichokes, per doz.	4 0	..
— Jerusalem, p. lb.	0 3	..
Asparagus (English), per bundle	8 0	10 0
Beans, French, p. 100	2 0	3 0
Beet, per doz.	1 0	2 0
Brussels Sprouts, lb.	0 4	..
Cabbages per doz.	1 0	2 0
Carrots, per bunch	0 6	..
Cauliflowers, p. doz.	2 0	4 0
Celery, per bundle	1 0	2 0
Cucumbers, each	2 0	3 6
Endive, per doz.	1 0	2 0
— Batavian, p. doz.	2 0	3 0
Herbs, per bunch	0 2	0 4
Horse Radish, p. bun.	3 0	5 0
Leeks, per bunch	0 2	0 4
Lettuces, per score	2 0	..
Mint, green, bunch	1 6	..
Mushrooms, per pott.	1 0	2 0
Onions, young, bun.	0 4	0 6
Parsley, per bunch	0 4	..
Peas, green, per lb.	1 6	..
Potatos (new), baskt.	1 0	..
— Sweet, per lb.	0 6	..
Radishes, per bunch	0 2	0 4
— Spanish, doz.	1 0	..
— French	0 6	..
Rhubarb, per bundle	1 3	1 6
Salsafy, per bundle	0 9	..
Seakale, per punnet	1 0	2 0
Shallots, per lb.	0 3	..
Tomatos, per doz.	1 0	2 0
Turnips, per bundle	0 4	..

Potatos—Rocks, £5; Regents, £7 to £8; Kidneys, £7 to £8 per ton.

SEEDS.

LONDON: *Jan.* 5.—Messrs. John Shaw & Sons write that the position of the agricultural seed trade remains as described last week. In Clovers there is a good business passing at full currencies. Of home-grown seed the supplies continue almost *nil*, while higher quotations are reported from both America and Germany. All descriptions of French seed are held with great firmness. For Trefoils there is a slightly improved demand. Alsike and white Clover are held on former terms. A good inquiry is shown for foreign Italian, which has resulted in a further advance in value. More attention is now given to Sainfoin. Advices from Konigsberg describe the stock of spring Tares as reduced to quite narrow limits; for the few in London remaining unsold, holders are asking more money. There is also some demand for winter Vetches. For Canary seed, the supply being still small, higher prices are asked. No great quantity is, however, being placed at present currencies. Hemp seed is in good demand at improved rates. Good black Rape seed is scarce.

CORN.

At Mark Lane on Monday trade was flat. English Wheat was rather cheaper, and only the better descriptions of foreign Wheat realised the full rates of last week. Choice Barley was worth as much money as before, but inferior decidedly lower. Malt was without material alteration. Swedish Oats were about *6d.* per quarter dearer than on Friday last, but some other sorts were rather dull. Maize was steady, and quietly dealt in. Beans and Peas were *1s.* per quarter lower. Flour was active and cheaper when pressed for sale.—On Wednesday English Wheat was irregular in price, but good foreign made the rates of Monday. Only the better descriptions of Barley could be moved without any decided sacrifice, and inferior malt was almost unsaleable. Oats were steady; Maize supported previous currencies; no further reduction took place in either Beans or Peas; and flour remained dull.—Average prices of corn for week ending January 1:—Wheat, 45*s.* 8*d.*; Barley, 34*s.* 8*d.*; Oats, 24*s.* 4*d.* For the corresponding week last year:—Wheat, 44*s.* 2*d.*; Barley, 41*s.* 6*d.*; Oats, 29*s.* 7*d.*

CATTLE.

At the Metropolitan Market on Monday the show of beasts was not large for the time of year; trade was, however, slow, yet prices were not much reduced on the average. There was a good supply of sheep, and a fair demand for them, in some instances the top price being exceeded. Choice calves were scarce and dear. Quotations:—Beasts, 4*s.* 8*d.* to 5*s.* 8*d.*; and 6*s.* to 6*s.* 6*d.* calves, 5*s.* to 7*s.*; sheep, 6*s.* to 6*s.* 8*d.* and 7*s.* to 7*s.* 6*d.*; pigs, 4*s.* 8*d.* to 6*s.*—On Thursday a good demand prevailed for beasts, and prices ruled fully up to those of Monday. There was a sharp competition for the short supply of sheep on offer—prices ranging between 5*s.* 6*d.* and 7*s.* 10*d.* Calves sold at enhanced figures.

HAY.

At Whitechapel on Tuesday there was a moderate supply of fodder, business in which, owing to the prevalence of a dense fog, was almost at a standstill. Prices were as before, prime Clover being quoted 100*s.* to 147*s.*; inferior ditto, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 135*s.*; inferior ditto, 55*s.* to 75*s.*; and straw, 35*s.* to 50*s.* per load. Thursday's figures were:—Clover, best, 117*s.* to 147*s.*; inferior, 80*s.* to 90*s.*; best hay, 115*s.* to 135*s.*; inferior, 60*s.* to 80*s.*; and straw, 30*s.* to 48*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 132*s.* to 140*s.*; inferior, 100*s.* to 114*s.*; superior Clover, 140*s.* to 150*s.*; inferior, 105*s.* to 128*s.*; and straw, 48*s.* to 52*s.* per load.

POTATOS.

Supplies are reported as increasing at the Borough and Spitalfields markets, but fine samples form only a small proportion, and first qualities consequently unhold their value, whilst all other grades are depressed 5*s.* to 10*s.* per ton. Tuesday's quotations were as follows:—Regents, best, 160*s.* to 180*s.*; secondary sorts, 100*s.* to 120*s.*; English rocks, none offering; Dutch rocks, 4*s.* to 4*s.* 6*d.* per bag; French ware, 60*s.* to 85*s.*; seedling, 100*s.* to 105*s.* per ton; Belgian, 4*s.* 6*d.* to 5*s.* per bag.—On Thursday French ware advanced to 75*s.* to 85*s.*, and seedlings gave way to 85*s.* to 90*s.*—The arrivals of foreign Potatos into London last week consisted of 45 tons 14,431 bags from Harlingen, 233 tons from Rouen, 15 sacks 621 bags from Boulogne, 800 bags from Brussels, 5240 bags from Antwerp, 200 bags from Rotterdam, 200 sacks from St. Nazaire, 83 tons from St. Valery, 1 package from Ostend, 1 basket from Amsterdam, 673 tons 1021 sacks from Dunkirk.

COALS.

The market on Monday was moderately supplied with house coals, which sold at last prices, in some cases at a slight reduction for "seconds." Wednesday's market was firmer, at an advance of 1*s.* in the price of house coals; Hartleys, however, were 6*d.* per ton lower. Quotations:—Bowers West Hartley, 18*s.* 9*d.*; Bebside West Hartley, 19*s.* 3*d.*; West Hartley, 19*s.* 3*d.*; Walls Ends—Hetton, 23*s.*; Hetton Lyons, 20*s.* 9*d.*; Lambton, 22*s.* 6*d.*; Hartlepool, 22*s.* 6*d.*; Kelloe, 21*s.*; East Hartlepool, 22*s.* 9*d.*

Notice to the Trade.

HOME SAVED SEEDS DIRECT FROM THE GROWER.

CHARLES SHARPE AND CO.'S Wholesale CATALOGUE of SEEDS is now ready, and will be forwarded post free on application.

AGRICULTURAL SEEDS.

CHARLES SHARPE & CO. have the choicest stocks of TURNIP, MANGELS, CARROTS, &c., carefully saved from selected stocks, and at the lowest prices consistent with good quality. CLOVERS and GRASSES, on market terms, samples and prices of which will be sent on application.

KITCHEN GARDEN SEEDS.

Peas and Beans have been well secured, and, by careful hand-picking, the samples are made equal or superior to any sent out in the Trade. Brassicas, Lettuce, Radish, &c., are the purest selection of their respective kinds.

SEED POTATOS.

CHARLES SHARPE & CO., from their position in the midst of a great Potato-growing district, are in a position to offer Seed Potatos at very advantageous quotations. The new American Varieties can also be offered, fresh imported Seed, per Barrel or Ton, on the best terms. For prices see CHARLES SHARPE & Co.'s Special Descriptive LIST of Seed Potatos.

FLOWER SEEDS

of every description, at lowest rates.

CHARLES SHARPE AND CO., Seed Growers and Merchants, Sleaford.

To the Trade.—Surplus Nursery Stock.

JOHN PERKINS AND SON beg to offer the following:—

APPLES, Standards, fine, 50s. to 60s. per 100.
PLUMS, Standards, fine, 70s. per 100.
APRICOTS, Dwarf-trained, 24s. to 30s. per dozen.
NECTARINES, Dwarf trained, 24s. to 30s. per dozen.
CURRANTS, Black Naples, very fine, 76s. per 1000.
,, Victoria or Houghton Castle, 60s. per 1000.
GOOSEBERRIES, 10s. per 100.
ROSES, Standards, 10s. per dozen, 75s. per 100.
,, half-Standards, 8s. per dozen, 60s. per 100.
,, dwarf on Manetti, 25s. per 100.
BEECH, transplanted, 2 to 3 feet, 20s. per 1000.
HAZEL, transplanted, 2 to 3 feet, 20s. per 1000.
HORNBEAM, transplanted, 1½ to 2 feet, 18s. per 1000; 2 to 3 feet, 25s. per 1000
PRIVET, Evergreen, transplanted, very fine, 1½ to 2 feet, 15s. per 1000; 2 to 3 feet, 18s. per 1000; 3 to 4 feet, 20s. per 1000.
PINUS AUSTRIACA, extra transplanted, stout, and very fine, 2 to 3 feet, 15s. per 100.
WHITETHORN or QUICK, 2-yr. transplanted, 8s. per 1000; 3-yr. transplanted, 11s. per 1000; 4-yr. transplanted 15s. per 1000.
BLACKTHORN, extra fine, 1-yr., 1 to 2 feet, 5s. per 1000.
,, transplanted, fine, 1½ to 2 feet, 10s. per 1000; 2 to 3 feet, 12s. per 1000,

52, Market Square, Northampton.

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per truck.

BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, New Holland Plants, 17s. per ton. [ton.

BROWN and BLACK PEAT, for general purposes, 17s. per Delivered on rail at Blackwater (South-Eastern Railway), or Farnborough (South-Western Railway), by the truck-load. Sample sacks, 5s. 6d. each.

FRESH SPHAGNUM, 10s. 6d. per sack.

WALKER AND CO., Farnborough Station, Hants.

COCOA-NUT FIBRE REFUSE (newly made), 20 bushels, 6s. 8d; 20s. per 100 bushels, 45s. per 300 bushels. Larger quantities contracted for.

J. STEVENS, Fibre Works, High Street, Battersea, S.E.

COCOA-NUT FIBRE REFUSE. (H. Wright's pure).—Invaluable for Forcing, Plunging, and all Gardening purposes; sure protection against Frost. As supplied to 1000 Nurserymen and Gardeners. Twenty bushels, 6s. 8d.; 50 bushels, 12s. 6d.; truck load, 45s. Delivered free on to rail or within 6 miles.

THOS. HODGES AND CO., Eagle Steam Fibre Works, Hatcham Road, Old Kent Road; and 81, Bishopsgate Street Without, London, E.C.

ODAMS' MANURES, FOR ALL CROPS.

Manufactured by the NITRO-PHOSPHATE and ODAMS' CHEMICAL MANURE COMPANY (LIMITED), consisting of Tenant-Farmers occupying upwards of 150,000 Acres of Land.

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WESTERN COUNTIES BRANCH—Queen Street, Exeter.

Particulars will be forwarded on application to the Secretary, or may be had of the Local Agents.

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1869, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. Sold Retail by Seedsmen, in boxes, 1s., 3s., and 10s. 6d. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

BELL'S MILDEW COMPOSITION, as used by them for the last twenty-five years at their "HORTICULTURAL ESTABLISHMENT, BRACONDALE," their "NURSERIES, LAKENHAM," and "VINERIES, THORPE HAMLET," consisting of over 30,000 feet of glass. Retail, 1s. 6d. and 2s. 6d. per bottle, of the Sole Manufacturers,

BELL AND SON, 10 and 11, Exchange Street, Norwich.

BEST TOBACCO PAPER, CLOTH, and CORD.

Wholesale and Retail Price (low) on application to J. GEORGE, Putney Heath, London, S.W.

RUSSIA MATS, for Covering Garden Frames.—ANDERSON'S TAGANROG MATS are the cheapest and most durable. Price List, which gives the size of every class of Mat, forwarded post free on application.

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RUSSIA MATS.—A large stock of Archangel and Petersburg, for Covering and Packing. Second sized Archangel, 100s.; Petersburg, 60s. and 80s; superior close Mat 45s., 50s., and 55s.; packing Mats, 20s., 30s., and 35s. per 100; and every other description of Mat at equally low prices, at

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E. T. ARCHER'S "FRIGI DOMO."—Patronised by Her Majesty the Queen for Windsor Castle and Frogmore Gardens, the late Sir Joseph Paxton, and the late Professor Lindley, &c.

MADE of PREPARED HAIR and WOOL.

A perfect non-conductor of heat or cold, keeping a fixed temperature where it is applied. A good covering for Pits and Forcing Frames.

PROTECTION from COLD WINDS and MORNING FROSTS.

"FRIGI DOMO" NETTING, 2 yards wide, 1s. 4d. and 1s. 10d. per yard.

"FRIGI DOMO" CANVAS.

2 yards wide .. .. 1s. 10d. per yard run.
3 yards wide .. .. 3s. per yard.
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ELISHA T. ARCHER, only Maker of "Frigi Domo," Stanstead and Brockley Roads, Forest Hill, London, S.E.; and of all Florists and Seedsmen. All goods carriage paid to London.

NOTICE.—REMOVED from 3, CANNON STREET, CITY.

Russia Mat Merchants.

MARENDAZ AND FISHER, Importers and Manufacturers, 9, James Street, Covent Garden, have an immense stock of MATS for Covering, Tying, Packing, and Shading Purposes. Low Terms to very large Buyers.

Labels—Secure Tree and Plant Labels.

PARCHMENT or CLOTH LABELS, TREE or PLANT LABELS. Punched Parchment, 4 inches long, 3s. 6d. per 1000, or 30s. per 10,000; if eyeleted, 4s. per 1000. Vellum Cartridge, 4 inches long, 3s. per 1000 for 10,000. Sample Labels sent on receipt of postage stamp. Orders delivered free in London.

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Under the Patronage of the Queen.

J. SMITH'S IMPERISHABLE STRATFORD LABELS.

The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.

The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."

Samples and Price List free.

Sole Manufacturer: J. SMITH, The Royal Label Factory, Stratford-on-Avon.

Indestructible Terra-Cotta Plant Markers.

MAW AND CO.'S PATENT.—Prices, Printed Patterns, and Specimens, sent post free on application; also Patterns of Ornamental Tile Pavements for Conservatories, Entrance Halls, &c.

MAW AND CO., Benthall Works, Broseley.

Rosher's Garden Edging Tiles.

THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.

GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.

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ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3s. per square yard upwards. Pattern Sheets, of plain or more elaborate designs, with prices, sent for selection

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KENT PEATS or LOAM supplied at lowest rates in any quantities.

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Metallic Hothouse Builder to Her Majesty.

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BOOKS of DESIGNS, 5s. each.

☞ The Extensive Ranges of Metallic Hothouses in the Royal Gardens, Windsor and Osborne, were executed at this Establishment.

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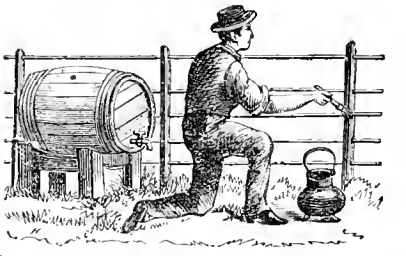
For passages and all further information, apply to the AGENT-GENERAL, at 3, Westminster Chambers, Victoria Street, London, S.W

Oil Paint No Longer Necessary.



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Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.

Glangwilly, Llanpumpsant, Carmarthen, Nov. 27, 1873.—"Mr. Lloyd Lloyd encloses cheque for £3 5s., amount due to Messrs. HILL & SMITH, and he considers the Black Varnish one of the most useful things he ever possessed."

Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley; and 118, Queen Victoria Street, London, E.C., from whom only it can be obtained.

CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would specially draw attention to the fact that every cask of their Varnish is legibly marked with their name and address, without which none is genuine.

COWAN'S SYSTEM of HEATING saves in most cases the entire Cost of Fuel, maintains the heat more steadily than any other system, requires no night attendance, and produces no unpleasant smell.

COWAN'S SYSTEM of GASMAKING is the most economical yet known.

COUNTY MAGISTRATES, Governing Bodies, Noblemen, Gentlemen, Manufacturers, &c., are solicited to inquire into COWAN'S SYSTEMS of HEATING and GASMAKING, as, by the adoption of them in Gaols, Asylums, Hospitals, Workhouses, Factories, Private Mansions, Horticultural and other Buildings, a very great saving of expense is effected.

COWAN'S SYSTEM has been adopted by many Noblemen and Gentlemen, and can be seen in operation at Garston, where Apparatus for Heating, and one combining Heating and Gasmaking, have been erected.

THE COWAN PATENTS COMPANY (Limited) SUPPLY APPARATUS for Cowan's System of Heating and Gasmaking, as well as for every other description of Heating. The Company also undertake the ERECTION of ALL KINDS of HORTICULTURAL BUILDINGS. The Company have for Sale a great quantity of POT VINES from the well-known stock at Garston; and also, a Valuable Assortment of Stove and Greenhouse Plants, also Grapes, Pines, and other choice DESSERT FRUITS, for which application should be made to the Managing Director at the Vineyard. The Trade supplied. Plans and Estimates prepared. Illustrated Circulars free. Illustrated Pamphlet, price 2s.

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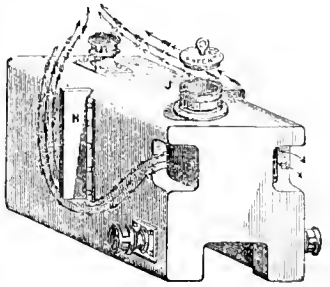
HOT-WATER BOILERS, SURREY SIDE, BLACKFRIARS BRIDGE, PIPES, CONNECTIONS.



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NEW PATENT "CLIMAX" BOILER (1874). See p. 666, 1874, *Gardeners' Chronicle.*

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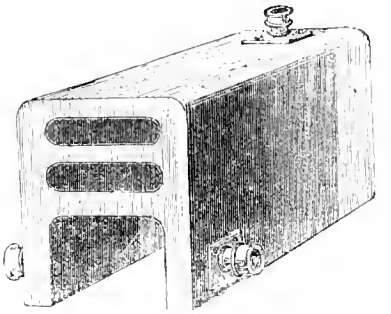
☞ *The largest and most complete Stock in the Trade; upwards of Twenty Thousand Pounds' worth to choose from.*



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"TUBULAR," and every other Boiler of known merit or excellence.

☞ *Prize Medal Awarded at the National Contest, Birmingham, 1874.*

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PRICE LIST on application; or, Six Stamps for DESCRIPTIVE CATALOGUE, 4th Edition.

By Her Majesty's Royal Letters Patent.

PORTABLE HOT-WATER CIRCULATING BOILER,

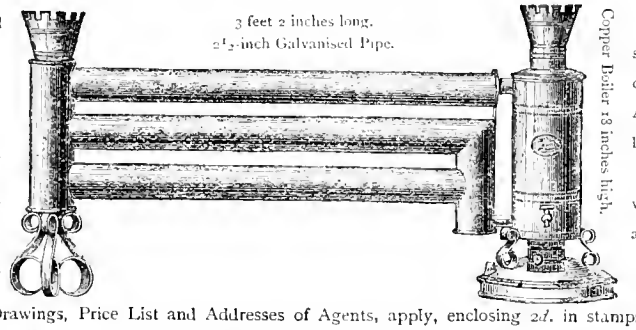
THE BEST AND CHEAPEST EVER OFFERED TO THE PUBLIC.

To Burn Petroleum Oil, or, when required, may be Heated by Gas.

Made in several sizes—

SAFE, EFFECTIVE, ECONOMICAL, AND PORTABLE.

Suitable for Warming Small Entrance Halls, Conservatories, Bed Rooms, Offices, Saddle Rooms, Ship's Cabins, &c.



There is no smell, smoke, dust or danger in using this Apparatus. It will burn for

THIRTY HOURS

without attention, at a cost of less than

ONE FARTHING

per hour.

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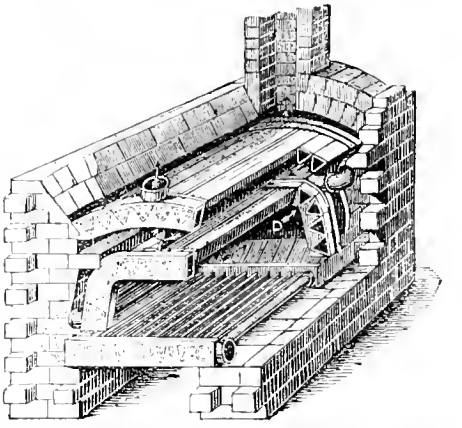
MESSENGER AND COMPANY'S PATENT TUBULAR BOILER.—Nearly 3000 now in use.



Combines all the advantages of the old Saddle, which is acknowledged to be the most economical, with the Tubular, the most powerful form of boiler. By the use of triangular tubes a larger amount of heating surface is exposed to the direct action of the fire than in any other form of boiler. The water-bridge (D) also receives the most intense heat. The boiler is made of cast-iron, which is admitted to be the best material as regards durability, strength, &c. In consequence of the above advantages we are enabled to supply boilers with a large amount of heating-power at very moderate rates. The power of this boiler can at any future time be increased by adding another row of tubes. Illustrated List free on application to

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GEORGE'S PATENT CALORIGEN,

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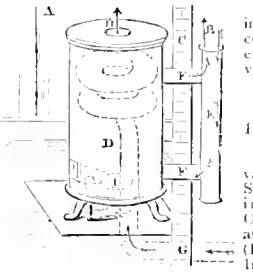
Warming and Ventilating Small Conservatories.



The only Gas Stove in which the product of combustion is entirely excluded from the Conservatory.

Made in Wrought Iron, £3 3s.

Made in Copper, £5.

Height, 28 inches; diameter, 14 inches.

It will be found very valuable in the Nursery or Sick Room, Damp Buildings, Conservatories, Offices, &c. Exhibited at the Exhibition of 1871 (Department of Scientific Inventions).

Illustrated Prospectuses and Testimonials on application.

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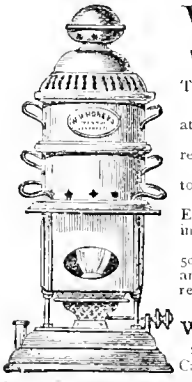
This Stove introduces a strong current of warmed (not burnt) fresh air.

ESTABLISHED 1856.

KEEP OUT THE FROST.



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VAPORISING STOVES,

To Burn Kerosene or any Mineral Oil.

They will burn for twenty-four hours at a cost of one penny for three hours.

They require no attention beyond replenishing the Oil.

Suitable for Greenhouses, Conservatories, Halls, Bed-rooms, &c.

They will not injure the most tender Exotics, nor are they in any way injurious to the health.

Prices, in block tin, 30*s.*; in copper, 50*s.* Copper, with glass, to give light and heat, 55*s.* Either will be sent on receipt of Post-office Order.

To be seen in operation at

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Catalogue free. No agents appointed.

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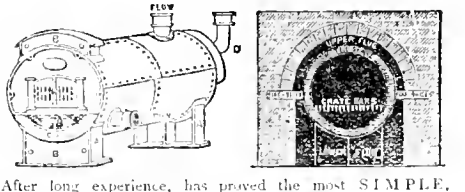

After long experience, has proved the most SIMPLE, ECONOMICAL, EFFECTUAL, and LASTING BOILER extant; recently much improved. For Illustrations, with full particulars, apply to the Sole Makers,

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Castle Hill Foundry, Engineering and Boiler Works, Newcastle, Staffordshire

☞ Our Boilers are the ONLY ones made with the sanction and under the inspection of the inventor, Mr. Stevens—all others being base imitations.

FOWLER'S PATENT STEAM PLOUGH and CULTIVATOR may be SEEN at WORK in every Agricultural County in England

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PATENT PORTABLE SMOKELESS STOVES and PATENT FUEL

For Heating Conservatories, Greenhouses, Halls, Passages, and places with Chimneys, from 12s. 6d.

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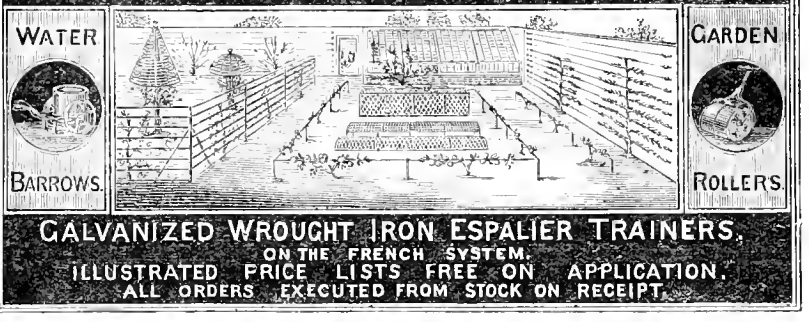
NORFOLK IRON WORKS, NORWICH.



GALVANIZED WROUGHT IRON ESPALIER TRAINERS,
ON THE FRENCH SYSTEM.
ILLUSTRATED PRICE LISTS FREE ON APPLICATION.
ALL ORDERS EXECUTED FROM STOCK ON RECEIPT.

PARHAM'S PATENT SYSTEM of GLAZING (without Putty) on CHANNELLED WROUGHT-IRON RAFTERS

secures almost entire immunity from Breakage of Glass, extreme facility for Repairs, and absolute freedom from Drip.

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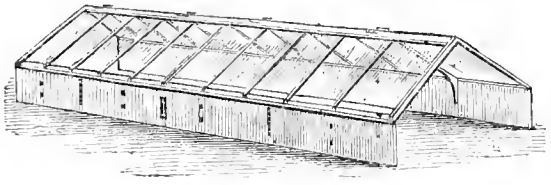

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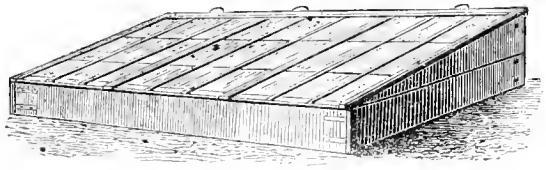

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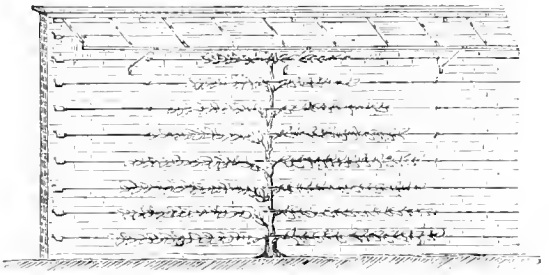

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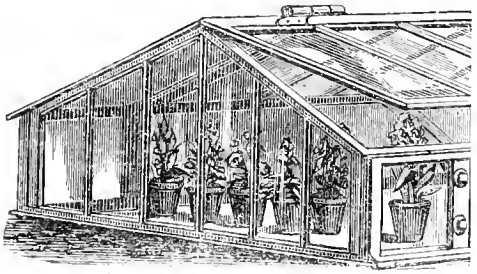

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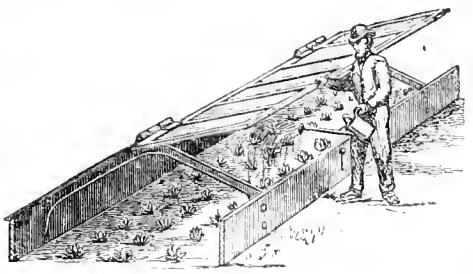

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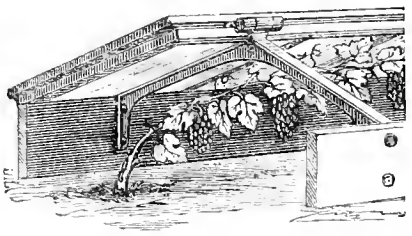

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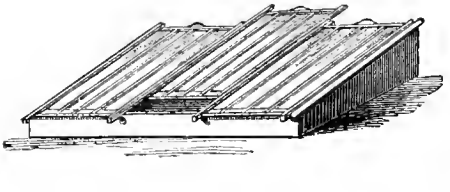

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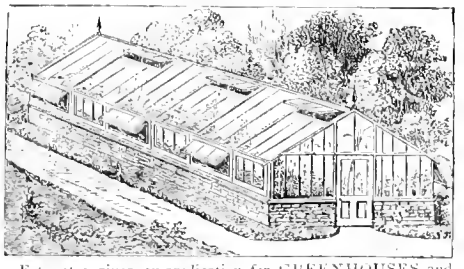

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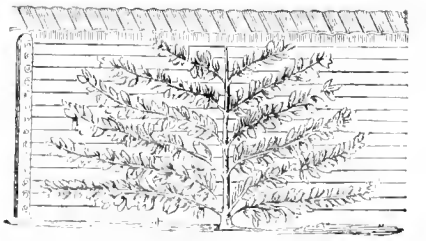

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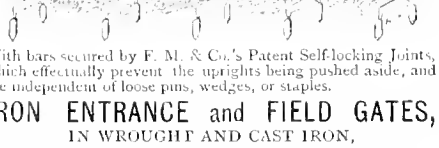

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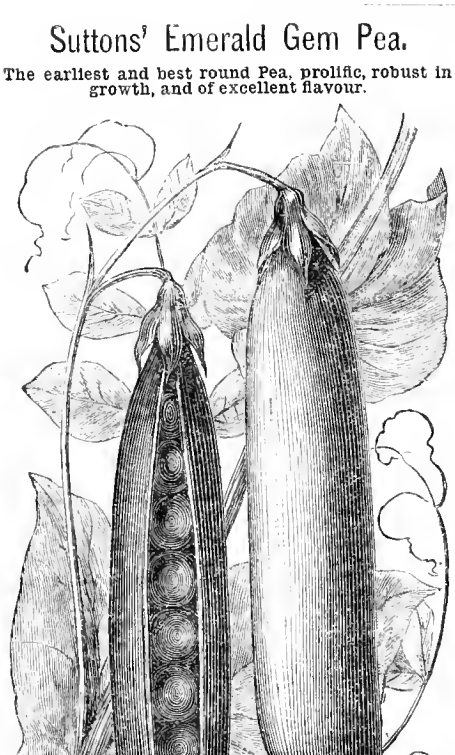

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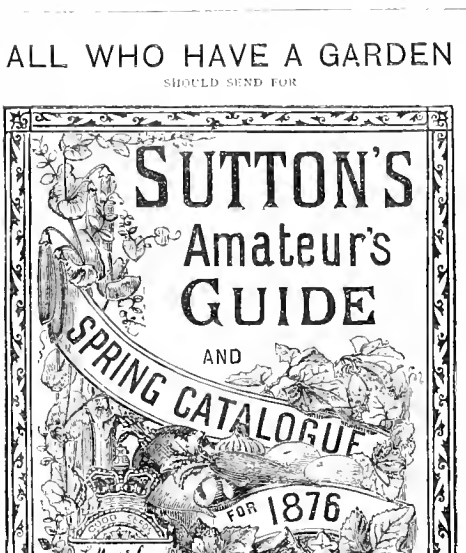

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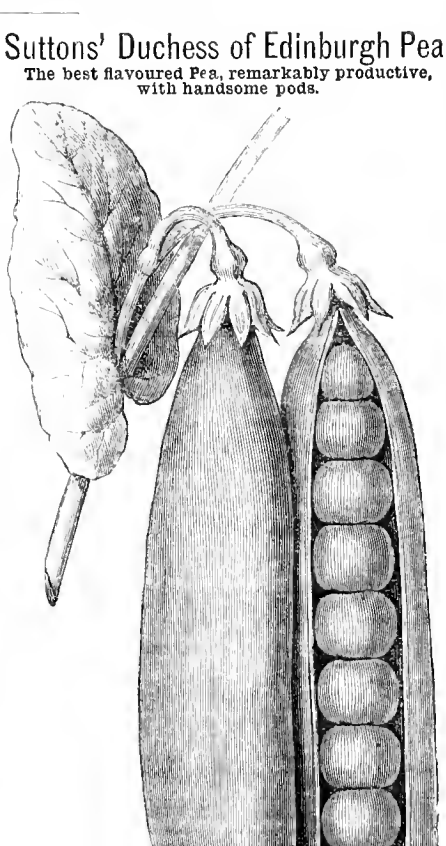

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THE

GARDENERS' CHRONICLE.

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A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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LOMBARDY POPLARS, fine large, 20 to 30 feet high, 3s. to 5s. each. Delivered on Rail.
T. JACKSON AND SON, Nurseries, Kingston, Surrey.

MAGNIFICENT NEW HARDY EVERGREEN FLOWERING SHRUB, &c.—For particulars see our advertisement in *Gardeners' Chronicle* of Nov. 19 and 26, 1875. See also CATALOGUE, free on application.
The NEW PLANT and BULB COMPANY, Lion Walk, Colchester.

Mangel and Swede.

JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself.
Bardney Manor, Lincoln.

Johnstone's St. Martin's Rhubarb.

EARLIEST and BEST in CULTIVATION for Open Ground, has a splendid colour and excellent for Forcing. Strong roots, 9s per dozen. Trade price on application.
W. P. LAIRD AND SINCLAIR, Nurserymen, Dundee, N.B.

For Sale.

VEITCH'S IMPROVED ASHLEAF KIDNEY POTATOS, 100 bushels at 6s. per bushel.
G. STEVENS, St. John's Nursery, Putney, S.W.

POTATOS for PLANTING.—Fine samples of Myatt's Prolific Kidney, Mona's Pride, American Early Rose, Paterson's Victoria, Rivers' Royal Ashleaf, are offered at moderate prices by
J. AND G. McHATTIE, Seed Merchants, Chester

SNOWFLAKE POTATO, splendid new variety from America, extraordinary cropper and splendid quality. Fine ENGLISH GROWN SEED, price 6d. per lb., 6s. per peck of 14 lb., 21s. per bushel of 56 lb.; much cheaper by the sack or ton. Orders of 21s. and upwards carriage paid.
DANIELS BROTHERS, Seed Growers, Norwich.

SALES BY AUCTION.

1876.—Preliminary Notice of

FORTHCOMING SALES, by PROTHEROE AND MORRIS, Nursery, Market Garden, and Estate Auctioneers, Surveyors and Valuers, 98, Gracechurch Street, E.C., and Leytonstone, E.

JANUARY 31.—AUCTION MART, Tokenhouse Yard, E.C. 6000 unusually fine Lilium auratum from Japan, Double Camellias and Azalea indica, well set with buds, from Ghent; also a consignment of rare Japanese Manufactures and Curios.

FEBRUARY 8 to 11.—The EXETER NURSERIES. By order of Messrs. Lucombe, Pince & Co. A considerable number of specimen Coniferæ and Evergreens, together with a large quantity of smaller Stock, possessing great attraction for the Trade.

FEBRUARY 8 and 9.—WINDLESHAM, near Bagshot, Surrey. By order of the Mortgagee, with the concurrence of the Executors of the late Mr. George Baker, deceased. Choice and principally Thriving Young Nursery Stock.

FEBRUARY 14 to 18.—HEATHERSIDE NURSERY, Five days' sale.—The first portion of this noted healthy and choice Nursery Stock, ranging over the extensive Freehold Building Estate, now in the hands of the Auctioneers, for sale by private treaty.

FEBRUARY 22.—The EXOTIC NURSERY, Tooting, S.W. By order of Mr R. Parker. Selected assortment of well-grown Nursery Stock.

MARCH.—WILLESDEN NURSERY, Willesden, Middlesex. By order of Mr. George Videon. The Leases with the Goodwill of the old-established Business, Windlesham, near Bagshot, Surrey. The Lease and Goodwill of this valuable and celebrated American Nursery.

Further particulars will shortly appear.

Seeds, Lilies, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, January 17, at half-past 12 o'Clock precisely, a consignment of CYCAS and PALM SEEDS from California in capital condition, CONIFEROUS TREE SEEDS from California, 8000 LILIUM AURATUM BULBS from Japan, in splendid condition, and various other LILIES, GLADIOLI, &c.

On view the morning of Sale, and Catalogues had.

Rare Lilies and Other Roots.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C. on THURSDAY, January 20, at half-past 12 o'Clock precisely, rare LILIES and other ROOTS, including the following and other Genera in many species and varieties, with descriptive notes:—Achimenes, Alströmeria, Amaryllis, Antholyza, Babiana, Begonia, Bobartia, Brunsvigia, Caladium, Chlidanthus, Coburgia, Colchicum, Crinum, Crocosma, Curcuma, Cyclamen, Cyrtanthus, Erythrina, Erythronium, Eucharis, Eurycles, Frittillaria, Gastronema, Gesnera, Griffinia, Habranthus, Helleborus, Hippeastrum, Iris, Ismene, Ixia, Nerine, Nymphæ, Oxalis, Pasonia, Prancratium, Pardanthus, Scilla, Sparaxis, Sternbergia, Triteleia, Tropæolum, Tulipa Gregii, Urceolina, Watsonia, Zephranthes, &c. Also an importation of 10,000 magnificent BULBS of LILIUM AURATUM, just arrived from Japan in very fine condition.

On view the morning of Sale, and Catalogues had.

Preliminary.—Sale of a very Valuable Collection of Specimen and Half-specimen STOVE and GREENHOUSE PLANTS, the whole of which have been exhibited.

ARTINGSTALL AND HIND (the surviving Partners of the late Firm of CAPES, DUNN & Co.) beg to announce that they have received instructions from Messrs. E. Cole & Sons to SELL by AUCTION, about the middle of April, at their Nurseries, Withington, near Manchester, the valuable Collection of EXHIBITION PLANTS.

Catalogues will be prepared in due course, and further information may be had by applying to the Auctioneers, 5, Princess Street, Manchester.

TO BE LET, MYDDLETON HALL GARDENS, containing about 3 acres of Land, with Vineries, &c. Apply to

Mrs. COMBER, Myddleton Hall, near Warrington.

Window Glass, Sheet Lead, Paints, &c.

THOMAS MILLINGTON AND CO., IMPORTERS and MANUFACTURERS. New LIST of PRICES, very much reduced, on application.

87, Bishopsgate Street Without, E.C.

Metallic Hothouse Builder to Her Majesty.

HENRY HOPE (late Clark & Hope, formerly Clark), HOTHOUSE BUILDER and HOT-WATER APPARATUS ENGINEER.

55, Lionel Street, Birmingham. Established A.D. 1818.

BOOKS of DESIGNS, 5s. each.

☞ The Extensive Ranges of Metallic Hothouses in the Royal Gardens, Windsor and Osborne, were executed at this Establishment.

GOVERNMENT EMIGRATION.

SYDNEY, NEW SOUTH WALES.—Passages are provided for Married Couples not exceeding 40 years of age, with or without children; and Single Men and Women not exceeding 35 years of age; being FARMERS, MECHANICS, MINERS, LABOURERS, and FEMALE DOMESTIC SERVANTS, on payment of the following rates:—12 years and not exceeding 40, £5 10s.; 1 year and under 12, £2 15s.

For passages and all further information, apply to the AGENT-GENERAL, at 3, Westminster Chambers, Victoria Street, London, S.W.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

Notice is hereby given that the ANNAL GENERAL MEETING of the Subscribers to this Society will be held on THURSDAY the 20th inst., at the Bedford Hotel, Covent Garden, W.C., when an ELECTION of FOUR PENSIONERS will take place.

The Chair will be taken at 6 o'Clock precisely.

By Order, E. R. CUTLER, Sec.

14, Tavistock Row, W.C., Jan. 5.

P.S. The Voting Papers have all been delivered; any Member who may not have received one is requested to make immediate application.

Choice Novelties in Vegetables, Flowers, and POTATOS.—See

SUTTONS' AMATEUR'S GUIDE, Post-free for fourteen stamps.

SUTTONS' SHORT SELECT SEED LIST, gratis and post-free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

G. CHORLEY, Midhurst, has to offer:—CHESTNUT, Spanish, 100,000, 2 to 3 feet; 200,000, 18 inches to 2 feet; Seedling ditto, 100,000; ASH, 200,000; ALDER, 50,000; THORN, Quick, 50,000. All stout, well rooted, transplanted.

The Best Celery is

LEICESTER RED—1s. per packet.

The best SAVOY is KING COFFEE, 1s. per packet; with many other choice stocks of Seeds. TRADE PRICED LIST on application.

HARRISON AND SONS, Seed Growers, Leicester.

To the Trade.—Seed Potatos.

H. AND F. SHARPE are prepared to make Special Offers of SEED POTATOS grown on their own Farms from the finest selected stocks. Their List this season comprises all the English and American varieties worthy of cultivation. The prices will be found very moderate.

Seed-growing Establishment, Wisbech.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.

Mr. WEBB, Calcot, Reading.

From Paris.—Tea Roses by the Thousand, and Four THOUSAND of H.P. PAUL NERON.

LÉVÊQUE AND SON, NURSERYMEN, 26, Rue du Liégat, Ivry-sur-Seine, near Paris, have still a splendid and large selection of TEA ROSES, grafted on their own roots, grown in small pots—Devoniensis, Souvenir d'un Ami, Adam, Madame Margottin, Souvenir de Paul Néron, Vicomtesse de Cazes, &c., and all the best sorts, by the dozen or 100 of each. Four thousand of H.P. Paul Néron, strong plants, grown in pots and on their own roots; prices on application.

AMERICAN SEED POTATOS.—A Grower having a few more of the above than he requires for his own planting, begs to offer them as under, at per sack of 1½ cwt.:—

EXTRA EARLY VERMONT, 16s. | IDAHO, 12s.
EARLY ONEIDA, 13s. | EARLY ROSE, 10s.

Apply, B. A., Post Office, Minster, near Ramsgate.

A BARGAIN is offered in a lot of very extra strong BLACK HAMBURGH VINES, which must, on account of alterations, be moved out of a border in which they were planted to be fruited this year. They have never borne a berry, and would ripen twenty to thirty pounds of fruit well. Strong Canes, with splendid healthy roots, 10s. 6d. each.

L. WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

Roses.

CHARLES TURNER can still supply strong Plants of all the leading varieties, of different heights and in pots, including the fine new kinds, Miss Hassard, Rev. J. B. M. Camm, John Stuart Mill, and Royal Standard. FRUIT TREES are also very fine this season.

A DESCRIPTIVE CATALOGUE of the above may be had on application.

The Royal Nurseries, Slough.

To Noblemen, Gentlemen, and Others who are REPLANTING this AUTUMN.

R. NEAL begs respectfully to call the attention of the above to his large and varied stock of Hardy SHRUBS, FRUIT, FOREST, and ORNAMENTAL TREES, ROSES, RHODODENDRONS, CLIMBING PLANTS, &c., which are now in fine condition for removal. An early inspection invited.

CATALOGUES may be had on application.

The Nurseries, Wandsworth Common, S.W.

SEED ORDERS should now be made out, and, as Seeds will be generally inferior in quality this year, they should be obtained early and from reliable Houses. Send at once for HOOPER'S CATALOGUE. It is the "best published," an "exhaustive compilation on Gardening subjects."—*Weekly Dispatch*. You will get well served if you send your orders to

HOOPER'S, Covent Garden Seed Stores, London, W.C.

CHOICE HYBRID GLADIOLI.—The Gladiolus being a special feature in our business, we respectfully invite Growers of this magnificent Autumn Flower to send for the New CATALOGUE of our Prize Varieties before making their annual purchases. In it all the best sorts are described, and the prices quoted are very moderate.

ROBERTSON AND GALLOWAY, Seed Merchants and Nurserymen, 157, Ingram Street, Glasgow.

JOSEPH SMITH, SEN., Tansley and Scotland Nurseries, near Matlock, Derbyshire, has for Sale:—

RHODODENDRON PONTICUM, 4-yr. old seedlings, not grown on bog, but on heath soil, with fine roots; stiff healthy plants, 3 to 4 inches high, 5s per 1000. Also Hybrid Catawbiense, named sorts, 7s. 6d. per 100; with transplanted, from 1 to 1½ foot up to 3 and 4 feet, at very low prices, which can be had on application.

OAKS, large quantity, 3 to 4 and 4 to 5 feet.

With a GENERAL NURSERY STOCK. Prices on application.

Abies excelsa aurea (the Golden Spruce).

MESSRS. J. AND C. LEE beg to announce that they now intend to send out this magnificent tree. When planted in the full sunlight the whole tree is suffused with the richest gold. First-class Certificate from the Floral Committee of the Royal Horticultural Society. Well-established plants, 21s. each. A few of extra sizes, 31s. 6d. and 42s. each. The usual allowance to the Trade.

Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

TO POTATO PLANTERS.—ALPHA, 1s. 6d. per lb.; SNOWFLAKE, 6d. per lb.; EUREKA, 6d. per lb. See Quincey's Retail Price LIST, which contains most of the leading sorts of English and American varieties where quality and cheapness are combined. Free per post.

ASPARAGUS PLANTS, 1-yr., 2-yr., and 3-yr. Connover's Colossal, in any quantity. Prices on application.

CHRISTMAS QUINCEY, Peterborough.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post free their GENERAL LIST of SEEDS, which includes their special stocks of

WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

To the Trade Only.

JOHN BESTER, White Hart Lane, Tottenham, offers the following:—

PELARGONIUMS, Queen Victoria, 10s. per dozen; Triomphe de St. Maude, the finest crimson-red market kind, 10s. per dozen; packing included.
BALSAM SEED, a few ounces of the very finest, in nine colours, 10s. per oz.
CUCUMBER, Beauty of St. Albans, 7s. per 100.
LOBELIA PUMILA MAGNIFICA, from store pots, at per 100 or 1000. Price on application.

All orders prepaid.

To the Trade.

WM. WOOD AND SON have much pleasure in offering magnificent dwarf-trained trees of the following:—

PEACHES, NECTARINES, and APRICOTS.

The Firm have long been celebrated for the excellence of their trained fruit trees. Also very fine Dwarf Maiden Peaches, Nectarines, and Apricots, with well ripened wood.

CATALOGUES on application.

WM. WOOD AND SON, The Nurseries, Maresfield, near Uckfield, Sussex.

The New Japan Apple.

PYRUS MAULEI, is now distributing, at 21s., 15s., and 10s. 6d. each. It is as hardy as the common Apple, blossoms at the same time; the flowers are of a vivid orange-scarlet, fruit of a bright transparent lemon colour, very fragrant, about the size of the Golden Pippin Apple, which is produced in the greatest profusion.

The jam of this season has been tasted by some of the best judges and connoisseurs, and pronounced exquisite, and perhaps superior to any English or foreign fruit.

W. MAULE AND SONS, The Nurseries, Bristol.

Vines, Vines—Dwarf Roses.

PLANTING and FRUITING CANES of Black Hamburgh, Black Alicante, Lady Downe's, Muscat of Alexandria, White Lady Downe's, Madresfield Court, Gros Colman, Mrs. Pince, Trentham Black, Buckland Sweetwater, Foster's Seedling, Dr. Hogg, Muscat Hamburgh, Royal Muscadine, and West's St. Peter's, 2s. 6d. to 5s. each; Waltham Cross, 5s. to 7s. 6d. each; Pearson's Golden Queen, 21s. to 31s. 6d. each.

DWARF ROSES, extra strong, 6s. per dozen.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

Evergreen Hedges.—Box, Green Hollies, and LIGUSTRUM OVALIFOLIUM.

R. NEAL, having a very large Stock of the above, can offer the same by the 100 or 1000 at a very low rate.

Also 10,000 ACER CAMPESTRIS, from 5 to 8 feet in height, clean-grown stuff.

Price on application.

The Nurseries, Wandsworth Common, S.W.

Special Offer.

THE PRESTON NURSERY AND PLEASURE GARDENS COMPANY (LIMITED), have a Surplus Stock of the following, in about 100 varieties, many of them in fine bearing state:—

APPLES, 3 to 4 feet stems, fine.
PEARS, 3 to 5 feet stems, extra fine.

Lists on application to the Manager.

WM. TROUGHTON, Ribbleton Nursery, Preston.

CUCUMBER and MELON SEED.

DUKE OF EDINBURGH CUCUMBER (Daniels'), saved from seed had direct from the Raiser. Per packet, 1s.
TELEGRAPH CUCUMBER (true), per packet, 1s.
DUKE OF EDINBURGH MELON (Sutton's), new Scarlet-flesh. Per packet, 1s
LITTLE HEATH (Monro's). Per packet, 1s.

The four varieties for 3s. Stamps with orders.

WILLIAM BRYANT, The Nursery, Rugby.

TRY HOOPER'S SEEDS this year.

HOOPER'S CATALOGUE is now Ready.

Price 1s., which is allowed to Purchasers.

HOOPER'S SEEDS are Genuine.

COLLECTIONS for KITCHEN GARDEN, 12s. 6d., 21s., 42s., 63s.; FLOWER GARDEN, 10s. 6d., 21s., 31s. 6d., 42s.

HOOPER'S COVENT GARDEN Stores, London, W.C.

CIRCULAR.—Edinburgh, 12, Melbourne Place, January 1, 1876.

I have the pleasure to intimate that I have this day assumed as Partner in my Business, my Nephew, Mr. ALEXANDER DUFF, who has for several years past taken the principal management in my Establishment.

The Business will be carried on by the NEW FIRM as

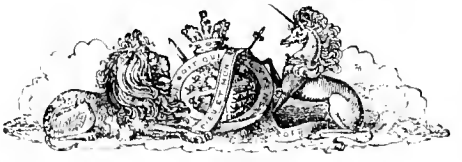
R. T. MACKINTOSH AND CO.

I take this opportunity of thanking my Friends and Customers for their support during the last Twenty-five Years, and trust their patronage will be continued to the New Firm.

R. T. MACKINTOSH.

NEW DOUBLE POINSETTIA,

POINSETTIA PULCHERRIMA PLENISSIMA.



MESSRS. JAMES VEITCH & SONS

HAVE the pleasure to announce that they are now prepared to book Orders for this magnificent novelty, which they will execute in April next, strictly in the rotation in which they are received. A representation of this splendid plant was published in the *Gardeners' Chronicle* of January 1. After the descriptions which have appeared in the Gardening Press, MESSRS. J. V. & SONS consider it quite unnecessary to add any remarks of their own, but prefer only to give the following Extracts from the Gardening Papers, and Copies of Testimonials which they have received :—

From Mr. D. Judd, Gardener to Viscount Hill, Hawkstone.

Having been asked by the Messrs. Veitch to grow a few plants of their Double Poinsettia to test its qualities, I can fully endorse all the high opinions that have been recorded in its favour in the gardening periodicals, and pronounce it to possess all the good properties the American horticulturists led us to expect from it; *and, indeed, I do not think they have said enough in its praise.* From what I have seen of it, in watching its progress through all its stages of growth, I have no hesitation in saying that it is very far in advance of the old Poinsettia pulcherrima in every particular. Its "saddle-like" head, produced on the top of the lower whorl of bracts, gives it all the appearance of a double head, which lasts longer in perfection on the plant, and also keeps a very much longer time in water after being cut, than the old form. I have no hesitation or scruple in saying that it is the best winter decorative plant that I have ever yet seen, and I consider that I shall not be saying too much in its praise in pronouncing it simply glorious.

The plants have been seen growing by some of the leading men in the gardening world, who can fully corroborate the above statements.

The following results of the growth of the plant are given to more fully prove its value. The plants were received by me on August 6, 1875; they were in 3-inch pots, and had had their tops taken off for propagation. So soon as they had recovered the effects of their journey, and had made shoots 3 inches long, these were again taken off, and the stools were potted into 4-inch pots, and ultimately into 6-inch pots; they all did remarkably well, and produced bracts or whorls from 13 to 16 inches in diameter by December 6. One plant produced two heads of bracts, the one 16¼ inches in diameter, with individual bracts from 6 to 8 inches long, and 2½ inches broad, with thirty-three large bracts on the lower whorl, and thirty smaller in the centre or "saddle-like" head. The other head of bracts was 13 inches in diameter; the individual bracts were 6¾ inches long and 2 inches broad; there were twenty-eight in the lower whorl, and twenty smaller ones in the centre. The tops were taken off on August 24, and put in thumb-pots, and, when struck, were potted into 3-inch pots; these produced whorls in December varying from 11 to 13 inches in diameter. One struck at the same time from a single eye, and potted into a 3-inch pot, produced a whorl in December 12 inches in diameter, with 30 bracts in the lower whorl, and one of them 1⅜ inch broad; a proof that it may be grown in as short a time as the old variety.

The foliage carries a noble appearance, some of the leaves of the plants in 6-inch pots measured 8 inches long and 7 inches broad from point to point of the angulate lobes, or 3½ inches between them. It is true the inflorescence does not yet come to what I have seen in the dried specimen, but one can imagine what the two heads on the plant in the 6-inch pot would have been had they been concentrated into one, and I feel fully persuaded that when the stress of propagation is over, and the plant assumes its normal character, and properly developes its bloom, we shall behold a head quite equal to the dried specimen. As it is, we have reason to thank the Messrs. Veitch for the introduction of the grandest winter decorative plant to English gardens, and we may also congratulate them on being the possessors of so glorious a production.

From Mr. Stevens, Gardener to the Duke of Sutherland.

Trentham Gardens, Stoke-on-Trent

I have seen growing at Hawkstone your new double Poinsettia, and consider it by far the grandest acquisition to stove flowering plants that we have had for many years. It is as much superior in the fulness, breadth, and richness of its inflorescence to our old friend Poinsettia pulcherrima, as are the modern Nosegay Geraniums to the old purple Nosegay. I consider it a real gardener's plant, which must be cultivated extensively by all who require flowers for winter decoration, and I predict that you will have a larger call for this new plant than you have had for any new plant for many years past.—J. STEVENS.

From Mr. Coleman, Gardener to Earl Somers.

Eastnor Castle, Ledbury, January 6, 1876.

Having seen several of your double Poinsettias in perfection, I have great pleasure in being able to say it is one of the finest novelties of recent introduction. The plant having been so well described by the horticultural journals, I have only to say it surpasses in beauty the glowing description which preceded it from America; and the time is not far distant when an old favourite will have to give way to the magnificent double bracted form of one of our most useful decorative plants. The young plants I saw, although doubtless weakened by rapid propagation, were vigorous in growth, well furnished with bold healthy foliage, and the heads of inflorescence measured fully 15 inches across by 12 in depth. I sincerely congratulate you on your good fortune in being the introducers of this charming plant.—W. COLEMAN.

From Mr. D. Thomson, Gr. to the Duke of Buccleuch.

I have your letter and the head of the Poinsettia perfectly fresh; not one bract has fallen off, and it is before me in a stand of water in all its magnificence.

It is a grand thing, and deserves all the notice it can get. There will be no use for the old one after this gets into the field. Is the colour not more brilliant and more glossy? I think it is. —D. THOMSON.

In the "Gardeners' Chronicle" of December 18, 1875, p. 782,

the flowering of the Double Poinsettia is thus announced :—

Messrs. Veitch & Sons have now bloomed the Double Poinsettia—Poinsettia pulcherrima plenissima it might be called—and thus proved it to be, what indeed the dried specimens had already given us occasion to believe, a very grand plant, infinitely superior to the ordinary kind in one or two striking particulars, one of which is that, instead of the usual single tier of bracts, the axis of the inflorescence is branched repeatedly, and all the ramifications bear their quota of coloured bracts, fresh branches proceeding from their axils. This branching goes on till, in some cases, the heads have been seen to acquire a depth of 15 inches. We shall in due time submit to our readers a figure of this superb acquisition. [The figure was published in the Number of January 1, 1876, at p. 17.]

From Mr. Henry Jones, Gr. to Sir John Kelk, Bart., Bentley Priory, Great Stanmore.

I consider your new Double Poinsettia a very great acquisition. Having seen it by the side of the old variety I found the colour much brighter, which, with the addition of a double series of bracts, makes it worthy of all praise. The plant will answer for itself to all who grow Poinsettias. —HENRY JONES.

In "The Garden" of December 11, p. 513.

THE NEW DOUBLE POINSETTIA PULCHERRIMA.—The new double Poinsettia has at last flowered in Europe, Messrs. Veitch & Sons being the fortunate possessors of this singular novelty. We had an opportunity of seeing it for the first time on Thursday evening last, and are enabled to state that it fully comes up to our preconceived notions of its excellence. Instead of the bracts being in a single head, and spreading out in the same plan as in the case of the old form, in the double kind they are gathered into clusters which fill up the centre, so that the whole inflorescence is full and rosette-like, and the colour a vivid scarlet. One head, and that not fully developed, measured fully 15 inches in diameter across the lower bracts. The plant evidently has a robust constitution, the specimens of it which we saw being clothed to the base with fresh healthy foliage. Readers of the *The Garden* will remember that in August, 1873 (see p. 143), we drew attention to this new and beautiful form of the Poinsettia as having been introduced to cultivation by M. Benedict Roezl, who had found it in May of that year, "in a small Indian village in the Mexican State of Guerrero," and which he then forbore to describe, because, as he modestly observed, no botanist or florist would believe his description of so beautiful a plant.

In the "Journal of Horticulture" of December 16, 1875.

A PROLIFEROUS POINSETTIA.—Since the introduction of the well-known plant Poinsettia pulcherrima from Mexico forty years ago it has been without a rival as a distinct, scarlet-bracted, winter decorative plant. It is now, however, likely to be effectually superseded by a new and totally distinct form, which has also been discovered in Mexico by M. Roezl, and which is regarded by that collector as the most valuable of all his discoveries. The entire stock of the new Poinsettia is in the possession of the Messrs. Veitch, and is now in full beauty at their nurseries at Chelsea.

The examples which we have seen of this plant are remarkable alike for the size of the heads, their form, the distinct character of the bracts, and their marvellous brilliancy of colour. In the old type the plant is surmounted by a single cluster of yellow flowers, from the base of which the bracts radiate in a horizontal manner. In the new form the central or primary cyme, which is surrounded by splendid bracts, is, as it were, the root of other flowers which spring from it on short simple stems, each surmounted by flowers and bracts; and these secondary heads become further subdivided, and forming also perfect flowers and bracts—the head in fact culminating in a multiplication of parts, each perfect and of extraordinary brilliancy. The individual bracts differ also from the normal species by their longer petioles, so that each principal bract, instead of extending horizontally, is gracefully arched after the manner of the leaves of Dracæna Cooperi thus each head forms a perfect cone of colour, and not a simple flat disc, as in the old species.

The head which we more particularly noted was 16 inches in diameter, and from the base to the apex of the cone of drooping bracts was 11 inches in depth. The bracts on this head were fifty in number, arranged on seven separate cymes which had sprung from the primary base. The colour is superlatively brilliant, as if a delicate tint of orange floated over the intense scarlet, imparting a more dazzling appearance than is possessed by the old species. If the designation "a cone of fire" is applicable to any plant in existence this is the one; and if it proves constant to its character, as every head we have seen is constant, it is a plant which must find its way into all gardens in all lands where stove plants are cultivated, and form a brilliant monument to the researches of M. Roezl.

In "The Gardeners' Magazine" of January 1, 1876.

THE DOUBLE POINSETTIA.—Your anticipations in respect of the Double Poinsettia were none too sanguine, for it proves to be many degrees grander than that very grand plant the well-known Poinsettia pulcherrima of gardens. The scarlet bracts in the new plant are produced in what I may call an orderly crowd, the truth being that there is nothing strictly double about it, but the inflorescence branches freely, and the bracts are so multiplied as to acquire a peculiar power, for which, of course, they are chiefly indebted to the great mass of colour displayed.

In "The Gardener" for January, 1876.

THE NEW DOUBLE POINSETTIA PULCHERRIMA.—We have before us a head of this truly magnificent new plant, and never before did we see such a gorgeously effective specimen of any, either flowering or bracted, plant. Placed as we have it—after travelling from London—in a glass by itself, we know not of any term which applies more correctly to it than that of gorgeous. The head is composed of seven stiff branchlets—six of which are set in a whorl round the base of a centre one, which projects several inches above the others. The whole produce no less than fifty-one bracts; some are 6, some 7, and some 8 inches long, and several are 2¾ inches broad. The bottom ones, being the larger, droop gracefully from their weight, and those which fill up the centre, being smaller, are less drooping until they are nearly erect at the centre of the head. The whole form a bouquet of the most brilliant glossy scarlet, not less than 16 inches across, and it is rounded fully as much as large bouquets generally are, and it lasts longer in a fresh condition than the single—the head in question being quite fresh after having been cut and stood in a sitting room twelve days. When the striking effectiveness of this plant is seen, it cannot fail to find a place wherever winter decorative plants are in request. It was, we understand, imported into the United States of America from Mexico by M. B. Roezl; and the Messrs. Veitch of London have become the fortunate possessors of the whole stock of it.

Price 21s. each.

TERMS TO THE TRADE ON APPLICATION.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON, S.W.

GRAND NEW HARDY FRUIT —DIOSPYROS KAKI.

A very truthful Engraving of this grand acquisition is given in the *Gardeners' Chronicle*, December 18, 1875. For further particulars see our Advertisement in *Gardeners' Chronicle*, Nov 19 and 26, 1875; also our CATALOGUE, free on application.

THE NEW PLANT AND BULB COMPANY,
Lion Walk, Colchester.

LILIUM AURATUM, in magnificent condition and at Low Prices. See SPECIAL LIST, free on application.

THE NEW PLANT AND BULB COMPANY,
Lion Walk, Colchester.

Lilies, all Known Kinds (Home-grown).

THE NEW PLANT and BULB COMPANY invite intending Purchasers to send for one of their CATALOGUES, which, in addition to Lilies, contains a selection of the best Hardy Flowering and other Plants in cultivation, all remarkably good, and such as will give a fine effect next season. The Trade liberally dealt with.

Lion Walk, Colchester.

Trees and Shrubs on Sale.—Special Offer.

BENJAMIN WHITHAM,

The Nurseries, Reddish, near Stockport,

Has a large quantity of the following, fine healthy plants —must be cleared, the land being required for other purposes :—

FRUIT TREES.

APPLES, Pyramids, 3-yr.' heads, 3 to 4 feet, 6*s.* per dozen, 40*s.* per 100.
,, half standards, stems 2 to 4 feet, 4 to 5 feet high, 7*s.* per dozen, 50*s.* per 100; 5 to 6 ft., 8*s.* per doz., 60*s.* per 100.
CURRANTS, Black, fine, 10*s.* per 100.
,, Red, fine, 10*s.* per 100.
,, White, extra fine, 16*s.* per 100.
STRAWBERRIES, Yates' Seedling, very fine sort, abundant bearer, extra, 3*s.* per 100.
GOOSEBERRIES, large show and dessert sorts, extra strong, 15*s.* to 20*s.* per 100.

FOREST TREES.

AREA THEOPHRASTA (Service tree), grafted sorts, 3 to 4 feet, 5*s.* per dozen, 30*s.* per 100; 4 to 5 feet, 6*s.* per dozen, 40*s.* per 100; 5 to 6 feet, 8*s.* per dozen, 60*s.* per 100; 6 to 8 feet, 9*s.* per dozen, 70*s.* per 100.
BEECH, all fine, stout, extra transplanted, 1½ to 2 feet, 3*s.* 6*d.* per 100, 25*s.* per 1000; 2 to 3 feet, 4*s.* per 100, 33*s.* per 1000; 3 to 4 feet, 6*s.* per 100, 40*s.* per 1000; 4 to 5 feet, 10*s.* per 100, 65*s.* per 1000; 5 to 6 feet, 20*s.* per 100; 6 to 8 feet, 30*s.* per 100: 8 to 10 feet, 50*s.* per 100.
CHESTNUT, Horse, 2 to 3 feet, 5*s.* per 100; 3 to 4 feet, 6*s.* per 100; 4 to 5 feet, 7*s.* per 100; 5 to 6 feet, 10*s.* per 100; 6 to 8 feet, 20*s.* per 100.
,, ,, fine single specimens for avenues, very stout, straight stems, 12*s.* per dozen.
,, ,, Scarlet, 5 to 6 feet, 10*s.* per dozen: 6 to 8 feet, 12*s.* per dozen.
LIME, fine stock, 2 to 3 feet, 7*s.* per 100; 3 to 4 feet, 10*s.* per 100; 4 to 5 feet, 15*s.* per 100; 5 to 6 feet, 20*s.* per 100; 6 to 8 feet, 30*s.* per 100; 8 to 10 feet, 70*s.* per 100.
PINUS AUSTRIACA, 1½ to 2 feet, 7*s.* per 100; 2 to 3 feet, 12*s.* per 100; 3 to 4 feet, 25*s* per 100.
POPLAR, Lombardy, 2 to 3 feet, 4*s.* per 100, 35*s.* per 1000; 3 to 4 feet, 5*s.* per 100, 40*s.* per 1000; 4 to 6 feet, 8*s.* per 100, 75*s.* per 1000: 6 to 8 feet, 15*s.* per 100; 8 to 10 feet, 25*s.* per 100
,, Ontario, 4 to 6 feet, 8*s.* per 100; 6 to 8 feet, 12*s.* per 100; 8 to 10 feet, 25*s.* per 100.
,, Balsam, 4 to 6 feet, 10*s.* per 100; 6 to 8 feet, 20*s.* per 100.
PRIVET, Evergreen, 1½ to 2 feet, 15*s.* per 1000; 2 to 3 feet, 20*s.* per 1000; 3 to 4 feet, 25*s.* per 1000; 4 to 5 feet, 30*s.* per 1000.
SYCAMORE, 2 to 3 feet, 2*s.* 6*d.* per 100, 20*s.* per 1000; 3 to 4 feet, 3*s.* per 100, 25*s.* per 1000; 4 to 5 feet, 4*s.* per 100, 30*s.* per 1000; 5 to 6 feet, 6*s.* per 100, 50*s.* per 1000.
,, fine, 6 to 8 feet, 18*s.* per 100; extra strong, 8 to 10 feet, 45*s.* per 100.

EVERGREENS, ORNAMENTAL TREES AND SHRUBS.

AZALEA PONTICA, bedded, 4 to 6 inches, 6*s.* per 100, 50*s.* per 1000.
,, ,, bushy, transplanted, 1½ to 2 feet, 6*s.* per dozen, 45*s.* per 100; 2 to 2½ feet, 9*s.* per dozen, 65*s.* per 100.
BOX, Green, 1 to 1½ foot, 3*s.* per dozen, 16*s.* per 100.
,, 1½ to 2 feet, 4*s.* per dozen, 25*s.* per 100; 2 to 3 feet, 4*s.* 6*d.* per dozen, 30*s.* per 100.
LAUREL, Portugal, 1½ to 2 feet, 4*s.* per dozen, 30*s.* per 100.
,, ,, very fine, 2 to 3 feet, 8*s.* per dozen, 60*s.* per 100.
,, ,, extra fine round bushes, 3 to 4 feet diameter, 2¼ to 3 feet, 12*s.* per dozen, 90*s.* per 100.
LEDUM LATIFOLIUM, bedded, 3 to 6 inches, 50*s.* per 1000; 12 to 18 inches, 6*s.* per dozen, 40*s.* per 100.
MAHONIA (Berberis) AQUIFOLIA, 1½ to 2 feet, 10*s.* per 100; 2 to 3 feet, 15*s.* per 100.
RHODODENDRON, best hybrid, bedded, 3 to 6 inches, 8*s.* per 100, 60*s.* per 1000; 6 to 9 inches, 10*s.* per 100, 90*s.* per 1000; 9 to 12 inches, 14*s.* per 100.
,, Ponticum, fine dwarf, round bushes, 1 to 1½ foot, 25*s.* per 100, £10 per 1000; 1½ to 2 feet, 5*s.* per dozen, 30*s.* per 100; 2 to 3 feet diameter, 2 to 2½ feet, 6*s.* per dozen, 45*s.* per 100; 3 to 4 feet diameter, 3 to 4 feet, 18*s.* per dozen, 150*s.* per 100.
,, Cunningham's White, very bushy, 1¼ to 1½ foot, 50*s.* per 100; 1½ to 2 feet, 63*s.* per 100.
,, best named sorts, bushy, 18*s.* to 30*s.* per dozen.
THORN, new double scarlet (Paul's), 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.
,, double pink, 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100; 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.
,, ,, white, 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100; 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.
,, single scarlet, 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100; 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.
,, Cockspur, 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100; 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.
YEW, English, fine, large stock, 9 to 12 inches, 12*s.* per 100; 1¼ to 1½ foot, 20*s.* per 100; 1 to 2 feet, 5*s.* per dozen, 25*s.* per 100; 2 to 3 feet, 7*s.* per dozen, 45*s.* per 100; 3 to 4 feet, 12*s.* per dozen, 80*s.* per 100.
,, Irish, 2 to 3 feet, 8*s.* per dozen; 3 to 4 feet, 12*s.* per dozen,

To the Trade.

Home-grown GARDEN and AGRICULTURAL SEEDS.

H. AND F. SHARPE'S Wholesale Special Priced LIST of the above Seeds of 1875 growth is now ready; it comprises all the best sorts in cultivation. The quality is very fine, and the prices will compare favourably with those of other growers.

Seed Growing Establishment, Wisbech.

HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,

KNAP HILL NURSERY, WOKING, SURREY.

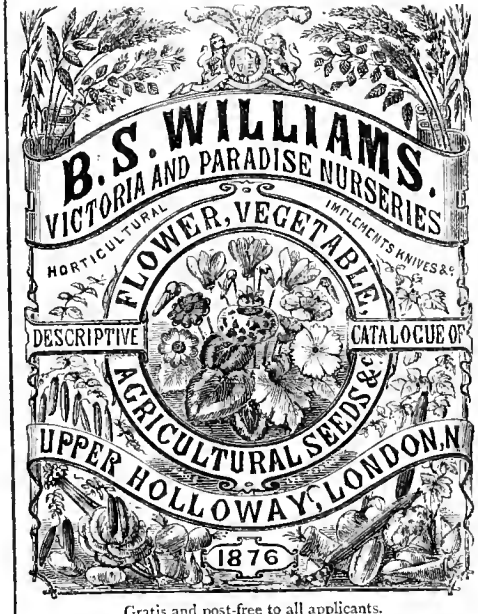
GLOXINIA CRASSIFOLIA GRANDIFLORA.

Magnificent strain, quite distinct. The leaves, which are very broad and fleshy, recurve so as to almost cover the pot; the flowers, which are much larger than in the old sorts, and of very brilliant shades of colour, and fine form. By sowing now on a gentle hotbed they may be had in bloom in autumn, and seedling plants always yield much the finest blooms. Erecta and horizontalis, separate or mixed.

Per packet, 1*s.* and 2*s.* 6*d.*, stamps or Post Office Order.

Seed CATALOGUE, sent free by post.

JAMES TYNAN, 68, Great George Street, Liverpool.



Gratis and post-free to all applicants.

B. S. W. begs to intimate that in the event of any of his Customers not receiving this CATALOGUE, if they will communicate with him, a Copy will be sent.

THE KNAP HILL CYPRESS,

Cupressus Lawsoniana erecta viridis.

ANTHONY WATERER

Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices :—

3 feet high, 2½ feet in circumference, 30*s.* per doz.
4 feet high, 3 to 4 feet do., 42*s.* to 60*s.* per doz.
5 feet high, 4, 5 and 6 ft. do., 10*s.* 6*d.*, 15*s.* to 21*s.* each.
6 and 7 feet high, 6 to 7 and 8 ft. do., 21*s.* to 31*s.* 6*d.* each.

No cuttings have been taken from the plants here referred to, which are simply perfect in growth and splendidly rooted.

KNAP HILL NURSERY, WOKING, SURREY.

FRANCIS & ARTHUR DICKSON & SONS.

106 Eastgate St. & The "Upton" Nurseries CHESTER.

Illustrated Catalogue of Vegetable & Flower Seeds,

Post free on Application.

Quality unsurpassed.

CHOICE SEEDS, &c.—

CUCUMBER, Beauty of St. Albans, the best of the Telegraph section, 1*s.* 6*d.* per packet.
,, Telegraph, true stock, 1*s.* per packet.
,, Duke of Edinburgh (Daniels), 1*s.* per packet.
SOLANUM CAPSICASTRUM, hybrids, from plants selected from the three best stocks in Covent Garden, 6*d.* and 1*s.* per packet.
LOBELIA PUMILA MAGNIFICA, 1*s.* per packet.
CELOSIA PYRAMIDALIS, saved from Mr. R. S. Yates' fine strain, 6*d.* and 1*s.* per packet.
LOBELIA PUMILA MAGNIFICA, seedling plants, 5*s.* per 100; plants from cuttings, 12*s.* 6*d.* per 100.

All orders prepaid.

J. BESTER, White Hart Lane, Tottenham, N.

WM. PAUL AND SON

HAVE TO OFFER :—

SPECIMEN ROSES,

2 to 5 feet, 5*s.* to 105*s.* each, loaded with incipient flower-buds, suitable for exhibiting this year.

*** Thousands of young plants, Standards and Dwarfs, at the customary nursery prices.

SPECIMEN CAMELLIAS,

3 to 10 feet, 21*s.* to 30 guineas each; handsome trees, with bloom.

*** Thousands of young plants of all the best sorts, with bloom, at the ordinary nursery prices.

SPECIMEN FRUIT TREES.

Apples, Pears, Cherries, Plums, &c., pyramids, well set with fruiting buds, will bear a crop this year; 3 to 8 feet high, well balanced trees, 30*s.* to 60*s.* per dozen.

*** Thousands of young trees of every kind at the usual Nursery prices.

SPECIMEN EVERGREENS and SHRUBS of all the best sorts; acres to select from; 1000 species and varieties; individual prices on application.

SPECIMEN LIMES, 12 to 14 feet, 36*s.* to 48*s.* per dozen.
,, PLANES, 12 to 18 feet, 7*s.* 6*d.* to 15*s.* each.
,, ELMS, 12 to 14 feet, 24*s.* per dozen.
,, TURKEY OAKS, 12 to 14 feet, 36*s.* per dozen.

*** A large collection of Avenue, Roadside, and Park trees, &c.

Priced descriptive CATALOGUES post-free on application.

IMPORTANT.—Observe the Christian Name—

WM. PAUL AND SON, Paul's Nurseries, Waltham Cross, Herts.

DAVISON AND CO., White Cross Nurseries, Hereford, offer the following :—

APPLES, Cider sorts, 7 to 8 feet, 22*s.* per dozen; £8 per 100, £75 per 1000.
,, Dessert, 6 to 7 feet, 18*s.* per dozen, £7 per 100, £63 per 1000.
ROSES, Dwarf, selected from Rose Catalogue, 8*s.* per dozen, 60*s.* per 100, £25 per 1000.
,, Standard, selected from Rose Catalogue, 16*s.* per dozen, £6 per 100, £50 per 1000.
AMERICAN ARBOR-VITÆ, 3 to 4 feet, 20*s.* per 100.
AUSTRIAN FIR, 2½ to 3½ feet, 15*s.* per 100; 3½ to 4½ feet, 25*s.* per 100; 5 to 6 feet, 35*s.* per 100; all fine plants.
BEECH, common, 5 to 6 feet, 12*s.* per 100.
BIRCH, Weeping, 5 to 6 feet, 10*s.* per 100.
COTONEASTER, 2 to 3 feet, 20*s.* per 100.
CHESTNUT, Horse, 6 to 7 feet, 25*s.* per 100.
LAUREL, Common, 4 feet, 30*s.* per 100.
,, Portugal, 2 to 2½ feet, 40*s.* per 100.
PINUS INSIGNIS, 3 to 4 feet, 70*s.* per 100.
SCOTCH FIRS, 7 feet, 25*s.* per 100.
THUJA LOBBII, 2 to 3 feet, 30*s.* per 100.
ABIES ALBERTIANA, 4 feet, 15*s.* per dozen.
,, DOUGLASII, 7 to 8 feet, 60*s.* per dozen.
,, NORDMANNIANA, 2½ to 3 feet, 27*s.* per dozen.
,, ,, very fine, 3 to 4 feet, 48*s.* per dozen.
,, PINSAPO, 4 to 5 feet, 72*s.* per dozen.
ARAUCARIA IMBRICATA, 2 to 3 feet, 42*s.* per dozen.
ACER, sorts, 9 to 10 feet, 18*s.* per dozen.
AILANTUS, 8 to 9 feet, 30*s.* per dozen.
BERBERIS JAPONICA, 3 feet, 18*s.* per dozen.
BEECH, Common, 7 to 8 feet, 9*s.* per dozen.
BIRCH, Silver Weeping, 9 to 10 feet, 9*s.* per dozen.
BIOTA AUREA, 1½ foot, 24*s.* per dozen.
,, ELEGANTISSIMA, 1½ to 2 feet, 42*s.* per dozen.
CATALPA SYRINGIFOLIA, 7 to 8 feet, 18*s.* per dozen.
CUPRESSUS LAWSONIANA, 4 feet, 12*s.* per dozen.
CEDAR, Red, 4 to 5 feet, 12*s.* per dozen.
CHESTNUTS, Horse, 7 to 8 feet, 12*s.* per dozen.
,, ,, Scarlet, 7 to 8 feet, 24*s.* per dozen.
LABURNUM, 9 to 10 feet, 24*s.* per dozen.
LIME, 10 to 12 feet, 20*s.* per dozen.
SYCAMORE, 7 to 8 feet, 9*s.* per dozen.
ONTARIO POPLAR, 12 feet, 18*s.* per dozen.
YEWS, Pyramid, 5 to 6 feet, 30*s.* per dozen; 8 to 9 feet, fine, 72*s.* 6*d.* each.
ASPARAGUS, Giant, 15*s.* per 1000; Connover's, 30*s.* per 1000.
SEAKALE, 2-yr., 10*s.* per 100.

To the Trade.—Surplus Nursery Stock.

JOHN PERKINS AND SON beg to offer the following :—

APPLES, Standards, fine, 50*s.* to 60*s.* per 100.
PLUMS, Standards, fine, 70*s.* per 100.
APRICOTS, Dwarf-trained, 24*s.* to 30*s.* per dozen.
NECTARINES, Dwarf-trained, 24*s.* to 30*s.* per dozen.
CURRANTS, Black Naples, very fine, 76*s.* per 1000.
,, Victoria or Houghton Castle, 60*s.* per 1000.
GOOSEBERRIES, 10*s.* per 100.
ROSES, Standards, 10*s.* per dozen, 75*s.* per 100.
,, half-Standards, 8*s.* per dozen, 60*s.* per 100.
,, dwarf on Manetti, 25*s.* per 100.
BEECH, transplanted, 2 to 3 feet, 20*s.* per 1000.
HAZEL, transplanted, 2 to 3 feet, 20*s.* per 1000.
HORNBEAM, transplanted, 1½ to 2 feet, 18*s.* per 1000; 2 to 3 feet, 25*s.* per 1000
PRIVET, Evergreen, transplanted, very fine, 1½ to 2 feet, 15*s.* per 1000; 2 to 3 feet, 18*s.* per 1000; 3 to 4 feet, 20*s.* per 1000.
PINUS AUSTRIACA, extra transplanted, stout, and very fine, 2 to 3 feet, 15*s.* per 100.
WHITETHORN or QUICK, 2-yr. transplanted, 8*s.* per 1000; 3-yr. transplanted, 11*s.* per 1000; 4-yr. transplanted 15*s.* per 1000.
BLACKTHORN, extra fine, 1-yr., 1 to 2 feet, 5*s.* per 1000.
,, transplanted, fine, 1½ to 2 feet, 10*s.* per 1000; 2 to 3 feet, 12*s.* per 1000.

52, Market Square, Northampton.

MR. LAXTON'S NEW PEAS FOR 1876.

MESSRS. HURST & SON

Have been entrusted with the introduction of the following Two First-class New Peas raised by MR. LAXTON, and which are recommended as being of very high quality and distinct:—

THE SHAH.

A short-strawed, early white wrinkled marrow, of the same height and as early as "Ringleader," described by the Royal Horticultural Society as having very full pods, produced abundantly, and containing from eight to nine very large Peas of very fine quality, and as being an exceedingly fine and and early prolific white wrinkled variety. First-class Certificate Royal Horticultural Society.

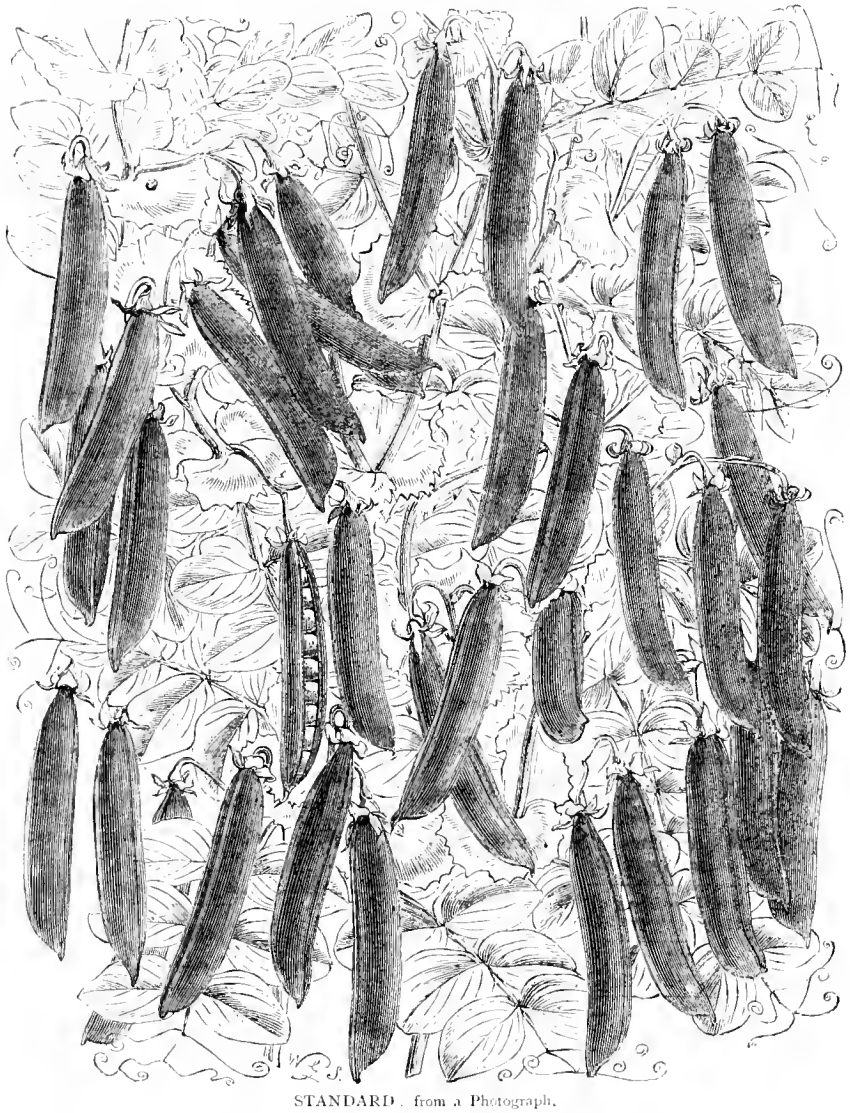
Price 5s. per sealed quarter-pint packet.

STANDARD.

Unquestionably the most useful maincrop blue wrinkled Pea yet raised, and will take the same place as a prolific market Pea of high quality amongst blue wrinkled marrows as "Fillbasket" has in round Peas. Described by the Royal Horticultural Society as having long curved pods containing from nine to eleven Peas of large size and excellent quality in each; and as being a very handsome and prolific Pea.

Mr. Laxton, in a letter to us, says, "I cannot find a fault with this Pea," and Mr. Gilbert, of Burghley, says of it, "It is certainly the best Pea I know." Height 3 feet.

Price 5s. per sealed quarter-pint packet.



STANDARD. from a Photograph.

The following Novelties of 1875 can also be supplied:—

SUPPLANTER.

A first-rate Exhibition Pea of fine quality—the earliest of the "Veitch's Perfection" type. Height, 3 feet, handsome, and very prolific, producing very large pods in pairs; plant very robust and vigorous. First-class Certificate.

Price, 5s. per sealed half-pint packet.

CONNOISSEUR.

A most distinct and delicious late Pea, raised from "Ne Plus Ultra." Height 6 feet.

Price 5s. per sealed half-pint packet.

UNIQUE.

A very handsome and prolific dwarf early Pea with long deep green coloured pods, coming into use at the same time, and of the same height as "Little Gem." First-class Certificate.

Price, 5s. per sealed half-pint packet.

DR. HOGG.

An early "Ne Plus Ultra," coming in one week after Dillestone's. Height, 3 feet. The earliest green wrinkled marrow, very sweet, and of a beautiful deep green colour. First-class Certificate.

Price 5s. per sealed half-pint packet.

☞ **£20 will be offered in Prizes for Mr. Laxton's Peas in 1876, viz.:—£10 in Four Prizes at the Royal Horticultural Society's Show, in July next, for any six varieties introduced by us, to include the "Shah" and "Standard," 50 pode of each; and £10 to repeat the Prizes at the Society's Provincial Exhibition.**

"Omega," the finest Late Pea, and "William the 1st," the Earliest Green Wrinkled Marrow, in quantity at Special Rates on application. For other varieties of Mr. Laxton's Peas, see our General List.

HURST & SON, 6, LEADENHALL STREET, LONDON, E.C.

WELLINGTONIA GIGANTEA

AUREA VARIEGATA.

	Feet.	Inches.
Height	24	6
Circumference of Branches	32	6
„ of Trunk	3	4
Season's Shoot	1	6

Originated at the Lough Nurseries, Cork.

They have been Planted by the following Royal and Noble Hands:—

His Royal Highness the Prince of Wales, at Sandringham.
Her Royal Highness the Princess of Wales, at Blenheim (to mark her visit).
His Royal Highness the Duke of Edinburgh, at the Vice-Regal Lodge.
His Excellency the Lord Lieutenant, at Althorpe.
His Grace the Duke of Devonshire, at The Castle, Lismore
His Grace the Duke of Leeds, at Gog-Magog, Cambridge
Her Grace the Duchess of Manchester, Belfast Botanic Gardens.
His Grace the Duke of Manchester, at Tangragee and Kimbolton Castle.
His Grace the Duke of Marlborough, at Blenheim. House.
His Grace the Duke of Wellington, at Strathfieldsaye and Apsley
Most Noble the Marquis of Waterford, at Curraghmore.
Right Hon. the Earl of Abergavenny, at Eridge Castle, Tunbridge Wells.
Right Hon. the Earl of Annesly, at Castlewellan, County Down.
Right Hon the Earl of Aylesford, at Packington Hall, Warwick
Right Hon. the Earl of Bective, at Underly Hall, Westmorland.
Right Hon. the Earl of Cork, at Marston Hall, Frome.
Right Hon. the Earl of Clancarty, at Garbally, Ballinasloe.
Right Hon. the Earl of Devon, at Powderham Castle, Exeter.
Right Hon. the Earl of Ducie, at Sarsden House, Chipping-Norton.
Right Hon. the Earl of Dunraven, at Adare Manor, County Limerick.
Right Hon. the Earl of Harrowby, at Sandon Hall, Staffordshire.
Right Hon. the Earl of Powis, at Walcot Park, Dumbartonshire.
Right Hon. the Earl of Sefton, at Croxteth Hall, Liverpool.
Right Hon. the Earl of St. Germans, at St. Germans, Cornwall.
Right Hon. the Earl of Warwick, at The Castle, Warwick.
Right Hon. the Earl of Wicklow, at Shelton Abbey, Arklow.
Right Hon. the Countess of Kingston, at The Castle, Michelstown.
Right Hon. Lord Berwick, at Attingham Hall, Shrewsbury.
Right Hon. Lord Donegall, at The Court, Donegall.
Right Hon. Lord Otho Fitzgerald, at Oakley Park, Windsor.
Right Hon. Lord Hawkshaw, at Hollycombe, Hants.
Right Hon. Lord Huntingfield, at Heveningham, Suffolk.
Right Hon. Lord Kenlis, at Virginia Lodge, County Cavan
Right Hon. Lord Poltimore, at Poltimore Park, Exeter.
Right Hon. Lord Powerscourt, at Powerscourt, County Dublin.
Right Hon. Lord Skelmersdale, at Lathom House, Ormskirk, Lancashire.
Right Hon. Lord Wrottesley, at The Hall, Staffordshire.
Right Hon. Lady Langdale, at Eyewood, Herefordshire.
Right Hon. Lady Russell, at Chequer's Court, Herts.
Right Hon. Lady Pollen, at Redenham Hall, Andover.
Right Hon. Lady Rolle, at Bicton, Exeter.
Right Hon. Lady Tennisson, Carrick-on-Shannon, County Longford.
Sir Thomas Acland, Bart., at Killerton, Exeter.
Sir Henry Becher, Bart., at Ballygibben, Mallow.
Sir James Colquhoun, Bart., at Rosshhu, Dumbartonshire.
Sir C. Mills, Bart., at Hallingdon Court, Uxbridge.
Sir D. Norreys, Bart., at The Castle, Mallow.
Sir Richard Wallace, Bart., at Sudbourn Hall, Suffolk.

And by the leading Nobility and Gentry in the Kingdom.

The last-named had 40 splendid Trees for Avenue planting.

PRICES.

*1st	Size—Grand Specimens	5 feet	£5	5	0
2d	„ Splendid Plants	4 „	3	3	0
3d	„ Very fine ...	3 „	2	2	0
5th	„ Stout and good...	2 „	1	1	0
6th	„ Nice little Plants	1 „	0	10	6

* From the first set of plants, and same as those at Sandringham, Blenheim, Althorpe, and had by the Nobility chiefly.

All removed Spring 1875.

RICHARD HARTLAND,
LOUGH NURSERIES, CORK.

Genuine Seeds.

JOHN AND CHARLES LEE, Seedsmen to the Queen, invite attention to their new and extensive CATALOGUE of SEEDS for 1876. This Catalogue has been prepared with their usual care, and contains every novelty, whether home-grown or foreign, with the most minute and useful descriptions of both Vegetable and Flower Seeds. The prices of every article are the very lowest, considering the first-rate quality of the various stocks offered. The long standing of the house of LEE (125 years) is a sure guarantee of the excellence of their seeds and the soundness of their trading. Catalogues may be had post-free on application.

Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

PARKER AND BUSH (late J. NELSON), St. Michael's Hill Nursery, Bristol, have to offer the following :—

APPLES, Pyramid, of sorts, very strong, 21s. per dozen.
BEECH, Common, good transplanted, 3 to 4 ft., 40s. per 1000.
BIRCH, 3 to 4 feet, transplanted, 30s. per 1000; 4 to 5 feet, do., 60s. per 1000.
BAYS, Sweet, transplanted, bushy, 2 to 3 feet, 50s. per 100.
HOLLIES, Green, transplanted, 2 feet, 50s. per 100.
LAURELS, Portugal, bushy, 3 feet, 12s. per dozen.
,, Common, bushy to the ground, 3 to 4 feet, 20s. per 100.
OAKS, Evergreen, in pots, 2 to 3 feet, 75s. per 100.
PRIVET, Common, 3 to 4 feet, 30s. per 1000.
PEARS, Pyramid, in best sorts, very strong, 21s. per dozen.
SCOTCH FIRS, good transplanted, 2 to 3 feet, 20s. per 1000.
THORNS, Standard, Double Pink, 5 to 6 feet, 100s. per 100.
,, ,, Paul's Double Scarlet, 5 to 6 feet, 100s. per 100.
,, Quick, transplanted, 10s., 15s., and 20s. per 1000.
,, ,, transplanted, extra strong, 35s. per 1000.
YEWS, English, 3 to 4 feet, feathered to the ground, perfect pyramids, 100s. per 100.
ROSES, Dwarf, in sorts, strong, 30s. per 100.
VINES, Venn's Black Muscat, strong short-jointed canes, 6 to 7 feet long, 15s. each.
,, Black Hamburgh, strong planting canes, 5s. each.

AVENUE TREES.

	Girth 4 ft. from ground.
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10 inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8 ,,
MAPLES, Norway, 12 to 16 feet high ..	5 to 8 ,,
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10 ,,
,, Scarlet, 10 to 14 feet high	8 to 10 ,,
,, Double, 10 to 14 feet high	8 to 10 ,,
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10 ,,
ELMS, 15 to 18 feet	7 to 9 ,,

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.

Knap Hill Nursery, Woking, Surrey.

Bargains.

H. BLANDFORD, The Dorset Nurseries, Blandford, offers the following trees, which are exceedingly well grown, with plenty of roots and worth nearly double the money :—

CHERRIES, Morello, handsome fruiting trees, pyramids, 6 feet high, 25s. per dozen.
VINES, good planting canes of the following varieties, warranted true to name, viz :—Alicante, Bowood Muscat, Black Hamburgh, Buckland Sweetwater, Foster's Seedling, Gros Colman, Muscat of Alexandria, and Trebbiano, 3s. each, 30s per dozen.
ROSE, Dwarf, very fine, leading varieties only, 50s. per 100.
ASPARAGUS ROOTS, 4-yr. old, 3s. 6d. per 100, 30s. per 1000.
ARAUCARIA IMBRICATA, 2 feet, fine, 30s. per dozen.
ARBOR-VITÆ (American), 7 to 8 feet, 21s. per dozen.
CUPRESSUS LAWSONIANA, 6 to 7 feet, specimens, 25s. per dozen.
CEDRUS DEODARA, 1½ foot, transplanted autumn, 1874, 12s. per dozen, 90s. per 100.
HIBISCUS SYRIACUS, 4 to 5 feet, bushy, 9s. per dozen.
THUJA AUREA, 1½ foot, well furnished, 25s. per dozen.
,, ELEGANTISSIMA, 1½ foot, 25s. per dozen.
HORNBEAM, 5, 6, and 7 feet, 10s., 15s., and 25s. per 100.
CHESTNUT, Horse, fine for avenues, 8 to 10 ft., 80s. per 100.
OAK, English, quartered, 7 to 8 feet, 50s. per 100.
SPRUCE, 1½ foot, 45s. per 1000.
WHITETHORN (Quick), 4-yr. transplanted, 2½ to 3 feet, extra stout, clean, and well rooted, 20s. to 25s. per 1000.
Special offer will be made to the Trade.

MARTIN'S LONG GUN CUCUMBER.—Some quarter of a century ago Mr. Arthur, then traveller for a large firm of Nurserymen in Edinburgh, found this invaluable Cucumber being grown by a Gamekeeper named Martin, in the East Lothians; Mr. Arthur at once recognised its superiority over all other varieties, which character it has since maintained. Amongst the very few who have had the fortune to obtain the original stock, Mr. Arthur gave to our Mr. John Reid a few seeds under the very appropriate name of MARTIN'S LONG GUN. The original name of Martin's has been replaced by a firm who received a few seeds as a gift from Mr. John Reid, who has grown the original stock for over 25 years, and during his extensive experience he has failed to meet with any variety, including the many novelties, equal in flavour or such abundant croppers. It grows from 20 to 24 inches, and we confidently offer it as one of the very best grown. In sealed packets at 2s. 6d. each.

REID AND CO., Appley Bridge Nursery, Wigan.

CERASUS LAURO-CERASUS CAMELLIÆFOLIA (the Camellia-leaved Laurel).—This extraordinary and elegant Laurel was raised by Mr. Wood, of Woodbridge, in Suffolk, on whose behalf we are now offering it for the first time to the public. The leaves are light green, like the common Laurel, but differ from it in shape in being elegantly curled, like a Camellia leaf, or more closely resembling in form the beautiful Croton volutum.

The effect of the plant, grown as a pyramid and well pruned, is peculiarly striking, and if planted close as an edging plant, and pinched well back, it produces a very neat and pleasing appearance.

We propose to distribute this well-known variety at the following low prices, being desirous of seeing it largely used, as it deserves to be, for the purposes above-mentioned :—Per plant, 5s.; per dozen, 42s. Special offer to the Trade.

J. AND C. LEE, Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

THE SNOWFLAKE POTATO.

SUTTON & SONS

Having carefully tested this fine Potato in their Trial Grounds two years since, were among the first to recommend it as the best of all the American varieties, an opinion which has been confirmed by all practical gardeners. They have imported largely, and can offer fine tubers as follows :—

Price, per bush, 35s.; per peck, 10s. 6d.; per gal, 6s.

The value of planting imported tubers cannot be over estimated, and the following extract from the *Gardeners' Chronicle*, January 8, 1876, is worthy of attention :—"American Potatos rapidly degenerate after importation to this country. Newly imported seed produces wonderful crops."

Descriptive List of other varieties gratis and post-free.

SUTTON & SONS,
THE QUEEN'S SEEDSMEN, READING.

MESSRS.

Sutton & Sons

PRIZES at the MEETINGS
OF THE
Royal Horticultural Society, 1876.

EIGHTEEN

FAC-SIMILE OF MEDAL.

FAC-SIMILE OF MEDAL.

GOLD, SILVER and BRONZE MEDALS,

With valuable Money Prizes, amounting in all to nearly

ONE HUNDRED GUINEAS,

WILL BE OFFERED BY

MESSRS. SUTTON AND SONS

AT THE

Various Royal Horticultural Society's Meetings during 1876.

Full Particulars and Conditions of Competition gratis and post-free on application.

SUTTON & SONS,
THE QUEEN'S SEEDSMEN, READING.

SUTTONS'
POTATOS FOR PLANTING

SUTTONS' DESCRIPTIVE LIST
OF THE BEST
English and American Seed Potatos
Is now ready, and may be had gratis and post-free.

SUTTON & SONS,
THE QUEEN'S SEEDSMEN, READING.

FINE AVENUE TREES,
Straight and Handsome.
CHESTNUTS, Horse, 10 to 12 feet.
CHICHESTER ELMS, 10 to 12 feet.
LIMES, 10 to 12 feet.
NORWAY MAPLE, 10 to 12 feet.
OAKS, Turkey or Levant, 9 to 10 feet.
SYCAMORE, 10 to 12 and 12 to 15 feet, very straight.
ROBERT F. DARBY, The Nurseries, Cirencester.

HANDSOME LAWN TREES and EVERGREENS.
PICEA MAGNIFICA, true, 2 to 5 ft., 21s. each and upwards; P. AMABILIS, true, 2 to 3 feet, 10s. 6d. each and upwards; P. NOBILIS, 1 to 6 feet, 2s. each and upwards; P. NORDMANNIANA, selected varieties, 5 feet, 7s. 6d. each and upwards; P. PARSONSI, 4 to 10 feet, 15s. each and upwards; P. NOBILIS GLAUCA, 2 to 5 ft. 7s. 6d. each and upwards.
CUPRESSUS LAWSONIANA, in fine selected variegated and other varieties.
RETINOSPORA, in great variety, variegated and others.
THUJA, CUPRESSUS, CEDRUS, and ABIES, in many varieties, and nearly every variety of CONIFERÆ, offered at very low prices, to effect a clearance.
Some of the above, being selected seminal varieties, are very magnificent specimens. They have been carefully transplanted and grown for Sale. Application, either personally or by letter, at The Gardens, Whitchurch Rectory, Edgware, N.W., will receive every attention.

NEW PEAS
FOR THE PRESENT SEASON.

KNIGHT'S NEW PEA, "THE STAR OF INDIA."

A fine new late wrinkled marrow Pea, growing to the height of about 3 feet, with fine long well-filled pods, containing Peas of a delicious flavour. It keeps on the bloom much longer than most other Peas of the same class, and will be found a desirable acquisition for exhibition and market gardening purposes.

Per quart, 5s.; *per pint*, 3s.

GRAYSON'S "EAST ANGLIAN."

A new and distinct early dwarf wrinkled marrow, of superior quality, large size, and great productiveness, coming in for use a week earlier than "Champion of England." The plants are of robust and branching habit, the pods broad and well filled. It has been spoken of very highly by numerous Gentlemen's Gardeners, as well as by large Growers for Market, to whom it was sent for trial last season. Height, 2 feet.

Per quart, 2s. 6d.; *per pint*, 1s. 6d.

DUKE OF CONNAUGHT (Knight's).

This fine new Pea is of branching habit, about 3 feet high, very prolific and bearing large curved pods, containing seven to eleven Peas, which are of excellent flavour; useful for second and general crop, also for late sowing, as it is never affected by mildew. A fine exhibition and market Pea.

Per quart, 2s. 6d.; *per pint*, 1s. 6d.

Prices to the Trade on application.

NUTTING & SONS,
SEED WAREHOUSES, 60, BARBICAN,
London, E.C.

DAVID LLOYD AND CO. (LIMITED).
CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.
Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following :—
J. T. RUBERY, 88, Rumford Place, Liverpool.
SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
R. AND J. TAYLOR, 17, Vachel Road, Reading.
AGENTS WANTED.

LEE'S NEW SWEET-SCENTED VIOLET, "PRINCE CONSORT."
Flowers very large, deep bluish-purple at first opening, but changing to blue afterwards; very sweet-scented; footstalks long, stout, mostly erect; growth compact, foliage large, very deep green, nearly circular, very handsome, hardy.
This is a most advanced improvement on "The Czar" in every way. Flowers twice the size, nearly round in shape; foliage the same in some respects, but much deeper green, and much more compact in growth—altogether a handsome plant.
N.B. I consider "Prince Consort" to be worth over £1000 to me while I retain it, and I do not intend to let it out for less.—See Advertisement, November 25, 1875.
Price 10s. 6d. for four plants, and 6d. package; or 30s. for one dozen plants, and 1s. for package. Less than four plants not sent out.
VICTORIA REGINA, 6s. per dozen plants; less not sent out.
GEORGE LEE, F.R.H.S., Market Gardener, Clevedon Somerset.

Finest Frame Cucumbers.

WOOD AND INGRAM offer fine Seed of the following well known varieties, saved in separate houses :—

ROLLISSON'S TELEGRAPH, for forcing, eight seeds for thirteen stamps.

MONRO'S DUKE OF EDINBURGH, for general purposes. Two hundred and three fruit of this variety were grown at once by W. & I. in a space of 84 feet by 4 feet. Eight seeds for thirteen stamps.

DANIELS' DUKE OF EDINBURGH, the finest for exhibition, growing from 30 to 36 inches long, and an immense bearer. Six seeds for thirteen stamps.

The Nurseries, Huntingdon.

To the Trade and Others.

SURPLUS STOCK, CHEAP.

VINES, fruiting and planting; dwarf-trained PEACHES, NECTARINES, PLUMS, and CHERRIES; BLACK CURRANTS; LAURELS, Common, 3 to 6 feet; PRIVET, 3 to 5 feet; CHESTNUTS, Horse, 6 to 10 feet; Scarlet do., 6 to 8 feet; ELMS, 6 to 8 feet; MAPLES, Common, Norway, and Scarlet, 6 to 9 feet; POPLARS, Abele, Black Italian, and Balsam, 6 to 10 feet; Lombardy do., 6 to 12 feet.

The above are all clean and well grown. Price on application to

B. MALLER, The Nurseries, Lee and Lewisham, S.E.

To Market Gardeners and Others.

SUTTON AND SONS can offer

Suttons' Ringleader Peas	Veitch's Perfection Peas
Suttons' Racehorse Peas	Scimitar Peas
Little Gem Peas	Bedman's Imperial Peas
Fortyfold Peas	Harrison's Glory Peas

Suttons' Improved Early Champion Peas.

Of true stocks, at moderate prices for large quantities.

Reading, Berks.

Budded Chestnuts, Hybrid Hollies.

CHESTNUTS, Scarlet, Double White, &c., 2-yrs. budded, 2 to 3 feet, 30s. per 100.

HOLLIES, Hybrid, from seed, 9 to 12 inches, 25s. per 100.

RETINOSPORA PISIFERA AUREA, 9 to 12 inches, 84s. per 100. Cash.

WALKER AND CO., Farnborough Station, Hants.

Roses on the Manetti Stock, Suitable for any Soil.

GEORGE GRAY AND SON offer, of their usual fine quality, 500 varieties, including all the best sorts known, at 6s. to 9s. per dozen, 50s. to 65s. per 100. The Manetti stock is acknowledged the best for dwarf Roses, producing no suckers from the root, which are so troublesome from the Brier when established. Our dwarf Roses are budded very low, and are finely grown. CATALOGUES free.

Nurseries, Chertsey, Surrey.

VEITCH'S SELF-PROTECTING AUTUMN BROCCOLI.

JAMES VEITCH & SONS

HAVE MUCH PLEASURE IN DIRECTING ATTENTION TO

THIS VERY VALUABLE BROCCOLI

FOR AUTUMN AND EARLY WINTER USE.

The plant is of robust but upright growth, and the heads, which are beautifully white, firm, and compact, are thoroughly protected by the foliage, and remain a long time fit for use. It will be found extremely valuable as a succession to our Autumn Giant Cauliflower, which has met with so much approval, and is now an established favourite in all gardens.

Mr. WESTCOTT, *gr., Raby Castle, writing Nov. 11, says*:—"I am now commencing to cut some splendid heads of the new Broccoli you sent me for trial. It is evidently a variety distinct from any one I am acquainted with, and from its splendid protecting habit, short and immensely hard woody stem, I am under the impression it will stand uninjured many degrees of frost, which will insure it to be a great acquisition as an early winter variety. The plants are of immense strength, and the heads, both in size, texture, and colour, all that can be desired."

In sending us some specimens of this Broccoli in the middle of January, Mr. WESTCOTT *says*:—"I think they will be found marvellous specimens of self-preservation, having withstood six weeks of most severe weather, frequently having had 29° of frost; so that I think you will admit all I have said of it has fully been borne out."

Mr. PERKINS, *gr. to* Lord Henniker, *Thornham Hall, says*—"It comes in just as the Autumn Giant and other Cauliflowers are going out, and is, therefore, most invaluable. It is quite distinct, and also wonderfully self-protecting: some rows of it at this place have withstood 13° of frost last night (Nov. 23, 1874). Wherever a long succession of Cauliflower is required this must be the one for late use."

Extract from "Journal of Horticulture," Nov. 26, 1874.—"We have had brought to our notice one of the most perfect self-protecting Broccolis it has ever been our fortune to meet with. So thoroughly self-protecting is it that the beautiful white head is hidden as completely in a mass of foliage as the proverbial needle was in a bundle of hay. One has literally to hunt for the head, and when it is found it is the model of what a head of Broccoli ought to be—even and solid, of perfect colour, and not more than 4 to 5 inches in diameter—just such an object as families of refinement would like to see on their table. We hope that Messrs. Veitch will, in other vegetables as they have in this, take the lead in the introduction of a class which shall serve more as an ornament to a gentleman's table than many of the novelties which have been offered to the public of late years."

Price, 2s. 6d. per packet.

Seed Catalogue now ready, and will be forwarded post free on application.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON, S.W.

NOW READY,

NURSERY CATALOGUES FOR 1875-76.

WILL BE SENT POST FREE UPON APPLICATION.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),

EDINBURGH,

AND

54, BISHOPSGATE STREET WITHIN, LONDON, E.C.

BUSINESS ESTABLISHED, 1770.

OSBORN & SONS

BEG TO ANNOUNCE THAT THEIR ANNUAL

CATALOGUE of KITCHEN GARDEN and FLOWER SEEDS

For 1876

IS NOW READY, AND WILL BE FORWARDED, POST FREE, ON APPLICATION.

It contains a choice selection of all the best and most approved kinds of Vegetable and Flower Seeds, also the leading Novelties, including:—

OSBORN'S FORCING FRENCH BEAN, which has been proved one of the best and most prolific.

OSBORN'S SELECT RED BEET (or Dell's Crimson).

OSBORN'S WINTER WHITE BROCCOLI, undoubtedly one of the best, if not the best mid-winter variety in cultivation.

FULHAM NURSERIES, LONDON, S.W.

STANDARD and DWARF ROSES.—An extensive collection of best exhibition varieties, and of very good growth, to be disposed of. Principal varieties—Alfred Colomb, Charles Lefebvre, Marie Baumann, Baroness Rothschild, Etienne Levet, La France, Francois Michelon, Louise Van Houtte, Marquise de Castellane, Countess of Oxford, Pierre Notting, Duke of Edinburgh, Madame Lachrarme, Madame Victor Verdier, Marechal Niel, Gloire de Dijon.

GARDENER, St. Peter's Vicarage, Coventry.

F. AND A. SMITH offer the following SEEDS, all of which are of the finest strains :—

BALSAM, 9 varieties, separate, 2s. 6d. collection.
" mixture of 20 colours, 1s. and 2s. packets.
CALCEOLARIA, Herbaceous, 1s. and 2s. 6d. packets.
CINERARIA, 1s. and 2s. 6d. packets.
INTERMEDIATE STOCK, Scarlet, Purple, and White, 6d. and 1s. packets
EAST LOTHIAN STOCK (true), 6d. and 1s. packets.
PRIMULA SINENSIS FIMBRIATA, separate or mixed colours, 1s. and 2s. 6d. packets.

Prices per weight of the above, and other choice Flower Seeds, upon application.

The Nurseries, West Dulwich, S.E.

Dr. Maclean Pea.

CHARLES TURNER begs to announce that the following Firms have received a stock of the above, and can supply the same :—

AUSTIN & MCASLAN	Glasgow.
BACKHOUSE, JAMES & SON	York.
BARR & SUGDEN	Covent Garden, W.C.
BULL, W.	Chelsea, S.W.
BURGESS & KENT	Stoke-on-Trent.
CARTER, JAMES, & CO.	Holborn, W.C.
CATTELL, J.	Westerham.
CLIBRAN & SON	Altrincham.
COOPER, C.	Plymouth.
COOPER, ROBERT	Fleet Street, E.C.
COOLING, E.	Denby.
CUTBUSH, W., & SON	Highgate, N
DANIELS BROTHERS	Norwich.
DICK RADCLYFFE & CO.	High Holborn, W.C.
DICKSON, BROWN & TAIT	Manchester.
DICKSON, JAMES, & SONS	Chester.
DICKSON & CO.	Edinburgh.
DICKSON, E. P.	Hull.
DOBSON & SONS	Isleworth, W.
DOWNIE & LAIRD	Edinburgh.
FARRELL, F., & SON	Dublin.
FISHER, HOLMES & CO.	Sheffield.
FRASER, J.	Lea Bridge Road, E.
HAYWOOD.	Worcester.
HENDERSON, E. G., & SON	St. John's Wood, N.W.
HEWITT, T.	Solihull.
HURST & SON	Leadenhall Street, E.C.
JACKSON & SON	Kingston.
KEYNES, J.	Salisbury.
LAIRD & SINCLAIR	Dundee
LAWSON CO., The	Southwark Street, S.E.
LEE, J., & CO.	Hammersmith, W.
LITTLE & BALLANTYNE	Carlisle.
LUCOMBE, PINCE & CO.	Exeter.
METHVEN & SON	Edinburgh.
MINIER, NASH & NASH	60, Strand, W.C.
NUTTING & SON	Barbican, E.C.
OSBORN & SONS	Fulham, S.W.
PARKER & BUSH	Bristol.
PAUL & SON	Cheshunt, N.
PERKINS & SON	Northampton.
PERRY, P. J.	Banbury.
PINE-APPLE NURSERY CO., The	Maida Vale, W.
PRINCE, G	Oxford.
ROBINSON, T.	Oxford.
ROBSON, J	Altrincham
ROLLISSON & SONS	Tooting, S.W.
RUTLEY & SILVERLOCK	Strand, W.C.
SHAW, J., & CO.	Manchester.
SHARPE, C., & CO.	Sleaford.
SIBBALD, T.	Bishop Auckland.
SMITHERS & CRICHTON	London.
STUART & MEIN	Kelso.
SUTTON & SONS	Reading.
THOMSON	Birmingham.
VEITCH, J., & SONS	Chelsea, S.W.
VEITCH, R. T.	Exeter.
VERTEGANS, R.	Birmingham.
WOOD & INGRAM	Huntingdon.
WHEELER, J. C., & SON	Gloucester.
WRENCH, J., & SON	London Bridge, E.C.
WAITE, BURNELL & CO.	Southwark Street, S.E.
WALKER, J.	Thame.
WHEELER, GEORGE	Warminster.

The Royal Nurseries, Slough.

ROYAL HORTICULTURAL SOCIETY.—SPECIAL PRIZES

FOR 1876.

FOR

FULL PARTICULARS

SEE

SCHEDULE

OF

The Royal Horticultural Society.

NEARLY

EIGHTY GUINEAS

AGAIN OFFERED IN CASH PRIZES BY

Carter's

THE QUEEN'S SEEDSMEN,

TO BE COMPETED FOR AT THE

MEETINGS of the ROYAL HORTICULTURAL SOCIETY.

FOR 1876.

FOR

FULL PARTICULARS

SEE

CARTER'S

VADE MECUM

For 1876.

Messrs. CARTER were the original promoters of this class of Prizes, and the success that has attended previous exhibitions has induced them to repeat the liberal schedule announced in the Society's programme for the coming season.

CARTER'S COMMANDER-IN-CHIEF PEA.

(See the Schedule of the Royal Horticultural Society for 1876.)

A very fine green wrinkled Marrow of exquisite flavour, *with many pods containing ten Peas in a pod.* The pods are sickle-shaped, and the height is 4 feet. During the past season the long curved pods of this variety, carrying a beautiful bloom, were to be observed in most of the collections of Peas which gained the prizes offered by ourselves and others at the various Horticultural Shows.

Price, per quart, 3s. 6d.; per pint, 2s. (sealed packets).

FOR FULL DESCRIPTIONS SEE

BETTERIDGE'S

International Prize Asters.

(See Schedule of the Royal Horticultural Society)

New Varieties of 1876 offered for the First Time:—

SNOWFLAKE or SNOWBALL.—A grand Aster; the flowers large and full. Colour pure snow-white.

PURPLE PRINCE.—Extraordinary size; colour rich velvety purple. Unquestionably one of the finest quilled Asters ever introduced.

PRINCE OF NOVELTIES.—This splendid novelty is strikingly distinct, the outer ring of the flowers is of a bright crimson-lake, the inner ring splashed irregularly with rose; centre pure white.

PRINCESS ALEXANDRA.—A greatly improved form of "Duchess of Edinburgh," already in cultivation. Colour bright crimson-rose, pure white centre.

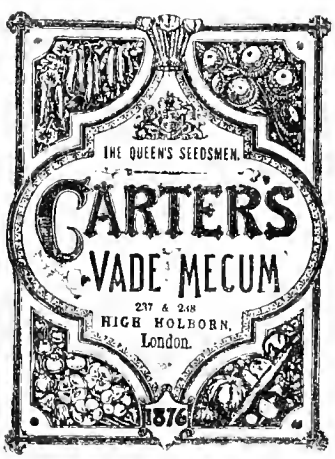
Price,

Per packet (each variety) .. 2s. 6d.
The Collection of 4 varieties 6s. 6d.

Caution.—*All Novelties sent out by us for the first time will bear our Registered Trade Mark, thus—*

From "Bell's Weekly Messenger," Jan. 3, 1876.

"We have received a copy of Messrs. Carter's beautifully got up and most useful 'Vade Mecum' for 1876, which, beside the large amount of practical information, is enriched with five coloured plates and some hundred engravings of new and choice vegetables and flowers. *Anything more elegant it would be difficult to conceive.*"



From the "Chamber of Agriculture Journal," Jan. 3, 1876.

"The highly embellished 'Vade Mecum' of Messrs. Carter & Co., the Queen's Seedsmen, contains five grand coloured plates and some hundreds of other illustrations of new and choice vegetables and flowers, and also a large number of new and splendid novelties introduced this season. Rare specimens of garden vegetables are also very effectively illustrated, and the short pithy explanations will be of great service to all who delight in horticultural studies, *and the general public will find more useful and important matter in the 'Vade Mecum' than in more pretentious works of reference.*"

Post Free, 1s. Gratis to Purchasers.

CARTER'S

Heartwell Early Marrow Cabbage.

(See Schedule of the Royal Horticultural Society.)

A distinct and excellent variety, indispensable as an Early Cabbage both for the gentleman's garden and for marketing purposes. The hearts are extremely firm, weighing from 4 to 6 lb., with scarcely any loose outside leaves, the flavour particularly mild and melting.

Price, per packet, 1s. 6d.

CARTER'S

Green Gage Tomato.

Awarded a First-class Certificate by the Royal Horticultural Society, October 7, 1874.

During the visit of H.R.H. the Prince Christian to our large display of Agricultural Roots and Vegetables at the Smithfield Show, His Royal Highness was pleased to express the most unqualified approval, both of himself and Royal guests, of the exquisite flavour and quality of Carter's Green Gage Tomato.

Price, per packet, 2s. 6d.

Caution.—*All Novelties sent out by us for the first time will bear our Registered Trade Mark, thus—*

HARDY'S "PEDIGREE" WINDSOR BEAN.

(See Schedule of the Royal Horticultural Society.)

The general heavy crop and habit fully establishes beyond doubt the fact of its being the most productive and valuable variety of Windsor Bean ever offered to the public.

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SATURDAY, JANUARY 15, 1876.

THE NEW PLANTS OF 1875.

THE novelties of the past year, if they present nothing of very startling importance—and further time and experience are necessary to judge in one or two cases whether this is so or not—will at least be found to be quite up to the average in point of variety and merit. Now that our great societies have suffered to fall into desuetude their function of introducing and distributing the productions of other climes, we have to thank some of our leading nurserymen, such as Messrs. Veitch, Bull, Low, and Williams, for most of the importations of novelties which are made, and, we may add, that in their hands there is no lack of a supply. A different field of operations, that of the rearing of novelties by the process of hybridisation or cross fertilisation, which might very well be occupied by amateur horticulturists having leisure time on their hands and a love of plants in their hearts, is not so much cultivated by them as might be expected, and it is left for the great nursery establishments, where the skill and persevering energy of such men as Dominy, Seden and Bausé are at command, to realise the greatest results in this department also. In neither of these departments, then, has there been any appreciable falling off during the season which has recently closed.

Hardy Plants.

We use this term with reservation, inasmuch as the capabilities of endurance possessed by many novelties cannot at first be ascertained, and we may include also some subjects which are known to endure but a slight degree of cold. Under this head we place what we regard as the grand acquisition of 1875—the splendid hybrid Lilium Parkmanni—of which we published a woodcut at p. 494 of our last volume, and of which a coloured plate is promised in an early number of the *Florist and Pomologist*. The immense size and rich colouring of this Lily place it far above even the magnificent L. auratum, which was one of its parents. Other bulbous hardy plants of merit are the Tulipa Eichleri, from Georgia, with bright crimson flowers, and intermediate in character between T. suaveolens and T. oculis solis; Galanthus Elwesii, a Snowdrop of Asia Minor, related to G. plicatus; and Crocus Crewei and C. veluchensis, both Grecian, both spring-flowering—the former allied to C. biflorus, and having white flowers with purple stripes, and the latter varying in colour from purple to pale violet and white.

Amongst hardy perennials Cypripedium japonicum perhaps deserves the first mention, not only for its beauty, but for its singularity of structure; a figure of this will be found at p. 625 of the third volume of our new series. Its two broad nearly opposite rhombeo-ovate plaited leaves give it a very distinct aspect, whilst its large flowers, with the lip suffused with pink, render it at the same time ornamental. This is from Japan, and has been obtained for us by the New Plant and Bulb Company. Caltha polypetala is a showy perennial, allied to our own Marsh Marigold, an attractive but somewhat plebeian flower from the Caucasus; Mertensia alpina, a boraginaceous plant from the Rocky Mountains, with its brilliant blue flowers, should be a welcome and brilliant addition to our rock plants; while amongst the Bellworts Mr. W. Smith's Campanula, an accidental hybrid between C. fragilis and C. pumila alba, producing its greyish-blue flowers abundantly on dwarf erect stems, and Wahlenbergia Kitaibelii, a decumbent plant with remarkably showy heads of violet-blue flowers, may be recommended for the same purpose. The French gardens have an Iris gigantea, said to be from Central Asia, and which grows 5 feet high or more, and bears white flowers striped with brownish-yellow near the base of the outer segments. A choice plant of garden origin, falling into this category, is Mr. Noble's Gynerium argenteum pumilum, which rejoices in perennial dwarfness, and has all the feathery beauty of its more stately ancestor. Clematis Viticella erecta, a French garden variety, bears very large deep blue flowers, and grows about a foot and a-half high.

Of the shrubby series we have in Mr. Jackman's Clematis alba magna gained without doubt the finest of all the white-blossomed varieties of this noble and popular climber, the sepals being so broad that any two meet together across the intervening one, and thus form a more solid-looking flower than we get in the case of any other variety. Cytisus Laburnum aureus, a sport with rich golden-hued leaves, will be a most telling plant in shrubberies and plantations. Besides these we have Balbisia verticillata, which though one of the Geraniaceæ, has large regular golden-yellow flowers, as if representing a monster Hypericum; Hymenanthera crassifolia, a small-leaved New Zealand evergreen with white berries; Ligustrum Quihoui, a pretty evergreen with bluntly rounded leathery leaves, and white flowers; Viburnum Sandankwa, an evergreen from Japan, with largish oblong-ovate leaves, and corymbs of white blossoms; and Cedrela sinensis, a Chinese tree with fine pinnate leaves, and found to be hardy in the climate of France.

Greenhouse Plants.

The most remarkable amongst new greenhouse plants is undoubtedly the Agave Victoriæ Reginæ, figured and described at p. 484 of the fourth volume of our new series, and subsequently figured and described in the *Revue Horticole* under the name of Agave Consideranti, which latter name, in accordance with the laws of botanical nomenclature, has to be suppressed. The plant, which comes from New Mexico, is remarkably distinct, and handsome in its own peculiar grotesque way. Agave xalapensis, and Agave pubescens are also acquisitions of the year—the first remarkable for its dense-flowered simple erect spike, the second for its downy transversely-barred leaves, in addition to a simple flower-scape. Both are Mexican. Two South African Aloes of ornamental character, Aloe drepanophylla, of the Pachydendron group, and A. Hanburyana, a handsome flowered species, comparatively hardy, have been added to our lists; and M. Linden figures a handsome white-edged Fourcroya from New Grenada, under the name of F. Lindeni. Another South African plant, which bears the garden name of Anthericum variegatum, is a very pretty minor representative of the hothouse Pandanus Veitchii, having broad, grassy, recurved leaves, elegantly striped and margined with white. Finally, in the sub-division of foliage plants, we have acquired from New Caledonia, through the agency of M. Linden, the beautiful plumy-branched evergreen tree which M. Brongniart has named Araucaria Balansæ.

The best of the flowering plants of the greenhouse section is undoubtedly the Blandfordia princeps or B. flammea princeps, as Mr. Baker calls it in the last issue of the *Botanical Magazine*. This is an evergreen perennial of great beauty, imported from New South Wales, and its spikes of large drooping bell-shaped bright orange-red flowers, are most attractive. Nerine japonica, a Japanese bulb, perhaps hardy, resembling the

Guernsey Lily in habit, the flowers appearing before the leaves, is strikingly beautiful, its umbellate heads of brilliant crimson flowers being fully 6 inches across. Another rather desirable bulb, this one South African, is the Freesia Leichtlinii, an Irid, with white blossoms striped with orange and changing to buff-yellow, borne on a curved one-sided spike, and moreover powerfully fragrant. Begonia coralina, a tuberous rooted kind, supposed to be Brazilian, with an erect branching stem, and brilliant coral-red drooping inflorescence, the male and female flowers in separate cymes, itself a handsome and effective plant, may be mentioned as illustrative of a new race of free-flowering varied and brilliant decorative plants, which we owe to Messrs. Veitch, Henderson, Lemoine, Van Houtte, and others; and which are due to the parental attachments formed between such species as B. boliviensis, Veitchii, Pearcei, Clarkii, and others. Senecio macroglossus, one of our recent acquisitions, figured by us in June last, at p. 749, is a free growing evergreen greenhouse climber, with smooth glossy stems, acutely-lobed Ivy-like leaves, and heads over 3 inches across of conspicuous yellow florets. To these may be added Theropogon pallidus, a neat and pretty liliaceous plant from the Himalayas, allied to Ophiopogon, and having tufts of grass-like foliage, and spikes of numerous pale rosy flowers, resembling pink Lily of the Valley; and the curious Wahlenbergia tuberosa, from Juan Fernandez, which has great fleshy tubers as thick as one's fist, and slender erect stems, bearing spreading linear leaves an inch long, and numerous panicled erect, bell-shaped flowers, which are white with bright bands of rosy red on the outer surface—at first sight very unlike one of the Campanulaceæ.

Stove Plants.

Here, as amongst greenhouse plants, the subjects we have to quote range culturally under two heads—those called foliage plants, and those called flowering plants. The most valuable acquisition of the year, and one of which, as we believe, we cannot yet realise the full value, falls by a kind of paradox into the former group, since from its brilliant colour it is reckoned amongst the flowering subjects, though the conspicuous parts for which alone it is cultivated consists of bracts or floral leaves. It will have needed little effort of the imagination to have concluded that we refer to the so-called double-flowered Poinsettia, which we have preferred to call P. pulcherrima plenissima, and of which a figure prepared from some of the first plants which have bloomed in this country was published by us at p. 17. That this will be much finer when it becomes more fully established, the original sketches, and more especially the dried native specimen, furnish sufficient indications; in the meantime it is sufficient to say that it is fully equal to the original and well-known type, plus the tufts of smaller bracts which the ramifications of the inflorescence produce. Perhaps the most useful of further additions to this flowering group and those likely to be most popular are such free-flowering subjects as Sonerila Hendersoni, Streptocarpus Greenii, Sciadocalyx Luciani, and Eranthemum hypocrateriforme. This Eranthemum is from tropical Western Africa, and is of shrubby habit, with quadrangular stems, small ovate leaves, and spikes of showy flowers which are straw-coloured outside and bright red within. The Sciadocalyx is a hybrid Gesnerad, clothed with soft crimson hairs, and having erect stems, large ovate-oblong leaves, and axillary velvety flowers, with a scarlet tube and rosy limb marked with crimson dots, much like a Tydæa, its parents being Sciadocalyx digitaliflora and Tydæa pardina. The Streptocarpus is also a hybrid raised between S. Saundersii and S. Rexii, and is a remarkably free-flowering and elegant plant, having a solitary broad leaf lying flat on the ground, and bluish-lilac purple-striped flowers very abundantly and continuously produced on branched scapes. The Sonerila is a dwarf free-blooming plant, in the way of S. margaritacea, with broader ovate olive-green leaves studded with pearly spots, and more compactly set bright rosy pink flowers with prominent yellow anthers. Of a different style, but likely to be of ornamental character, is Stenospermatium Wallisii, an Arad from the States of Colombia, with erect rooting stems and obliquely ovate-lanceolate leaves, while the large boat-shaped spathes, which are attached to slender pedicels issuing from the upper leaf axils, are nodding, ivory-white, surrounding a cylindric spadix—altogether very distinct from any other of the allied plants already in cultivation. To the same group, or rather to the Orontiad division, belong Anthurium Patinii and Anthurium candidum, two neat and elegant species of this popular genus, with white spathes. Of a more stately character we may instance the New Grenadan Gustavia gracillima, a Myrtaceous tree, with linear-lanceolate serrated leaves, 18 inches long, and flowers 4 inches across, produced sometimes from the leaf axils, sometimes from the old wood, of a rosy red colour, with yellow staminal tube and dark purple filaments. Similar in habit is the Clavija Rodekiana, from the same country, an evergreen tree with simple erect stems, shining obovate-oblong leaves a foot and a-half long or more, and numerous drooping racemes of bright orange-coloured flowers crowded amongst the bases of the leaves. Amongst Dracænas occurs a very ornamental flowering species—if we may trust the general aspect of the figure: we certainly cannot trust the details, which show five-parted flowers—in the New Caledonian Dracæna densicoma, which has deep green lanceolate spreading leaves upwards of a yard long and 4 or 5 inches broad, and dense drooping panicles of white flowers arranged in cylindrical spikes. One or two Bromeliaceæ, a group of plants which now seem to be receiving more attention than formerly, thanks probably to the promptings of Professor Morren, deserve to be mentioned in this category, namely, Æchmea spectabilis, a Guatemalan plant cultivated in the French gardens, in which the inflorescence is upwards of 3 feet high, compoundly panicled and pyramidal, and the flowers are very numerous, about 1½ inch long, the fleshy persistent calyx three-quarters of an inch long, conical ovate, of a beautiful rose colour, and the petals projecting about as much and of a deeper rosy crimson, the aspect of the plant being exceedingly beautiful; Vriesia Malzinei, a Mexican species with leaves stained of a dark red beneath, and bearing a spike of white flowers emerging from rubicund boat-shaped bracts; and Vriesia regina, figured at p. 235, vol. iii., a Brazilian plant of majestic growth, with leaves 4 feet long, and tall branched panicles in which the white flowers are arranged in two-ranked curved spikes which spring from the axils of rose-coloured bracts; these flowers have a strong perfume of Jasmine.

Ornamental plants of the foliage class are generally very numerous, and they are by no means deficient in the present year. New Crotons, new Dracænas, and new Calatheas and Marantas are plentiful, but we must pass over the first, noticing only the new three-lobed forms from the South Sea Islands, of which the two best which have as yet appeared are C. Disraeli and C. trilobus, the former figured by us at p. 420 of our fourth volume (n. s.), and the latter also figured at p. 224 of the same volume; they are a good deal alike, having long hastately lobed leaves with a wedge-shaped base, the middle lobe being elongated and somewhat spathulate; they have yellow ribs and veins with here and there spots of yellow, the markings taking on at maturity a crimson hue, but we have not yet seen them fully coloured in this country, the plants having been but recently imported, and having since been subjected to severe propagation. C. imperialis, from the New Hebrides, is also a fine and distinct variety, with densely-set leaves, which are bluntly rounded, half-twisted, and with an excrescent horn near the end, the colouring consisting of a yellow costa, margin, and blotches, all passing to crimson on full exposure and maturity. Of Dracænas the name is legion, and we must refer to the descriptions at pp. 615, 616, of Mr. Wills' numerous beautiful hybrids, of which, without as yet venturing to select the best, we may safely indicate D. Bausei, Willsii, Amaliæ, Fredericii, terminalis alba and violacea, as good and very distinct; while Mr. Bull's bronze rosy-flaked D. rex, and Messrs. Veitch's stocky dark-hued D. Taylori, and creamy-pink striped D. hybrida are good and desirable acquisitions. Marantas and Calatheas offer several very pretty additions, but none perhaps in advance of those already known, one of the best being C. Kummeriana, which has distichous lanceolate deflexed leaves, on long erect hairy stalks, the blade dark green, marked with oblong acuminate silvery bands above, and being of a deep purple beneath. In Artocarpus we have two novelties, which appear likely to be useful for subtropical gardening; the one, A. Cannoni, has rich bronzy crimson leaves, tinted with purple and variously three-lobed—the other, A. laciniatus, and its variety metallicus, has green or bronzy palmately-lobed leaves, with the leaves incisely toothed. In both the leaves are membranous in texture, and their value as decorative plants will depend on the degree of exposure they will be found to bear during summer. Another soft-leaved plant, the Acalypha Wilkesiana (tricolor) marginata, imported from the Fiji Islands, will probably prove an effective subject, its large ovate-acuminate toothed leaves being evenly and distinctly bordered with rosy carmine.

We must reserve for another occasion a few notes on certain special subjects omitted from the preceding selection, and consisting of Ferns, Cycads, Palms, and Orchids.

THE FRUIT CROPS OF GERMANY.

We glean the following particulars from the report, recently come to hand, on the fruit crops of Germany in 1874, by Dr. Lucas and Professor K. Koch. This report differs from our fruit reports in being based upon two series of observations—one on the prospects of the crops early in the season, succeeded by another on the actual results. The appearance of the report so long after date deprives it of much of the interest it would otherwise possess for our readers, but some of the particulars are worth putting on record here. The report has reference to Apples, Pears, Plums, and Walnuts, and 113 observers filled up the papers on the prospects of the fruit harvest, but only forty-five returned the actual results. This was unfortunate, for nearly all the provinces of Germany, as well as Austria and parts of Switzerland, &c., are represented in the preliminary report. The preceding winter, although mild as a whole, was very severe in many parts, and the blossom of stone-fruits was destroyed in the bud. In the vicinity of Heilbronn, for instance, (about 49° 8′ N. lat.), the mercury fell sometimes from 8° to 13° below zero of Fahrenheit's scale; but it was the late frosts and the unusually cold spring and early summer that effected the greater part of the damage. It is interesting to note that the observers in many stations recorded the fact that the crops were less injured in elevated situations: thus in the neighbourhood of Reutlingen the Apple orchards at an elevation of from 1500 to 2000 feet above the sea level were exceedingly productive. There was a difference of about 50° in the highest and lowest temperatures in many places both in May and June, so that Pears, Plums, and Walnuts suffered severely, and in many places (Walnuts particularly) were a total failure. At Hechingen there were 5° of frost at the end of April,

It is worthy of note that in many instances the crop turned out better than was anticipated, against a few in which the reverse was the case. Another feature of this report is an analysis of the number of votes given for each of a number of the most widely cultivated varieties. It appears that a great number of worthless new varieties are still grown in many districts. The writers of the report complain bitterly of the lack of principle in nurserymen who send out shoals of new varieties of inferior quality, though they admit there is a great hankering after novelty by the public. In illustration of the wisdom of keeping to a small number of well-tried varieties, the French people come in for high commendation. At Angers, in one of the largest fruit-tree nurseries in France, the following seven sorts only are raised in large quantities :—Williams' Bon Chrétien, Duchesse d'Angoulême, Easter Beurré, Louise Bonne d'Avranches, Beurré d'Amanlis, Beurré Diel, and Beurré d'Aremberg. On an average, from 30,000 to 40,000 each of the two first are sold every year, and about 20,000 of the other five put together. Of all the rest, including the most highly prized varieties, the numbers sold are quite insignificant. [It is the same in England. New sorts are unsaleable in the general trade. EDS.] In the valley of the Vistula there is a rapid increase in the culture of Pears for the markets of St. Petersburg, Stockholm, &c. In 1874, however, the sales were rather less, on account of the great heat (77° to 83° Fahr.) that prevailed at the time of gathering, which caused the dealers to fear that the Pears would decay in transit. Nevertheless, the following quantities were sent by way of Stettin to St. Petersburg :—550 three-bushel casks of the common Bergamot, 125 of the Grumkower, and 32 of the White Doyenné. On an average, the dealers paid 9*s.* to 12*s.* per cask. Although other good sorts, such as Napoléon and Beurré Diel, are grown in the same district, no purchasers for them can be found in St. Petersburg. The report concludes with tables of average monthly temperatures of a number of years and for 1874, at Königsberg, Berlin, Schwerin, Emden, Ratibor, Trier, Ulm, and Karlsruhe ; and the lowest temperatures at 6 A.M. during the months of April, May, and June, in 1874. But we have no space left for further extracts.

ASPARAGUS FORCING AT MOSCOW.

THE following mode of obtaining early Asparagus is communicated to this year's *Almanach du Jardinier*, by Dr. Amédée Philibert, M.D., of Moscow :—

In a part of the garden well sheltered from the north, and easily accessible, a spot is chosen in spring to establish an Asparagus bed. Rotten manure is dug in deep, so as at once to lighten and enrich the soil. This done, lines are drawn on it a foot apart from each other, and four-year-old Asparagus roots are planted, also a foot apart, along the lines, care being taken to select promising plants of as nearly the same strength as possible. After planting the soil is levelled, and covered with straw mats till the plants begin to start. Weeding during the summer, and watering when necessary, are scrupulously attended to.

Although in certain favourable cases they might begin to force the Asparagus in the autumn of the first year, it is not usually done until the second after planting. Towards the close of September the Asparagus beds are covered with a stratum of well-rotted manure or leaf-mould 14 inches thick, and which extends the same distance beyond the edges of the beds. When the moment for beginning to force arrives—October, November, December, or later still—a layer of fresh manure, ready to ferment, 28 or 30 inches thick, is spread over the entire surface of the first stratum, and the whole covered with matting. Three weeks afterwards they are able to cut fine Asparagus from 6 to 8 inches long. To get at the Asparagus, the beds are uncovered over lengths sufficient to supply the quantity required. When the cutting is taken, the plants are covered again exactly as in the first instance ; namely, with 14 inches of spent manure or leaf-mould, and an upper layer of fermenting dung some 30 inches thick.

The Asparagus so obtained, Dr. Philibert assures us, is excellent and eatable throughout its whole length. Such quantities are gathered that it is exported to all parts of the Russian empire. There are even dealers who buy it wholesale of the growers, in order to hawk it about by retail. In spite of the expenses of material and labour, which come rather high, forced Asparagus is sold at a relatively moderate price, which varies, nevertheless, with the abundance of the supply, and especially with the season—that is, with the period, more or less early or late, at which the Asparagus is ready to cut. Thus, in the beginning of February it is sold at from 70 to 80 copecks (from 2*s.* to 2*s.* 6*d.*) the pound, whilst it occasionally drops to 50 copecks (twenty pence), and sometimes lower.

THE TREES IN KENSINGTON GARDENS.

IT is needless to enlarge on the preciousness to the Crown and to the public of that inheritance which makes a breathing-ground for the close-packed and high-pressure-living multitudes of this city. It needs only a moderately intelligent examination of the wooded portions of the park and gardens, more especially the latter, to notice that a very large majority of the best trees are rapidly dying. The evil is not equally apparent in all parts, but in places it stares one in the face. If we take, for instance, the trees between the Albert Memorial and Kensington Palace, it is not too much to say that above 80 per cent. are diseased or dying. One remedy, indeed, seems to have been tried as a sort of panacea, and that is lopping and cutting off the tops of the trees. Besides producing, in many instances, the most hideous stumps, it is by no means certain, not even very probable, that the remedy is effectual, the spurt which the tree puts on in sending out shoots near the cut being purely temporary, and likely to be soon exhausted.

The decay of a forest is one of those things which goes gradually on till all at once the results became so apparent that the most sceptical are taken aback. It is so with many evils that progress by slow degrees. If something is not done, and that systematically, and on a well-considered plan, before many years are past we shall have our pleasant groves standing gaunt and dead. Then there will be a loud outcry ; and, as the work will fall on us all at once, over the whole extent of the forest—for such really it is—there will be large sums of money required and gigantic remedies taken in hand in that panic haste which forebodes failure.

Public parks, with considerable groves, avenues, and clumps of trees, ought to be managed just as systematically as forests, whose object is the supply of useful material rather than of picturesque beauty. It is true that the "rotation" or period during which the trees are to stand to attain felling maturity is different ; but trees will not live for ever, even in an ornamental park, nor can any considerable proportion of the wood be allowed to consist of old and stag-headed trees. A group or a solitary tree here and there in this condition may be beautiful and picturesque, but the more extensive groves which the holiday-makers love for their

"Boundless contiguity of shade"

must consist of trees in vigorous growth ; and this demands a systematic removal and replanting of individual trees throughout. Nor is this all. As some trees must go, it is surely a matter for consideration whether a large income might not be derived from the trees which are felled ; and hence it is desirable to remove them before the stem becomes worm-eaten and hollow. Great numbers of the trees now standing ought to be removed, or they will become absolutely worthless and unsaleable as timber.

In attempting to estimate the causes of the present state of things the public ought to be warned earnestly against empirical reasons hastily put forward. To jump at the conclusion that it is the "London air," or the age of the trees, or the species, or anything else, without a previous detailed observation and report by practical foresters, would be most dangerous. Some difficulties which the trees have to contend with are indeed apparent, and one at least of the general causes of failure probable. Of the former may be noticed one—the absence of that accumulation of dead leaves on the soil which in natural forests plays such an all-important part in the formation of vegetable soil and in the preparation of the purely mineral elements of the soil below to become capable of absorption by the roots. Some good might very probably be done by enclosing blocks, and allowing all leaves to lie and form soil. Here, of course, we should have an empirical outcry raised that such would be unhealthy. As, however, the elements which cause green leaves to smell so badly when decomposed are mostly parted with before the autumn fall of the leaves, it is not easy to be satisfied that there is any foundation for the fear. It is also probable that some at least of the Elms are dying of age, the tree not being long-lived, at any rate on such soil ; but this does not account for the evil as a whole.

Then, again, the drainage very probably has had the most marked effect on the growth of the trees ; but this must not be concluded without a consideration of levels and depths, and, where necessary, an examination of the subsoil and a comparison of the condition of the different growths observed in the localities differently affected.

I do not know whether any competent or trained forester has any control over the park or gardens as far as their arboriculture is concerned, or whether, if any such control exists, it is liable to shift and change with the Government of the day. However this may be, at present I would urge the formation of a small committee of practical and experienced foresters, including some experts in landscape gardening. Such a committee should be arranged before the season for working commences, so as to lose no time. The committee would report, first, on the existing condition of the growing stock, including, of course, in their report a careful consideration of the causes of disease and of the nature of the difficulties with which trees in such a situation will have to contend. To do this they will require (what probably exists already) the map of a complete survey, showing the local details, and including differences of level, local depressions, places where water lies, &c. Differences of soil would have also to be indicated.

The forest would then be divided for convenience of reference into blocks, or local subdivisions, with names ; and the trees in each block would be enumerated, their age recorded, and particulars of existing health and condition be noted. In short, the committee would, as their first step, prepare the exact data which on the Continent would be got together and put on record as preliminaries to drawing up the "working plan" or scheme for the future management of the forest. In such a small and exceptionally valuable track as the gardens and park this would be neither a very difficult nor a very lengthy task. This done, the committee would distribute the whole area into "compartments," according to the order in which they require to be taken in hand, and would lay down in great detail the immediate works, and in more general terms that of after years.

Their scheme would then be on record for future systematic guidance ; it would describe the felling to be done of dying and diseased trees—this, probably, would be pretty considerable, unless much of the stock that has to go sooner or later is to become perfectly unmarketable ; it would determine the all-important work of planting, describing the species to be planted in different parts, and thus avoid the error of planting young trees of precisely the same species as the growth which is already dying over their heads. Further, it would prescribe what portions of the gardens would have to be strictly closed against ingress during the treatment for the restoration of soil, &c., and might not improbably have to propose works (on which it is impossible to speculate) in connection with drainage.

I do not mean to offer this as an exhaustive description of what ought to be done ; I merely put it forward as an imperfect illustration of what is meant by a "systematic plan" as distinguished from a series of spasmodic works undertaken by this man or by that, on his own proper fancy. In brief, the requisites for a remedy are, to avoid rash and empirical conclusions as to causes, and to substitute accurate and recorded *data* and observations of fact ; to entrust the work, not to a single hand, but to a consultative body, large enough to embrace variety of experience and special talent—not large enough to degenerate from a working body into a debating club ; and finally to distribute the work to be done over a series of years, so that there may be a gradual and progressive improvement, with a tolerably equalised expenditure, and with a certain reasonable return from timber which needs removing to set against that expenditure. *An Indian Forester, in the "Times."*

ERYNGIUMS.

WE have more than once alluded to the South American species of this genus, which flowered at Kew last autumn (see pp. 172, 526, and 590 of the last volume), and we have now the pleasure of placing an illustration (fig. 14) representing some of the principal species before our readers. This, with dimensions and a few words of explanation, will convey a better idea of the ornamental value of these plants than the most elaborate description. But let us, in the first place, make a few remarks respecting the genus as a whole. It embraces about 100 species, the distribution of which is very peculiar. Professor Decaisne has lately briefly reviewed the genus, and described several new species from South America in the *Bulletin de la Société Botanique de France*, vol. xx., p. 19. In a tabular view of the species he gives the following figures:—Europe and Asia Minor 36 species, North Africa 2, Australasia 5, and America 56; making a total of 99. There are specimens in the Herbarium at Kew from as far eastward as Affghanistan and Kashmir, and there are also specimens of E. fœtidum from Princes' and St. Thomas' Islands, just under the equator on the west coast of Africa. It is possible that the latter, a common tropical American species, has been introduced, as it does not, so far as we are aware, occur on the mainland, though, according to the note on the label accompanying Barter's specimen from Princes' Island, it is common there from the sea-shore up to an altitude of 2000 feet. There are, moreover, some singular instances of the existence of the same or closely allied species on both shores of the Atlantic within the tropics, but they are very few as compared with those in the north temperate regions. The fact that it is commonly cultivated in some parts of America as a condiment rather favours the view that it is an introduced plant in Africa. A note in the Kew Herbarium, in the handwriting of the late Dr. Seeman, runs thus:—"This plant—Eryngium fœtidum—is to be found in the savannas about Panama, where the people collect it before it comes into flower. They use the leaves as an aromatic in soup. No 'Panamever' would eat soup without this plant. It is also sometimes cultivated in gardens, and bears the name of Culantra. M. Buschel says that it is used as a medicine under the name of Culandro." It is curious that the genus should be absent from Eastern Asia and South Africa, and appear again in Australia and New Zealand, where it is represented by four or five endemic species. The South African genus Alepidea comes very near Eryngium, however, in habit, differing chiefly in the absence of bracts subtending the separate flowers of the inflorescence. There are several European species in cultivation such as E. alpinum and amethystinum, familiar to almost every gardener by their deep blue flower-heads; and these, with E. maritimum of our sea-coasts, fairly represent the characteristics of the genus in the Old World and Australia; but in America the forms are protean. E. Leavenworthii, a North American species, found in Arkansas, &c., is a very handsome species, of the European type. It has large bright reddish violet flower-heads, surmounted by a crown of bracts after the manner of the inflorescence of Eucomis and Guavas. But among all the curious forms none are so interesting to the horticulturist as those having parallel-nerved narrow leaves, like those

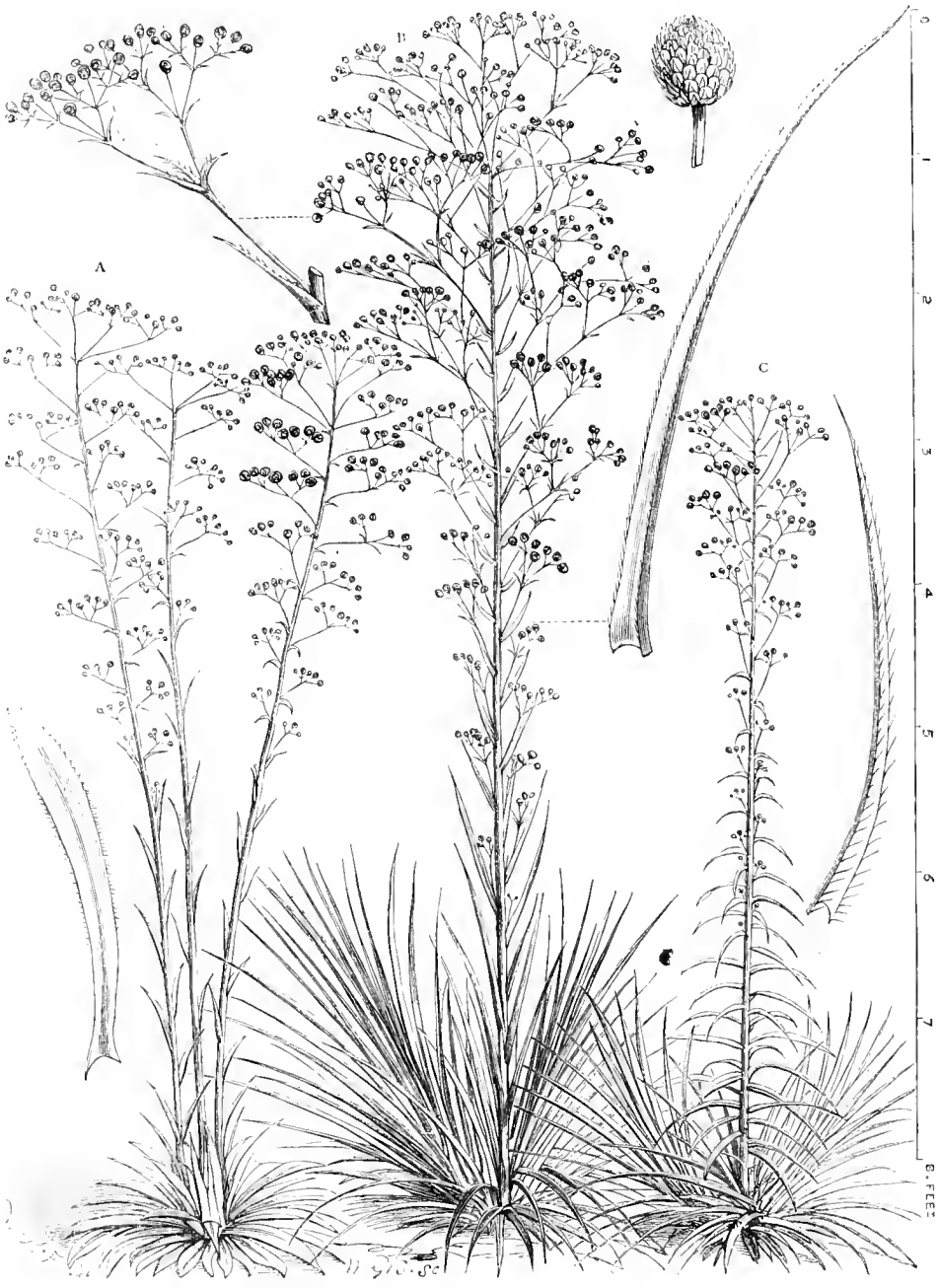

FIG. 14.—ERYNGIUMS. (A, E. serra. B, E. pandanifolium. C, E. paniculatum)

of many monocotyledons, especially the Bromeliaceæ, and a candelabrum-like inflorescence, as depicted in our illustration. Several species of this section were first figured by Delaroche in his *Eryngiorum, etc., Historia*, a work in one folio volume, printed in 1808. This is a monograph of all the species known at that date; it includes descriptions of fifty, and figures of thirty-one species. Before describing more fully those represented in our illustration, we will indicate a few of the most noteworthy forms. It should be stated that, with few exceptions, the South American species have a very narrowly restricted geographical area. E. fœtidum, mentioned above, is one of the exceptions, and E. ebracteatum is another. The latter is a very remarkable species, and was in cultivation a few years ago at Kew, and appears to have been originally introduced in 1817. It has long, narrow, almost grass-like leaves, saving that they are more fleshy, and dense cylindrical spikes of reddish flowers, which, being destitute of involucral bracts, exhibit a very close resemblance in the inflorescence to a Poterium. E. proteæflorum, as the name implies, has large flower-heads enveloped in ample erect bracts, in the way of a Protea. E. stellatum and humile have crowded spreading bracts, looking at first sight extremely like Compositæ. E. junceum and E. ærotifolium have long narrow very rigid leaves similar to those of some of the Restiaceæ, &c. E. fistulosum has hollow leaves like an Onion, but rigid and furnished with transverse partitions. This peculiarity is also present in the section to which our species belong in the form of longitudinal cavities, the cross partitions of which are very conspicuous in dried specimens. The headquarters of this group are in the south of Brazil, Uruguay and La Plata, one or two extending to Chili. They are especially abundant in the country about Monte Video on the north side of the Platte River, and at Buenos Ayres on the south shore. It is true that the neighbourhood of these two places is much better known than the surrounding country, which will doubtless yield other new species. Four or five years ago several species were introduced into France from Buenos Ayres by M. Lasseaux. Some of them were new, and are described by Professor Decaisne in the journal quoted above. From the observations of French horticulturists, published in various journals, it appears that none of them are absolutely hardy in the climate of Paris, but they are perfectly so in the Gironde. They will, therefore, doubtless succeed in the milder parts of the United Kingdom, and almost anywhere south of London, on a light soil, if slightly protected from frost and rain in winter. Steeple-shaped straw caps, such as are in use at Kew, seem to be admirably adapted for both purposes, and are easily removed in open fine weather. In Paris they are raised on a very large scale for indoor embellishment, as well as the subtropical garden. The species described by the Professor appear to be different from those represented here. They are E. platyphyllum, in the way of E. serra; E. Lasseauxii, near what we call E. paniculatum; and E. eburneum, remarkable for the ivory whiteness of the flower stem. Possibly what we call E. paniculatum may be Decaisne's E. Lasseauxii, for it does not agree at all well with the figure in Delaroche's *Historia*. E. serra, as already mentioned elsewhere, is the least desirable of the three, because its leaves decay early in autumn, whilst the other two are almost evergreen; and E. pandanifolium retained the beauty of its inflorescence almost till the end of November. The specimen at Kew was rather taller, if anything, than it is represented by Mr. Fitch, and the leaves have a more curved, less stiff contour. For the rest the figures speak for themselves. And now a word respecting the marginal teeth, which, as may be seen in the illustration, are of different degrees of development; and in dried specimens of different species we have seen almost every gradation up to truly bipinnatifid leaves, fully bearing out the opinion that the linear, parallel-nerved "leaves" represent only the midribs of true leaves, as the phyllodes of Acacias do the petioles. In some species the teeth are simple, in others there is a smaller one at the base of the larger; in other forms, again, the principal teeth are broader, with marginal bristles; and in a more fully developed stage the secondary teeth become foliaceous. Recently M. Gibert has sent dried specimens to Kew of several species from Monte Video, one of which, apparently a new one, of the E. pandanifolium type, is described as being nearly 12 feet high. Before concluding, there is one set of species which we have forgotten to mention. They are remarkable for the exceeding elegance of their leaves, and are miniature plants compared to those figured, having spreading rosulate leaves, with long slender teeth or lobes, resembling a fish-bone. E. elegans and E. Pristis belong to this set. *W. B. H.* [Our own experience of these striking perennials is that they suffer more from wet than frost. EDS.]

FIG. 15.—AVENUE OF DRACÆNAS IN A GARDEN IN THE SCILLY ISLES. (SEE P. 80.)

PICEA PARSONSIANA.

FOR the third time I seem to be called upon to hew this "knotty tree." "Pine doctors," from some strange obliquity of vision, appear not to be able to look beyond the surface of Fir trees, unless it be that they belong to the same genus as the canny Scot

described by *Punch*, who is made to say, "I am open to conviction, but I should like to see that man who can convince me." What Mr. S. B. Parsons says about this tree is quite correct so far—only he has not made clear the origin of the blundering confusion which exists, even now, in regard to the nomenclature of this really fine tree. In the autumn of 1855, when Mr. Stuart Low arranged with Messrs. Parsons of Flushing to sell these trees, raised by them from Californian seeds ("which they had received in the spring of 1853"), he sent over from Flushing a plant of a sort of such kinds as were without names; when these plants first arrived at the Clapton Nurseries the late Mr. Hugh Low sent such kinds as he did not know to me, to see if I could help him in the matter. I kept this first plant at a price which he had fixed, and wrote him as follows:—"It is either lasiocarpa or a new species." At that time I had not had an opportunity of examining Picea lasiocarpa, as named by Professor Balfour; however, in the course of a week I had to go to Stornoway, and on my way through Edinburgh I called at the Botanic Garden to see P. lasiocarpa, which I at once pronounced to be identical with grandis of Douglas. Mr. McNab was with me at the time. On my return from Scotland I brought a plant with me of P. lasiocarpa as named by Professor Balfour. Of this I shall send you a specimen, also one from the original plant of P. grandis, which was imported by Douglas; likewise a specimen of P. grandis from Vancouver's Island. All three you will at once see are the same species.

When Mr. Stuart Low arrived from America with the plants which had been raised by Messrs. Parsons, Mr. Bull, who was then traveller for a London firm, scattered a goodly number of P. Parsonsiana over the country as P. lasiocarpa, on the authority of my qualified letter to Mr. Low:—"It is either lasiocarpa or a new species;" probably others may have done the same. Immediately on my return from Scotland, I made a journey up to Clapton, and set the Messrs. Low right: I told them distinctly that it was a new species.

The origin of the true name of Picea Parsonsiana is as follows:—In 1859 Mr. S. B. Parsons called on me at Elvaston Castle; I then told him that this tree was a new and distinct species: and after having visited the principal collections in Britain and on the Continent, he wrote me in August, 1859, from Lausanne, as follows:—

"Dear Sir,—The proof you gave me of the decided distinct character of our Picea from the lasiocarpa was so satisfactory to me, that I cannot doubt that your opinion must be adopted by all. In this case what shall be its name? I do not think that either my brother or I have much vanity about attaching our name to anything, but as we are commercial men, there are certain advantages to be derived from fathering the nomenclature of a really good thing. It is perhaps, therefore, a fair question whether we are not entitled to have this Picea called by our name. It was obtained by our enterprise and expenditure of money.

"Some years ago, before much movement was made to collect seeds in California, we ordered a merchant there to send out a man and collect seeds for us, let the expense be what it might. He wrote us that he had done so, and in a few months sent us a parcel of seeds with an immense bill. From these seeds came this Picea, which we sent out through Low & Co. Are we not fairly entitled to its name, and would not Picea Parsonsiana be as euphonious as Nordmanniana? Please write me what you think of it, as you are authority in this, because Backhouse and all others still call it lasiocarpa."

On receiving this letter, I at once wrote to Mr. Parsons, informing him that I should name it Picea Parsonsiana, and it was so published in my catalogue. This name was adopted by nurserymen on the Continent and in this country (and is still retained by many); lasiocarpa was retained by such as had not an opportunity of being better informed, and not until 1862, when Mr. Gordon published his Supplement to his *Pinetum*, did any one ever hear of the name Picea Lowiana being given to this tree!

In his Supplement Mr. Gordon says, p. 53, when speaking of P. grandis of Douglas:—"This kind must not be confounded with a new and very distinct species sent to Messrs. Low & Co, of the Clapton Nursery, by their collector, Mr. William Lobb, from California, under the misapplied name of Picea grandis, and which I propose calling Picea Lowiana;" and on p. 54, after having described what he is pleased to call P. Lowiana, he goes on to say: "It is found in British Columbia and Northern California, but always in valleys, or along the alluvial banks of rivers." Here he is confounding the habitat of Lowiana with grandis, for Parsoniana is always a mountain Fir, but grandis grows in valleys.

It is not for me to say why Mr. Gordon wrote as follows. After having described what he calls Picea Lowiana, he goes on to say: "This new and very distinct species appears to have been first discovered by Mr. William Lobb." Now, I can distinctly say, and without fear of contradiction, that it could not appear to any one but Mr. Gordon himself, until he gave it publicity in 1862. He himself had frequently seen the same tree, which was first imported by Messrs. Parsons through Messrs. Low & Co., in the autumn of 1855, and yet his memory had so failed him that he gives the

"Syn. Picea grandis, Lobb, not Douglas.
" " LASIOCARPA, HORT."

Rather strange to describe a new species first discovered by W. Lobb, and at the same time to find ghosts of the same tree in gardens under the name of P. lasiocarpa, six years older than those first introduced by Mr. W. Lobb. So much for blundering.

With this I enclose a few specimens of Picea Parsonsiana, to show you the varied modifications of growth of this tree. Cabinet botanists labour under great disadvantages when their knowledge of a species is confined to a single specimen—which they may have faithfully described, but which description conveys but an inadequate representation of the same tree when seen in its different stages of growth and age. I have had a personal acquaintance with the leading botanists of this country for nearly half a century, and notwithstanding their high scientific attainments I have found them frequently at fault amongst trees. It requires a practical eye, and an experienced tuition, to enable a man to be at home amongst a multitude of ever varying acquaintances. *William Barron.*

—— I observe in your issue of January 8, p. 45, a notice by Mr. Parsons of the Abies Parsonsiana, and as I am at present especially interested in the matter, I trust you will kindly permit me to make a few remarks. Mr. Parsons does not mention any description of Abies Parsonsiana, neither does he give any date of publication of the name. Indeed, having been unable to find any reference to a description, I conclude that the name is a mere catalogue one, and, therefore, not having the same importance as that of Lowiana, the name given to it in Mr. Gordon's Supplement to the *Pinetum*, published in 1862, p. 53. Mr. Parsons mentions that seeds were first received from California, without a name, in the spring of 1853, and seedlings were brought to England in the autumn of 1855 by Mr. Stuart Low. It was, however, really introduced into Britain in 1851 by Jeffrey. I have now before me a specimen from a plant now growing in the Royal Botanic Garden, Edinburgh, which is in all respects the same as Abies Lowiana and Abies Parsonsiana. This fact is well-known to my father, Mr. McNab, Royal Botanic Garden, Edinburgh, who thus alludes to the plant in his paper on "Discoveries made during Botanical Expedition to British Columbia," in *Transactions of the Botanical Society of Edinburgh*, vol. xi., p. 325:—"In 1851 Jeffrey sent home cones and seeds under the name of Picea grandis. Of recent years seeds of the same Picea have been received from other collectors, named by one P. Lowii, by another P. Parsonsi, and under the former name it is now extensively cultivated. Very few plants of that long-leaved species can have been raised from Jeffrey's seeds, as original seedling plants are scarce. One raised here has been twice transplanted after being 6 feet in height, and is now (March 14, 1872) a beautiful tree 15 feet high and 36 feet in circumference of branches. In its native state Jeffrey reported that it grows to a height of 288 feet, with a stem 15 feet in circumference." I believe from most careful investigation of very many specimens that there are five closely related species which have been much confused, namely, A. concolor, Engel.; A. Lowiana, Gordon; A. grandis, Douglas, Parl. (syn. excl.); A. sp. ined., the lasiocarpa, Oregon Committee (not Hook.); Gordoniana, Carrière?; and A. sp., spectabilis, Bertrand, Herpin de Frémont?, not of Don. As to amabilis, Douglas, I have carefully examined many specimens, and have no hesitation in saying that A. amabilis, Douglas, Parlatore (syn. excl.), is the P. lasiocarpa of Hooker and Abies bifolia of A. Murray, while a species closely allied to P. nobilis does duty for A. amabilis in this country. *W. R. McNab, M.D.*

Natural History.

TOADS.—Your correspondent, "R. T.," remarked a short time ago that "he has every reason to believe that toads are sometimes treated most cruelly." This is, or was, certainly only too true. Some years back I was in Jersey, and found it to be a common thing among the ignorant populace to kill the large *crapauds* of their island, under the impression that they could bewitch! The consequence was that dead toads were of common occurrence by the roadside. That they are poisonous is of common belief, possibly arising from the fact that an exudation from the skin seems sometimes to make a dog's mouth secrete saliva, so that it foams on worrying the creature. The late Professor Henslow, who always encouraged their protection, and maintained the benefit of toads in a garden, once observed an undergraduate of Cambridge throwing stones into a hedge; on approaching to ask what was there, the young man pointed out very excitedly a harmless toad. The Professor rebuked him, and took up the toad in his hand, to convince him that it was innocuous; the young man, however, was anything but convinced, and shouting, "It will venom you, sir!" turned tail and ran away at the top of his speed. The Professor for some time kept two of the large Jersey toads alive, and which proved to be the source of great amusement. They were most voracious in their habits, and would consume as many earwigs, butterflies, and other insects, and especially worms, as could be supplied. The latter were "prepared" in a very ludicrous manner. Seizing the worm by the middle, the toad cleared the wriggling extremities of particles of earth, by passing them several times between its toes, and then with a gulp, a snap, and a complacent closing of its jewel-like eyes, all was over. On one occasion one of them was seen to shed its skin. After cracking down the back it dexterously pulled off each half like a torn jacket, and as a convenient and tidy method of disposing of its "old clo," swallowed it. *George Henslow.*

SNOWFLAKES.

SNOWFLAKES falling, ever falling,
Through the gaunt and leafless trees;
Chilly gloom the soul appalling,
As the very snowflakes freeze;

Freeze on gable, wall, and tower
Of the ghostly church beyond;
Freeze on Ivy-mantled ruin
Close beside the Witches' pond,—

Pond, whose black unholy waters,—
Shaded by tall dismal Yews,—
Heave and swell with sullen motion,
When no breath of Heaven pursues.

Ne'er shall breath of Heaven linger
On this pool so dark and dread,
For a fearful crime lies hidden
Deep within its murky bed.

Nameless is the crime; forgotten,
Save for this unresting tide
Seeming to resent its waters
Should so dire a death-deed hide.

Snowflakes rest not on its bosom;
Frosts ne'er sparkle o'er its face;
Birds and beasts and insects shun it,
Seeking other resting-place.

* * * * *

But the snowflakes still are falling,
Whitening all the earth around;
Dark and dense themselves appearing,
Ere they hover to the ground.

Thus, oft, messengers from Heaven,—
Trials, sorrows, pains, and tears,—
Look all black when distant from us;
But as each our poor heart nears,

Then we find how pure and tender,—
Soft as snowflake to the touch,—
Proves the trial that we shrank from,
Strove against, and fear'd so much.

R. F. H., in the "Builder."

Obituary.

WE regret to have to announce the death of Mr. S. T. DAVENPORT, well known as an active and energetic officer of the Society of Arts. Mr. DAVENPORT'S connection with the Society had lasted for thirty-three years, and it was in great part to his unceasing and zealous efforts that the present prosperity of the Institution is due. To very many of the members he was well known, and all who take an active interest in the Society of Arts will feel his loss severely. Mr. DAVENPORT'S death was very sudden; it took place on Friday last, January 7, after an illness of only four days.

Garden Operations.

PLANT HOUSES.

PLANT STOVE.—Where there is a disposition to make the most of such stove plants as will flower for the greater part of the summer almost continuously, it is advisable to start them considerably earlier than is often practised by many growers. Until of late years a mistaken opinion was very general as to the ability of most of these continuous summer-blooming plants to bear early excitement into growth and the consequent long season of growth which it entailed, the impression being that it would cause exhaustion and premature wearing out. Yet such is by no means the case, as I have proved with numbers of subjects of this nature by subjecting the same individual plants for near upon a score of years to not more than eight or, at most, ten weeks' rest, reckoning from the first check given them in the autumn, by withholding water until they were induced to flag, followed by complete cessation of growth. Neither is this comparative short season of rest opposed to the nature of most stove plants, as the greater number of the occupants of our stoves do not in a state of Nature undergo nearly so long a dormant period as under cultivation they are subjected to. Where large quantities of cut flowers are required, the management of free flowering stove plants so as to induce the longest possible season of blooming is a matter of importance, especially with such as from their colour, form, and endurance when severed from the plant particularly adapt them for using in this way. For this purpose first on the list stands Bougainvillea glabra. The flowers of this plant have all the properties requisite for using in a cut state, to an extent that few things possess. There is one peculiarity about it, that it will bloom profusely in the temperature of a cool intermediate house when planted out, but only very sparingly when its roots are confined in a pot, unless it is subjected to more heat: grown in a hot stove it will flower almost continuously, if the branches are not trained down, from April to October; but to insure this the plants must be started early, and well sustained through the growing season by liberal applications of manure-water. Plants of this Bougainvillea required to flower in this way should be started without delay. First cut them back: in this it is well to remove all the small weak wood, only retaining the strongest shoots, otherwise the plants get full of small spray not strong enough to flower. When cut back, at once turn them out of the pots and shake away two-thirds of the soil, and if the plants are old and strong cut away a portion of the largest roots, soak the remainder of the balls for some hours in warm water, after which let them drain, and then pot in good loam to which has been added one-fourth of well decomposed rotten manure and a little sand: place them in a temperature of 70° in the night, and syringe overhead every evening. A plant or two of Allamanda that have been rested through the autumn may be similarly treated in every way. In potting Allamandas the soil should be rammed into the pots as closely as it is possible to get it, by this means they will make much shorter wood and flower more profusely. Allamanda blooms do not last well when cut if the whole bunch is taken off, but the individual flowers will stand for several days if taken off as soon as they open. They are very suitable for filling in with other subjects in the base of such things as March's stands. Those who have not grown A. Chelsoni will find it the best of all the family for cutting; the flowers have more substance than most of the others. For the same purpose a plant or two of Clerodendron Balfourianum may at once be started, but with this the roots must not be disturbed unless they require larger pots, in which case repot without disturbing the roots further than removing the drainage. This plant will do the best at the coolest end of the stove, or in a night temperature of 65°, brought on slowly, and kept elevated close to the light; the flowers are very useful for cutting, the form and combination of colour being so distinct from other things for this purpose. One or two plants of Dipladenia should also now be pushed on; the splendid-coloured free-flowering D. Brearleyana and D. amabilis both rank amongst the finest of stove plants, their flowers being useful used in the way advised with Allamandas, but for cutting D. crassinoda (Martiana) is the best, and still worth growing in even the most select company. Some Gloxinias should at once be got to work; for the earliest started it is well to use large bulbs, as these will throw up many more flowers than smaller ones. The temperature of the stove should now be raised to 70° in the night, letting it run up 10° higher in the daytime; this is necessary to get Ixoras into free growth. To grow them as they ought to be they should never be quite at rest, but simply kept slowly moving through the winter. Several of the new Ixoras are well deserving of general cultivation, but there is none that equals the old I. coccinea as a decorative plant or for the production of flowers for cutting. Of its colour it stands unrivalled. *T. Baines.*

ORCHIDS.—In the East Indian house, the majority of the Aerides, Vandas, and Saccolabiums will have ceased active growth, and will have entered on a period of rest which is essential to their successful cultivation. This season is often unduly shortened by continued watering, the result in this case being the loss of a number of the lower leaves, or again unnaturally prolonged by a continued course of dryness, in which case the plant till late in the spring has a shrivelled and yellow appearance, which is by no means attractive. The middle course is the wisest to adopt, and to this end let a little water be given occasionally, just sufficient to keep the moss slightly moist; this will keep the leaves in a healthy green condition. Saccolabium violaceum and S. Harrisonianum will now be in flower; the former is certainly a very desirable species, but the latter is not so attractive, the colour not being so pure as might be desired. These two are far eclipsed by S. giganteum, which will also be flowering now, and deserves to be represented by more than a single specimen. The flowers of this will keep fresh for ten weeks (if no water is allowed to fall upon them), on which account they are very useful for cutting purposes. Angræcum sesquipedale and A. eburneum will also be in flower. The same remark as regards moisture also applies to these; they then retain their beauty for a much longer period than would otherwise be the case. Cypripediums must be encouraged by a liberal supply of water at the roots to make a vigorous growth, for the spikes of bloom in the spring, which may be termed the finishing of the growth, are largely dependent for their strength upon the vigour of the young shoots, which are chiefly formed during the autumn and winter months. C. villosum is usually one of the first to come into bloom, and will shortly be showing its flower-spikes. As soon as these are of sufficient length let them be tied up. The flowers then show to greater advantage than when the blooms are expanded before that operation is performed.

In the Cattleya-house the various varieties of C. Trianæ will be pushing their flowers up in the sheaths. Where a number of these are grown the house may be made to look gay for three months to come; on this account this species, with its many varieties, deserves to be grown in quantity. Cattleyas and Lælias that are now about finishing their growths must have a little water given occasionally; whilst Cattleya Warneri, which will now be starting into growth, must have attention. This species should flower in May and June on the young growths, so that sufficient water from this time must be given, to assist the plant in the formation of stout, healthy bulbs. C. bulbosa and Lælia præstans will soon be showing flower; if grown on blocks let them be dipped carefully about twice a week. Miltonias which are just commencing to break must be seen to, and where a larger pot or pan is necessary let it be given at once; where this is not the case, a top-dressing of moss and peat should be given before the young roots commence to grow. In the Odontoglossum-house many of the New Grenadan species will be showing flower; these spikes must be carefully watched, for it is surprising how soon the snails and woodlice find out and destroy the young flower-spikes, to the great annoyance and disappointment of the grower. Lay pieces of Potato hollowed in the middle on the plants, and let them be looked at every morning. Give a little air on the bottom ventilators when the weather is mild, but should frost or easterly winds prevail, very great care must be exercised in this matter, and when any is given be sure and only open the ventilators on the opposite side, that is, on the south or west. *W. Swan, Fallowfield.*

FRUIT HOUSES.

PINES.—Persevere in the course of treatment as recommended in the last Pine Calendar to plants which are being stimulated to show fruit. Amongst these the most advanced will by this time indicate its presence, if it be not already visible. Let the temperature be well sustained at this stage of development, to encourage the embryo fruit to rise well up in the foliage. When, as at the present time, adverse circumstances abound outside, a covering should be applied to those houses where it is practicable to do so. As such conditions necessarily entail a highly heated state of the pipes, even where these are plentifully supplied, and more so otherwise, therefore there should be no lack of moisture about the houses, to counteract in some degree its arid effects on the plants. These remarks are likewise applicable to the fruiting compartments. Let a low night temperature still rule in those places which contain successional stock, and particularly under existing circumstances—5° of frost at 55°. This kind of stock is perfectly secure from harm provided the heat at the roots is not below 60°. As the time for shifting a certain portion of the plants, where pot cultivation is practised, is drawing near, make occasions unsuitable for outside operations available for preparing the requisite materials which will be shortly needed for the purpose. *G. T. Miles, Wycombe Abbey.*

HARDY FRUIT GARDEN.

The present is a good time to look over the standard Apples and Pears in the orchard department, and wherever the growth is crowded a careful thinning out of the shoots must be resorted to, and this is not an operation which can be hurried over. The first thing is to understand thoroughly the object of thinning; and as it is to admit as much light and air as possible to all parts of the tree, it is obvious that all crossing branches which prevent the light of the sun from gaining access to the interior of the tree should first be removed, and afterwards the number of those which point outwards from the centre reduced, reserving always the most healthy and fruitful branches. Another object is to obtain fruit of the best quality, and this cannot be effected by thinning out the growth alone—it must be supplemented by a careful dressing of the trees, to prevent as far as possible the ravages of insects; to this end all moss and lichen should be carefully scraped from the main stem and larger branches as high as possible, and this part should be painted over thickly with a mixture of quicklime, with sufficient soot to make it dry of a neutral grey; previous to which, however, if any part is affected with American blight, it should have soft soap well scrubbed into the crevices with a hard brush. The smaller branches should be dusted with quicklime alone, choosing a quiet, moist day for the work, and as far as possible let the workman operate above the branches, and not, as I have seen it done, cast from below, which is a great waste of material. After these operations are finished the climax must be put to the whole by a liberal surface-dressing, and if the ground around the trees is cultivated in any way, good strong manure should be laid on the surface and then carefully pricked in, but if the orchard is laid down in grass the manure may, with an equally good effect, be spread over the surface as far as the branches extend, and be left for the rains to wash it down. This practice is highly to be commended, as tending greatly to prolong the life and sustain the vigour of old trees, from which we often obtain the finest flavoured fruit.

Should any part of the orchard require to be renovated with young trees, the present is a good time to make preparation for planting when milder weather sets in. This is an operation requiring serious consideration on the part of the planter, as it is perfectly useless to dig out a hole just large enough for the roots of the tree to be planted, and plant the young tree in ever so good a compost, because the roots of the old trees in the neighbourhood will at once seize upon the new soil and, exhausting most of its fertilising qualities, reduce the newly planted trees to a mere vegetating existence. I recommend, therefore, as the safest plan to adopt, and one which is cheapest in the end, although involving a trifle more outlay at first, to excavate a hole 12 feet in diameter and 2 feet in depth, making use of the soil as a surface dressing over those portions of the orchard where replanting is not required, where it will do much good. The bottom of the hole should then be deeply trenched so as to cut off any possible roots cropping up in any direction, and as it would be useless to plant in old exhausted soil, a sufficient quantity of new compost, consisting principally of virgin soil, not exhausted by tree roots, should be carted or wheeled into position to form a mound fully 3 feet deep above the trenched soil in the bottom of the hole, with a diameter of 6 feet. This is enough for the first year, and will leave a large space between the mound and the outer edge of the excavation, so that the outer roots will have nothing to lay hold of. In this mound let the tree be planted and secured, and then well mulched over with some good half-decomposed stable manure, and being thus, as it were, isolated from the surrounding roots of the old trees, it will have a fair chance of starting into strong growth; and if every year a little additional new compost is added to the mound, and a fresh mulching given, taking care at each time to trench up the outer space, the trees, by the time the whole excavation becomes filled up, will be strong enough to hold their own against the old trees, and annual surface dressing will do the rest. The late severe weather will have retarded the operations of pruning, dressing, and nailing wall fruit trees, which should never be carried on in frosty weather, but they must be borne in mind and persevered in when milder weather occurs. The fruit-room, too, must have attention, and in addition to the removal of all decayed and inferior fruits likely to contaminate the remainder, as fast as the consumption causes vacancies on the shelves, the remaining store should be spread out as thinly as the space will allow. *John Cox, Redleaf.*

HORTICULTURAL EXHIBITIONS, 1876.

JANUARY.

19.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.

FEBRUARY.

16.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.

MARCH.

1.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
14.—Manchester Botanical and Horticultural Society. Floral Meeting at the Town Hall.
15.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
15 and 16.—Leeds Horticultural Society. Spring Show.
22 and 23.—Bristol, West of England, and South Wales Chrysanthemum Society's Spring Show.
29.—Royal Botanic Society (Regent's Park). Spring Show.

APRIL.

5.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
5.—Royal Caledonian Horticultural Society's Spring Show.
19.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
25.—Manchester Botanical and Horticultural Society. Exhibition of Auriculas, &c., at the Town Hall.
26.—Royal Botanic Society. Second Spring Show.
27.—Royal Horticultural Society of Ireland. Spring Show.

MAY.

3.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
17.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
18.—Royal Horticultural Society of Ireland. Second Spring Show.
24.—Royal Botanic Society. Summer Exhibition.

THE

Gardeners' Chronicle.

SATURDAY, JANUARY 15, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Jan. 17	Sale of Conifers, Seeds, Cycads, Lilies, &c., at Stevens' Rooms.
TUESDAY,	Jan. 18	Sale of Poultry and Pigeons, at Stevens' Rooms.
WEDNESDAY,	Jan. 19	Royal Horticultural Society: Meeting of Fruit, Floral, and Scientific Committees.
THURSDAY,	Jan. 20	Meeting of the Linnean Society, at 8 P.M. Sale of Rare Lilies and other Roots, at Stevens' Rooms.
FRIDAY,	Jan. 21	Sale of Scientific Instruments, at Stevens' Rooms.
SATURDAY,	Jan. 22	Sale of Minerals, &c., at Stevens' Rooms.

THERE are certain topics which, as every newspaper reader knows, are apt to crop out—to use a geological phrase—when Parliament is not sitting. In the instance to which we are about to refer it is a pity that the subject is not mooted in Parliament itself. The maintenance of KENSINGTON GARDENS and its trees is a subject not merely of local, but really of national importance. When it is the promenade of Little Pedlington which is under discussion the debate may well be left to the local journals. The case is otherwise when we have to deal with metropolitan gardens, or those like the Royal Botanic Gardens, Edinburgh, or those at Dublin, which are wholly or to a large extent public property, maintained by public funds, open to and largely used by the inhabitants, not only of the particular town, but by thousands of visitors from other localities, either for purposes of health, pleasure or instruction. This is our excuse, if any be needed, for again calling attention to the CONDITION of the TREES in KENSINGTON GARDENS. This is no new subject to our readers. In our volume for 1874, November 7, p. 589, and again in the same year, December 19, p. 781, we discussed the state of affairs and the alleged causes at some length. We pointed out the magnitude of the evil, the folly of dealing with it as it has been dealt with, and the necessity of at once taking steps to avert the imminent disaster of having a treeless waste or at best a plantation of sickly, starved, and decaying trees interspersed with a few young trees, destined, if the present no system be persevered in, to more speedy decay and failure than their predecessors. We urged upon the Government the necessity of at once dealing with this question in a large and comprehensive manner. It was, therefore, with much pleasure that we saw lately in the *Times* a letter from an Indian forester, advocating the very measures upon which we insisted. In the hope that, by repeatedly calling attention to the matter, something satisfactory may be done, we invite the notice of our readers to the letter in question, which may be found in another column. The writer alludes to the hideous practice of topping, and the unsatisfactory results obtained. He urges, as we had done, the necessity of rigorous systematic investigation into the causes of the disaster, and of the best means of stopping its progress and averting future mischief. As we had previously done, he recommends the enclosure of certain defined areas or blocks, and their treatment in that systematic manner—if we said scientific we should perhaps raise a prejudice—in which Continental forests are worked, bearing in mind, of course, that the objects here are ornament, health, and recreation, not direct profit, though even the breeches-pocket element would be better considered by such a plan than by any other. To effect this the *Times* correspondent recommends the appointment of a mixed commission of practical foresters, scientific men, and landscape gardeners to investigate the whole matter carefully, and to suggest the appropriate remedy. For our own part we are not particularly concerned how the matter is to be dealt with so long as it is taken in hand quickly by competent persons, and not left to hobby-riders and legislators of the AYRTON type.

A report has been received from the Foreign Office at Florence respecting two DISEASES IN VINES which have lately attracted attention in ITALY, on a supposition that they are new; one of which, however, is not of unfrequent occurrence in this country, specimens having lately been submitted to the Scientific Committee of the Horticultural Society, and the other in some respects so closely resembles in character the black-spot of Australia as to make it a matter of considerable interest to cultivators. We have not at present seen any specimens, but we do not doubt that we shall be able to procure some, and shall then be able to make a proper report. The black-spot is such a pest at present in Australia, that it is greatly to be hoped that it may not be introduced like the Puccinia of the Hollyhock, which appears to have travelled originally from South America. The first disease is clearly identical with the half-fleshy, half-woody, gall-like bodies which occur on the stems of Vines, and which seem simply to be an hypertrophy of the wood, for we cannot find any trace of fungus likely to produce them, though it is quite possible that something like the fungus which produces the blisters in Peach leaves, the bag Plums, the gall-like swellings on Rhododendrons, and the Clavaria of the Madeira Laurels, may eventually be found. The specimens sent to South Kensington were covered with a little white Verticillium, but there was not the least reason to suppose that it had anything to do with the production of the disease. In the black-spot there is undoubtedly a fungus, and it will be matter of interest to ascertain whether anything of the same kind exists in the Italian malady. An abstract of the report, the sight of which we owe to the kindness of Dr. HOOKER, is as follows:—

"Two new diseases of the Grape Vine, from recent statements made by Professor CARUSO [CARUEL?], of Pisa, would appear to exist in Italy, and though observed for the first time in 1873 only appear to have been brought to the notice of scientific agriculturists in August, 1875.

"The first of these consists of small tumours on the stem. They are about the size of a Pea, but gradually increase in number and volume, finally spreading over the plant, producing a kind of atrophy and ultimately death. Professor CARUSO has examined them, and finds neither insect nor microscopic vegetation, and believes that the disease consists in an hypertrophy of the young wood. It has also been shown that the malady exists among the Grape Vines at Ravenna, where the conditions of growth, nature of the soil and aspect are identical with those at San Pietro in Valle (Province of Pisa). At Viareggio, in the vineyard of the Marquis BOTTINO of Lucca, where French Vines predominate, this disease was found to exist in more than 300 plants. In many instances where the Vine had been cut down close to the ground, with a view to extirpate the disease, it was found that the young sprouts of the following year became again sickly and perished. The disease appears to arise from dampness, as it occurs principally where the soil is very moist.

"The other disease is commonly called by the Italian peasantry small-pox, or 'mal della Colla,' and appeared about four years since in the Val d'Arno, Pisano. It has gradually extended itself, and threatens to destroy all the Vines attacked. It has now appeared in the plain of Pisa and on the Pisan hills. It appears as small yellow spots, which become subsequently black, owing to the alteration which the chlorophyll has undergone. Small punctures, like those made with a pin, appear, which enlarge, become concave, and bear some resemblance to the pustules of small-pox. Sulphur, wood-ashes, and lime have been tried without any benefit. The small black patches are not the work of insects, nor has any parasitic cryptogam been found on the roots, shoots, or leaves. Professor CARUSO is still investigating the matter."

—*M. J. B.*

—— AT p. 811 of the *Gardeners' Chronicle* for December 25 last, we gave an illustration of a group of Agave americana in the gardens of Tresco Abbey, Isles of Scilly. This illustration, together with that on p. 807 of the same number and those we now give (figs. 15 and 16), were engraved from photographs taken by Mr. GIBSON, of Scilly. We are indebted to the present owner of Tresco, F. AUGUSTIN DORRIEN SMITH, Esq., for permission to engrave these photographs, some of which, indeed, were taken for the express purpose of engraving in this journal, and we are also indebted to the same gentleman for the following notes on the Agaves flowering in the gardens at the time—July last. In all forty-eight plants were then blooming, twenty-four of which were in one row, their ages being about sixteen years. Of the forty-eight forty-four were the common Agave americana, and the remaining four of the variegated variety. The height of the plants was about 30 feet, and their rate of growth 6 inches in twenty-four hours, the whole growth occupying about 10 to 12 weeks. Out of three plants of Fourcroya longæva in the garden two flowered during the past season, the heights of which were 17 and 20 feet respectively.

—— A correspondent of *Science Gossip* remarks that he planted a quantity of blue and yellow Crocus, and that during the first and second years after planting they remained true to colour, but after that time they all became yellow.

—— Few things look hardier than the common BUTCHER'S BROOM (Ruscus aculeatus), but it is not proof against frost when caught at its weakest point. In a dwarf hedge of this plant under our notice young shoots were produced last autumn, and these have been killed almost down to the ground by the frost of November last. The present frost will probably complete the mischief, so far as these shoots are concerned. We are apt to forget that many of our native plants are not proof against such attacks under like circumstances, the common Nettle to wit.

—— Much "picturesque description" has been wasted in connection with the Roses which are to be seen in such great abundance during the winter months at the florists' shops in Paris and at the kiosks on the Boulevards. We have been told, says the *Pall Mall Gazette*, of the care which has to be taken in packing them for transport from the shores of the Mediterranean and other sunny spots in the South so that they may reach Paris without losing their freshness and their perfume. We have even been made to assist in the spirit at the busy scene which may be witnessed in the gardens along the Riviera, when the peasants and their families are collecting the flowers which their slender means do not allow them to retain for their own enjoyment. All this is very pastoral and pretty, only, unfortunately, it is not true. Nearly all the huge nosegays of roses which visitors to Paris always admire, and sometimes purchase, are grown, not in the South, but in Paris itself, and that in one of the dirtiest and most squalid of its streets. In the Rue Lourcine there is a large firm which possesses

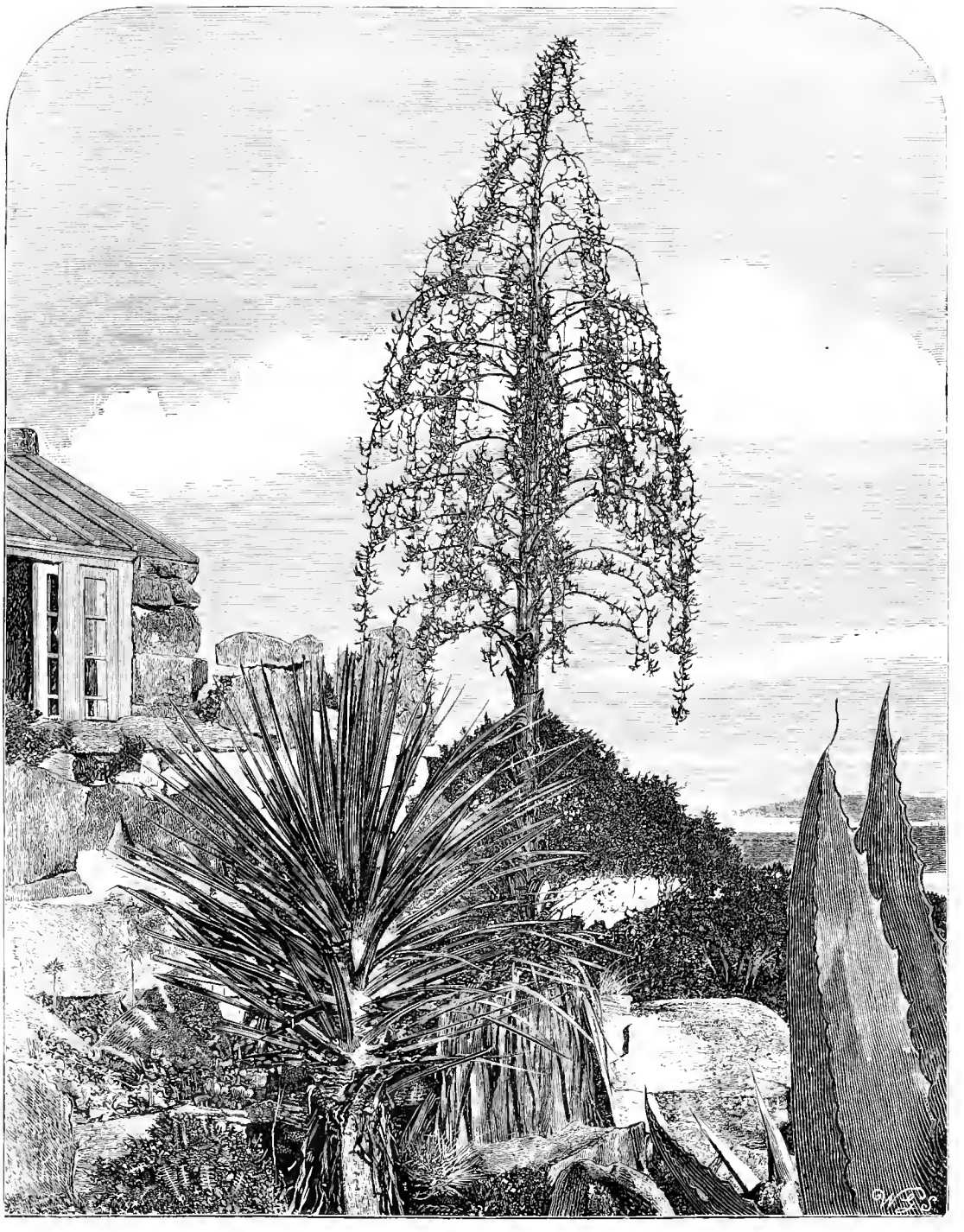

FIG. 16.—FOURCROYA LONGÆVA IN A GARDEN IN THE SCILLY ISLES.

conservatories as well worth a visit as those belonging to the city of Paris, and in these, by a plentiful application of heat and manure, Roses are forced from November to May. By a judicious system of grafting the plants are made to succeed each other in blooming at the required intervals, so that the supply may be continuous for the whole of the six months. In this way the price is maintained, and until some other competitor embarks in the same trade Roses will be as great a luxury as they are now. Still it is something to be able to see them in the shop windows.

—— The *Sydney Mail* learned at a recent exhibition in New South Wales that young PASSION FRUITS [? Passiflora] may be made to do duty as a substitute for Olives in pickles. They should be gathered when about the size of pigeons' eggs, and subjected to the same treatment as Gherkins, Walnuts, &c. The Passion Vine along the coast-line of New South Wales produces generally an excess of demand, therefore young fruit may be put to the purposes alluded to, and if properly manipulated they are a good imitation of Olives, and at least form an excellent pickle.

—— Mr. CHARLES VAN GEERT, of Antwerp, sends us a coloured plate of a new GOLDEN CANADIAN POPLAR, which, so far as we can judge, will be a great acquisition and a fit companion for the Golden Catalpa and the Concordia Oak. From the rapid growth of the Poplar it may be made available much sooner than those trees, and can be much more generally used. It was obtained from a sport of the Canadian Poplar.

—— Among the BERRY PLANTS which are so acceptable at this season COTONEASTER SIMONSII should be particularly cherished—not that it needs any care whatever if it be well planted, but against a wall its orange-red berries are profusely produced, and they are in our experience the last to be attacked by birds. Our Pyracantha berries were ruined in November, but the Cotoneaster berries are still intact.

—— The exhibitions to be held this year in connection with the ROYAL CALEDONIAN HORTICULTURAL SOCIETY are announced to take place on April 5, July 5, and September 13.

—— The only remaining portion of the well-known garden at Kensington Gore in which WILBERFORCE and his sons were wont to disport themselves, was sold last week by H.M. Commissioners for the enormous sum of £103,000. The plot has a frontage of about 50 yards to the Knightsbridge Road, and a depth of about 80 facing the east side of the Albert Hall. It has been bought with a view to the erection of a few first-class houses; the price per yard being something

like £25, whereas in WILBERFORCE's time it might have been difficult to get as many pence. One of the Mulberry trees mentioned in his *Life* as the scene of many a pleasant romp with his children may still be seen standing, but we fear it has not many months—perhaps not many days—to live. *The Rock.*

—— Mr. BUIST, of the Rosedale Nurseries, Philadelphia, U.S.A., informs us that the CENTENNIAL BUILDINGS will be quite ready in March. They are magnificent buildings, purely American, though only two—the Horticultural Hall and Art Gallery—are of a permanent character. There will be about 100 erections in the grounds altogether, including kiosks from the States and all foreign countries, and hotels without number; and twelve or fourteen railroads also have termini in the grounds.

—— Looking through a back volume of the *Flora* we came upon the record of a LARGE TREE, which is worth transcribing here, for although far from equalling the giants of the North American forests, the height is something extraordinary in Europe. According to our authority, a Silver Fir tree was cut down at Arwaz, in Hungary, in 1870, that was 139 (German) feet in height and 71 inches in diameter. The German foot is a trifle longer than the English, and therefore this tree was not much inferior in height to the spar of Abies Douglasii at Kew, which stands up so high above all the surrounding trees.

—— Mr. SCOTT's note (p. 54) on the NAMES OF APPLES AND PEARS causes us to refer again to M. JAMIN's observations on this subject. We did not think it necessary to explain the origin of the name Eyewood, and simply gave it as an instance of a "*mot dont il n'est guère possible de trouver l'etymologie*," according to M. JAMIN. Respecting the Linnæus Pippin, M. JAMIN says it is a curious fact that, although it was sent to us from London, it is now unknown in England. He also adds that he had seen Apples resembling it bearing the names of Seek-no-further and Yellow Bellefleur, and that last year the Pomological Congress had definitely adopted for it the name of Bellefleur Jaune. This quite agrees with what Mr. SCOTT writes, but is the variety long grown in Sussex under the name of Seek-no-further the same? Perhaps Mr. SCOTT can tell us.

—— The MISTLETO has been reported as growing on the following trees in England, in addition to those named by our correspondents:—Beech, Alder, Plane, Dog Rose, Cedar of Lebanon, Birch, Catalpa, Box, Elder, Holly, and Yew. A very long list of nurse-trees for this parasite is given by Dr. BULL in the *Journal of Botany for* 1864.

—— The SALWAY PEACH appears to be fast gaining favour with our friends on the other side of the Channel, as it figures at all the principal shows, and is strongly recommended by the French societies. Some fruits lately exhibited by M. CHEVALIER, of Montreuil-sous-bois, are described as remarkably fine and good, one weighing 270 grammes, or a little over 9½ oz.

—— The comparatively few HARDY PLANTS we have in cultivation from the extreme south of SOUTH AMERICA, such as Berberidopsis corallina, Berberis Darwinii, Lardizabala biternata, Geum chilense, Fuchsia spp., Passiflora cœrulea, Escallonia macrantha, Mutisia spp., Fabiana imbricata, Pernettya mucronata, Solanum jasminoides, Ercilla volubilis, Fagus antarctica, Araucaria imbricata, Lapageria rosea, Alströmeria spp., &c., all rank so high as ornamental plants that it is rather surprising that none of our enterprising nurserymen take measures to introduce some of the many fine species growing in that region. Perhaps it is because new hardy plants do not find sufficient purchasers at a price to make the speculation a remunerative one. Another drawback is that most of the species would probably prove hardy only in the southern and western parts of the kingdom. Still, there are many handsome plants whose introduction we should hail with pleasure. We are reminded of this by the list of Chilian plants given in a recent number of the *Bulletin de la Société d'Acclimatation de Paris*, and recommended for trial by the Society. This list, however, includes many species from the northern provinces, which would not flourish in the mildest parts of this country.

—— If LARGE RADISHES are desirable, M. PETIT, gardener to M. TORCHON, Bellevue, Seine-et-Marne, should be a contented man, as he has succeeded in growing the Radis gris to the enormous weight of 6 kilogrammes, or nearly 14 lb. He exhibited on the same occasion four Turnips belonging to three different varieties, one of which weighed over 7 lb. M. PETIT received a Third-class Certificate from the Central Horticultural Society of France for his productions, so we imagine that exceptional size was obtained at a sacrifice of other qualities. We should mention the Radish was of the *raifort* or Spanish class.

—— We learn from the *Journal de la Société Centrale d'Horticulture de France* that a First-class Certificate has been awarded to Mr. LEMOINE for his new double-flowered, tuberous-rooted BEGONIA GLOIRE DE NANCY. It is described as being of new colour—a most brilliant vermilion-red. A second certificate of the first class was awarded to the same florist for seven other tuberous-rooted Begonias, taken together.

—— The claim of the ordinary ZONAL PELARGONIUM AS A WINTER FLOWERING PLANT has often been advocated, and certainly when properly treated they not only produce at this season of the year plenty of flowers, but also large, rounded, brilliantly-coloured pips, that appear (probably because of the marked contrast with the external dulness) even more glaring in hue than in the height of summer. A large number of the cultivated varieties are suitable for the purpose. Some are to be preferred to others. The experience of a season or two soon suggests the most serviceable, while some are apt to look askance at the Zonal Pelargonium at this season of the year, and that from an imperfect knowledge of the valuable floral service they may be made to render; others hesitate to avail themselves of their aid, on the ground that a special course of treatment is necessary. Dr. DENNY has recently pointed out that this course of treatment is a very simple one, and merely consists in potting on a number of spring or autumn struck plants, and during the summer keeping them from flowering, and exposed in the open ground, putting them into a dry, warm, and well-ventilated greenhouse in October, where they will flower up till February. Mr. A. F. BARRON has frequently shown at the Chiswick Gardens that it is a very easy matter to extend the blooming season on through the winter, and plants that were in full bloom in June will be equally free of bloom in November and December. All that is required is sufficient vigour in the plants to carry them through the winter period. It is simply essential to the well-being of the plants that they should be kept in a dry, warm atmosphere, so as to prevent any damp from settling on the leaves and flowers. A free admission of air during fine weather, and some fire-heat in damp, dull, and frosty weather will carry the plants through the winter and fully maintain their effectiveness.

—— The theory that certain PLANTS DIGEST AND ASSIMILATE THE INSECTS which they capture, is not very favourably received on the Continent. We have already given an account of Professor MORREN's experiments and his deductions, and shall probably revert to the subject, as we observe the Professor has made it the staple of an address before the Academy of Belgium. Dr. REGEL (*Gartenflora*) rather ridicules the idea, but he adds, we will await the unprejudiced observations of our competent German inquirers ("Wir wollen von Vorurtheil freie Beobachtungen unserer gründlichen deutschen Forscher abwasten"). The experiments and careful observations carried out by M. BATALIN in the St. Petersburg Botanic Garden seem to negative this theory, but further researches are necessary to ascertain what connection the formation of the oil in the hairs of Drosera has with the decaying animal matter. "A friend writes," Dr. REGEL adds, "that the only thing wanting is, that some wag should discover a tree in some little known part of the world, that would seize and devour large animals and men." He does not appear to know that this wonderful tree has already been discovered by a countryman of his own, we believe, judging from the name. We have given a full description of this vegetable monster and the atrocities it commits!

—— Can anything in the way of ornamental gardening present a more deplorable appearance than many of the gardens in the squares of London at this season of the year. Naked branches, black as night, and the soot-begrimed leaves of evergreens, in association with untrimmed lawns (in many instances) and undressed borders, are by no means calculated to inspire cheerful feelings in the lovers of Nature. A general aspect of neglect prevails, or with only occasional attempts at smartness. The conditions under which these gardens are maintained—invariably by subscription among the residents, and the work done by contract—are not unfavourable to their being maintained with proper care during winter. Perhaps at some future time all gardens of this character will be handed over to some proper authority, such, for instance, as the Metropolitan Board of Works as an illustration, to be maintained at the public cost, and under certain regulations for the public good. Were they placed under the supervision of some competent horticulturists, much more in the way of ornamental gardening might be attempted in the way of winter gardening by the employment of coniferous plants in tubs, Portugal Laurels, Laurustinus, Ivies, both green-leaved and variegated, &c., and, as a matter of course, protected during severe weather. It would necessitate a nursery where these plants could be kept during the summer, and fittingly prepared for their winter's service.

—— An important gathering of the members of the National Auricula, Royal National Tulip, and National Carnation and Picotee Societies will take place at the "Old Bull's Head," Manchester, on Wednesday, the 19th inst., at 1 P.M., to arrange the dates of the exhibitions for 1876, the schedules of prizes, plans of judging, and other matters connected with the management of the Societies. The meeting is convened in deference to a unanimous expression of opinion made on the occasion of the National Carnation and Picotee exhibition at Manchester in August last.

—— A monument has been erected in Père-la-Chaise, Paris, to the memory of M. BARILLET-DESCHAMPS, the late Head Gardener to the City of Paris. The memorial, which consists of a base surmounted by a large stone sarcophagus, ornamented with drapery, flowers, and other appropriate emblems, and crowned by a bush, was unveiled on December 22 last, when addresses were delivered by M. HENRY VILMORIN, M. ERMENS, and M. FELIX LEPÈRE, fils. The subscribers were not confined to French gardeners, but included several British sympathisers also.

—— We learn from the *Cultivator* that the Azore Islands exported between October 15 and December 15 no less than 121,331 cases of Oranges, 461 cases of Tangierine Oranges, and 6142 Pine-apples, employing 14 steamships and 42 sailing ships for the purpose.

—— SERICOGRAPHIS GHIESBREGHTIANA is a an excellent plant for the decoration of greenhouses during the winter months. It is cultivated at Kew, and may be seen in the house No. 4. The flowers are produced in lax panicles from the axils of the upper leaves, which they about equal in length. The corolla is tubular, with a bilabiate mouth, and of a brilliant red colour, contrasting well with the dark green foliage. The leaves are 4 or 5 inches long, oblong-lanceolate, acuminate, and quite glabrous. In habit the plant is rather stiff, and little inclined to branch, but by pinching and placing three in a pot nicely furnished specimens can be obtained. Cuttings may be struck in spring, or old plants may be cut back, like Eranthemums. An intermediate house is best till summer, when the plants may go into frames, and from thence be removed in autumn to the greenhouse, or a portion back to the intermediate house for earlier blooming. The flowers are much more persistent than is usual in the Acanthaceæ, and are useful for bouquets.

—— At one of the recent meetings of the Central Horticultural Society of France M. Vincent, a nurseryman, exhibited a Radish known as RUSSIAN RADISH, and concerning which a story is told which reminds us of the widow's cruse. The root is very large, and when it is required to be used a slice is taken off from the root, taking care not to drag up the latter from the soil. The wound heals over, so that in a few days another slice may be cut off if required. Surely this should be called the Cut-and-come-again Radish.

RECENTLY PUBLISHED PORTRAITS OF GARDEN PLANTS.

Name and Reference to Figure.	Character and Quality.	Leaves.	Flowers.	Season.	Native Country.
ABUTILON DARWINII, *Hook. fil.* .. .. Floral Mag. t. 172.—Malvaceæ.	Warm greenhouse shrub; outdoors in summer	Palmately lobed	Drooping, bell-shaped, dull orange, with red veins	April	South Brazil
ABUTILON DARWINII TRINERVE, *Regel* .. Gartenfl. t. 794.	Warm greenhouse shrub; outdoors in summer	Palmately lobed	Orange, with red veins and 3-nerved calyx	May	South Brazil
ABUTILON SELLOVIANUM MARMORATUM, *Hort. Veitch.*—Dall. Pl. Orn. t. 44. ..	Warm greenhouse shrub, robust; outdoors in summer	Large, cordate-acuminate, marbled with yellow and white	Those of the species, pale red ..	....	Brazil *Messrs. Veitch*
ACACIA NEMU, *Willd.* .. .. .. Flore, t. 2199.—Leguminosæ.	Hardy deciduous shrub = Albizzia rosea	Bipinnate, with small triangular falcate leaflets	Panicled, in capitate heads, with long rose-coloured stamens	August, Sept.	Japan
ACACIA SEYAL, *Delile* .. .. .. Gard. Chron., n.s., i. 729, fig. 155.	Greenhouse shrub, with twin stipular spines	Bipinnate, with oblong linear leaflets	Yellow, in globose heads ..	....	Egypt and Syria
ACALYPHA WILKESIANA, *Müll. Arg.* .. Dall. Pl. Orn. t. 24.—Euphorbiaceæ.	Stove evergreen shrub = A. tricolor	Ovate-acuminate, with bright coppery red variegation	Inconspicuous	....	Fiji Islands
ACALYPHA WILKESIANA MARGINATA, *Hort.*—Floral Mag. t. 156	Stove evergreen shrub (Williams' Cat. 1875, 17, with fig.)	Ovate-acuminate, margined with rosy carmine	Inconspicuous	....	Fiji Islands *Mr. Williams*
ACER POLYMORPHUM PALMATIFIDUM, *Sieb. and Z.*—Flore, t. 2156-7.—Aceraceæ.	Hardy or half-hardy deciduous small tree, very graceful	Palmatifidly 5 to 9-lobed; lobes narrow, pinnatifid, acute	[L. bright green, segments serrated]	....	Japan
ACHILLEA AGERATIFOLIA, *Benth.* .. .. Bot. Mag. t. 6117.—Compositæ.	Half-hardy perennial, dwarf, tufted	Ligulate-lanceolate, crenate-serrate, white, downy	White, in heads 1 in. across, with broad ray-florets	May	Greece *Hull Bot. Gard.*
ACTINIDIA VOLUBILIS, *Planch.* .. .. R. H., 1874, 395. f. 54.—Ternstrœmiaceæ.	Hardy climbing, free-growing, deciduous shrub	Oval on flowering branches; elliptic on climbing stems	Small, white	June	Japan *French Gardens*
ADIANTUM CAPILLUS-VENERIS CRISTATUM, *Hort.*—Rev. Hort. 1874, 228, figs. 29, 30.—Polypodiaceæ.	Greenhouse evergreen Fern, compact, very curious	Fronds ramose, the branches ending in compact crested tufts	[Appears to be the same as A. Lüddemannianum]	....	*French Gardens*
ADIANTUM GRACILLIMUM, *Moore* .. .. G. C., n.s., ii. 674, with fig.; iii. 172, fig. 31; R. H. Belge, 1875, 125, fig. 33.	Stove evergreen Fern, light and nebulous; sport from A. cuneatum	Fronds decomposed, deltoidly ovate, with numerous minute pinnules	[Ultimate pinnules $\frac{1}{24}$ to $\frac{1}{8}$ inch in length, obovate, or 2—3 lobed]	....	Garden variety *Mr. Williams*
ADIANTUM LUNULATUM, *Burm.* .. .. Belg. Hort. 1875, t. 5.	Stove Fern, deciduous, adapted for basket culture	Fr. pinnate, drooping, proliferous	[Pinnæ stalked, lunulate] ..	....	India *Jacob-Makoy*
ADIANTUM MACROPHYLLUM GLAUCUM, *Moore.*—G. C., n.s., iii. 620, figs. 126, 127.	Stove evergreen Fern, handsome	Fr. glaucous, pinnate, terminal pinnæ pyramidal	[Pinnæ nearly straight-sided] ..	....	New Grenada *Messrs. Veitch*
ADIANTUM PRINCEPS, *Moore* .. .. .. Gard. Chron., n.s., iv. 197, figs. 43, 44.	Stove evergreen Fern, one of the finest Maidenhairs	Fr. 3 feet, pendent, deltoid, quadripinnate, greyish green	[Pinnules roundish rhomb., 1 in., terminal cuneately flabellate]	....	New Grenada *Messrs. Veitch*
ADIANTUM RUBELLUM, *Moore* .. .. Flor. and Pomol. 1870, 267, with fig. at p. 250; Dall. Pl. Orn. t. 26.	Stove evergreen Fern, elegant, of dwarf habit	Fr. triangular-ovate, bipinnate; pinnules cuneiform lobed	[Young fronds strongly tinted with rosy red]	....	Bolivia *Messrs. Veitch*
ADIANTUM SEEMANNI, *Hook.* .. .. Gard. Chron., n.s., iii. 396, figs. 77, 78; Veitch Cat. 1875, 2, 10, with fig.	Stove evergreen Fern, bold and striking	Fr. pinnate, olive-green, pinnæ deltoid-ovate acuminate	[Sori oblong. A. Wilsoni has been grown under this name]	....	Cent. America *Messrs. Veitch*
ADIANTUM SPECIOSUM, *Hook.* .. .. Veitch Cat. 1875, 1, 10, with fig.; Flor. and Pomol. 1875, 272, with fig.	Stove Fern, deciduous, of semi-scandent habit	Fr. tripinnate, with spreading pinnæ, downy	[Pinnules $\frac{3}{4}$—1 in. across, deeply lobed]	....	Peru *Messrs. Veitch*
ÆCHMEA CŒLESTIS, *E. Morren* .. .. Flore, t. 2146.—Bromeliaceæ.	Stove perennial = Hoplophytum cœleste	Ligulate, concave, spiny-edged, scaly beneath	Sky-blue; in close pyramidal panicles, on erect scapes	Winter	S. America
ÆCHMEA SPECTABILIS, *Brongn.* .. .. Rev. Hort. 1875, 311, with tab.	Stove perennial, ornamental ..	Spreading, channelled, ligulate, 2½ ft. long, 3—4 in. broad	Calyx fleshy, rosy, ovate; petals 1 inch long, rosy crimson	....	Guatemala *M. Linden*
AERIDES VANDARUM, *Rchb. f.* .. .. Gard. Chron., n.s., iii. 537, fig. 115; p. 591. —Orchidaceæ.	Stove epiphyte, beautiful = A. cylindricum, *Hort.*	Elongate, subulate, terete, 4—6 in. long	Large, white, the sepals and petals crispy	Spring	India
AGARISTA CALLIOPSIDEA, *DC.* .. .. Gartenfl. t. 816.—Compositæ.	Hardy or half-hardy annual, showy, 1—2 feet high	Bipinnatifid, with few entire linear lobes	Showy, orange, with broad rosy florets	Summer	California *MM. Huber*
AGAVE AMERICANA, *Lin.* .. .. .. R. H. 1875, 152, fig. 23.—Amaryllidaceæ.	Greenhouse succulent perennial of massive growth	[Woodcut of a flowering plant 28 ft. high]	[See also G. C., n. s., iv. 811, fig. 163, for group of plants]	September	S. America
AGAVE PUBESCENS, *Regel et Ortg.* .. Gartenfl. t. 804.	Greenhouse succulent perennial, dwarf, stemless	Lorate-lanceolate, pubescent, with transverse brown blotches	Small, green, tubular, racemose; scape 3 ft., simple, erect	....	Mexico *Zurich Bot. G.*
AGAVE VICTORIÆ REGINÆ, *Moore* .. .. Gard. Chron., n. s., iv., 484, fig. 101.	Greenhouse succulent perennial, dwarf, stemless, remarkably distinct	Rigid, triquetrous, deep green, with white margin and terminal dark brown spine	[A. Consideranti, *Carr.*, Rev. Hort. 1875, 429, fig. 68]	....	New Mexico *Mr. Peacock*
AGAVE XALAPENSIS, *Roezl* .. .. .. Rev. Hort. Belge, 1875. 174, fig. 44.	Greenhouse succulent perennial, stemless, elegant	Linear-oblong, acuminate, glossy, serrate, in dense tufted mass	Tubular, recurved, over 2000, in simple erect spike, 13 ft. high	June	Mexico
ALLIUM NARCISSIFLORUM, *Vill.* .. .. Bot. Mag. t. 6182.—Liliaceæ.	Hardy ornamental bulb, with showy flowers	Narrow linear; 5 to 6, sheathing, fleshy, glaucous	Campanulate, deep purple, 2—10 in close umbel	Summer	N. W. Italy *Mr. G. Maw*
ALOCASIA LOWII, *Hook.* .. .. .. Flore, t. 2204; Dall. Pl. Orn. t. 7.—Araceæ.	Stove tuberous perennial, handsome	Cordate-sagittate, 14—16 in., peltate, deflexed, olive-green, with thick white ribs	Spathe white, with oblong acute lamina [l. purple beneath]	January	Borneo *Messrs. Low & Co.*
ALOCASIA METALLICA, *Hook.* .. .. Flore, t. 2208-9.	Stove tuberous perennial, handsome	Cordate ovate, peltate, deflexed, 12—18 in., rich bronze colour	Spathe purplish-red, with short lamina [l. purple beneath]	....	Borneo *Messrs. Low & Co.*
ALOCASIA PLUMBEA, *Van Houtte* .. .. Flore, t. 2206.	Stove tuberous perennial, with ornamental foliage	Ovate sagittate, erect, dark green, purplish beneath	Spathe purplish, white within; spadix white	....	Java
ALOCASIA SEDENI, *Hort. Veitch* .. .. Dallière, Plant. Orn. t. 21.	Stove tuberous perennial, handsome [nerves greenish-white]	Oval cordate sagittate, deflexed, bronzy green	[L. purple beneath; hyb. A. metallica × A. Lowii]	....	Garden variety *Messrs. Veitch*
ALOE BAINESII, *Dyer* .. .. Gard. Chron., n.s., i. 567, 569, figs. 119, 120.—Liliaceæ.	Greenhouse succulent shrub, 20 ft. high, the stem dichotomous	1 ft., amplexicaul, channelled, with distant spines, glaucous	Spicate, orange or scarlet? ..	....	Natal *Kew Bot. Gard.*
ALOE BARBERÆ, *Dyer* .. .. .. G. C., n.s., i. 566, 571, figs. 117, 122.	Greenhouse succulent shrub, 40 ft. high, stems dichotomous	2¾ ft., narrowed from base, channelled, green; spines distant	Spicate, orange or scarlet?	....	Caffraria *Kew Bot. Gard.*
ALOE DICHOTOMA, *Lin.* .. .. .. Gard. Chron, n.s., i. 567, 571, figs. 118, 121; Rev. Hort. 1874, 334, fig. 46.	Greenhouse succulent shrub, 30 ft. high, the stems dichotomous	Ensiform denticulate, 1 ft. long, in terminal tufts	Brigbt, pale yellow	....	S. Africa
ALPINIA VITTATA, *Hort. Bull* .. .. Dall. Pl. Orn. t. 29.—Zingiberaceæ.	Stove perennial, with variegated foliage	Elliptic-lanceolate, 6—8 in. long	(L. pale green, with divergent stripes of white)	....	S. Sea Islands *Mr. Bull*
ALSOPHILA AUSTRALIS WILLIAMSII, *Moore* Gard. Chron., n.s., i. 725, fig. 154.	Greenhouse Tree Fern, of stately habit (Cyatheaceæ)	Fr. tripinnate, elongate, drooping	(A fine weeping Tree Fern) ..	....	Origin unknown *Mr. Williams*
ALSTRŒMERIA PERUVIANA NIVEO-MARGINATA, *V. H.*—Flore, t. 2175.—Amaryll.	Half-hardy tuberous perennial, ornamental	Lanceolate, stalked, white-edged	Rose, crimson and white, with green tips and black spots	July	S. America *Marq. Della Rosa*
AMARANTHUS HENDERI, *Hender* .. .. Flore, 1875, 30, with fig.—Amaranthaceæ.	Half-hardy annual, of pyramidal habit	Lanceolate, Willow-like, undulated [near A. salicifolius]	[L. beautifully coloured, orange, rose, copper, &c.]	September	Garden variety *Messrs. Hender*
AMARYLLIS LEOPOLDII, *Hort. Veitch* .. G. C. 1870, 733, fig. 140; Veitch Cat. 1875, 3, 11, with fig.; Flor. M. tt. 473-6.	Stove bulb, very showy and robust (Amaryllidaceæ)	Broadly strap-shaped	7 in. broad, crimson, the outer half creamy white	December	Peru *Messrs. Veitch*
AMARYLLIS MENDELII, *Hort. Williams* .. Floral Mag. t. 167.	Stove bulb, showy	Broadly strap-shaped	Crimson, with greenish star, large	Winter	Garden variety *Mr. Williams*
AMARYLLIS O'BRIENII, *Hort. Henderson* .. Floral Mag. t. 153.	Stove bulb, showy = pardina × reticulata striata	Broadly strap-shaped	Blush, flushed and veined with crimson	Winter	Garden hybrid *E. G. Henderson*
AMARYLLIS PROCERA, *Duchartre* .. .. Flore, t. 2077-8.	Cool stove bulb, with long, flask-shaped bulb	Sickle-shaped, distichous, falcately curved, persistent	Lilac-purple, handsome	Winter	Brazil
AMARYLLIS ROEZLII, *Regel* .. .. .. Gartenfl. t. 809.	Cool stove bulb, allied to A. equestris	Ensiform, bluntish, produced after the flowers	In pairs, nodding, funnel-shaped, brick-red, greenish-white base	....	Bolivia *Petersb. Bot. G.*
AMARYLLIS VIRGINALIS, *Hort. Williams* .. Floral Mag. t. 130.	Stove bulb, showy	Broadly strap-shaped	Waxy-white, 4—5 in an umbel ..	Winter	Garden variety *Mr. Williams*
AMYGDALUS BOISSIERI, *Carrière* .. .. Rev. Hort. 1875, 352, fig. 58.—Drupaceæ.	Hardy deciduous shrub, of branched suberect habit	Narrowly elliptic, coriaceous, glaucescent beneath	Pale rose, succeeded by reddish-green fruit	Spring	Asia Minor *Jardin du Mus.*
AMYGDALUS COMMUNIS FLORE-PLENO, *Carr.* Rev. Hort. 1875, 370, with tab.	Hardy deciduous shrub, ornamental	Oval-elliptic, acuminate	Flesh-colour, full double, rosy in bud	April	*French Gardens*
AMYGDALUS NANA SPECIOSA, *Carrière* .. Rev. Hort. 1874, 370, with tab.	Hardy deciduous shrub, showy	Lanceolate, appearing after the flowers	Crimson-red, the buds equally coloured	May	*French Gardens*

Home Correspondence.

The Weather in North Notts in 1875.—The year just passed will be long remembered in this district for its excessive rainfall, and the floods in consequence in the valley of the Trent, which caused a great loss of life and property. With the exception of January the rainfalls in the months of February, March, April, and May, were below the average, but in June, July, August, September, October, and November they were greater than I ever before, collectively, registered in these months—being 23 inches 16 parts. The annual average rainfall here for the last forty years is nearly 25 inches, and in 1875 it was 31 inches 48 parts, or nearly 6½ inches above the average. The heaviest rainfall occurred on August 7, when 2 inches 32 parts fell in the 24 hours. The mean temperature for the year was 48°, being 1° below the average; the thermometer was highest on August 16, 82°, and lowest on January 1, 10°, or 22° of frost. All through the summer and autumn months the wind, from easterly currents, prevailed more frequently than I ever registered before, even in the months with the greatest rainfalls. In the spring months the weather was favourable at times, and there being an excellent show of bloom on all hardy fruit trees, a full crop was confidently expected, but the extraordinary changes of temperature in April and May thinned the crops considerably in this district. In July and August the heavy rains likewise spoilt the Cherry and small bush fruit crops, such as Gooseberries, Raspberries, and Currants in quantities. Vegetables in general, of all kinds, were fine and plentiful, for the rains suited Peas, Beans, Celery, Scarlet Runners, Onions, and all the Brassica tribe; and I have never seen them finer at the shows in the neighbourhood, or in the markets. A slight frost on the morning of May 30 injured the early Potato crops in low situations a little—but the crops of them in general were fine and free from disease up till the end of July. In the beginning of August the Rector of Woodstock, an excellent second early sort, showed the disease in its most virulent form, and afterwards it progressed rapidly amongst all the others till in the end of September only a small lot of seedlings on a south border were worth the lifting. *William Tillery.*

The Golden-margined Thyme.—Among things not generally known, but yet useful to know, is the fact that the Golden-margined Thyme — Thymus citriodorus aureo-marginatus—is not only more robust in habit than its green-leaved congener, but also retains its leafage all through the winter, whilst the common kind sheds at least one half of its foliage. As the Lemon Thyme is an exceedingly important herb, and one in request all the winter through, a knowledge of this fact is of some value to those who grow it either for market or home uses. Even during severe frost it remains quite unaffected. In wild gardens or as edgings for American borders this Thyme is most serviceable, and needs but little attention to keep it both neat and ornamental. *A.*

Po'pulus, not Pop'ulus, &c.—Almost all the books of reference accent the Latin name of the Poplar as Pop'ulus. Surely, according to classical usage, it should be Po'pulus. By the way, what is the luminous plant mentioned by Pliny as Nyctegretos? I have not Pliny at hand. Can it have been a luminous fungus, such as Mr. W. G. Smith has lately made mention of in your columns? *M.*

Ruskin in the Garden.—A local paper is responsible for the statement that, during a visit recently paid by the great art critic, Mr. Ruskin, to Broadlands, near Romsey, the seat of the Right Hon. Cowper Temple, M.P., that gentleman used to assist his appetite by working in the garden. Most of our practical readers, who have had abundant experience of the appetising flavour imparted by the soil, know that there is no better training to constitute a good trencherman than a few hours' steady work at garden trenching. *A.*

Rollisson's Unique Pelargonium.—I can fully endorse all you say at p. 51 as to the usefulness of this fine old Pelargonium for winter blooming when treated in the way you described, as I have for the last twenty years depended very much on it for the above purpose, and to succeed the fancy and large leaved varieties as they go out of bloom. As a summer and autumn bloomer it is unrivalled after it attains a little age, or when kept with its roots cramped in moderate sized pots. We use it for baskets suspended from the roof of the conservatory, in which position, when laden, as it always is in early spring, with its large rich trusses of flowers, it is most effective. Baskets now hanging in the above position have branches depending from them over 5 feet long, with others of various lengths supported by being tied to the chains by which the baskets are suspended, so that when in bloom they present a rich, bold mass of colour. By associating a few of L'Elégante, or even the old Ivy-leaf with them, the effect is greatly heightened. One of the old plants threw out a sport last summer that has lilac-coloured flowers, that will I think, be worth perpetuating. In beds, Rollisson's Unique is too rampant a grower to flower freely, unless restricted by cramping its roots in pots, but for vases or boxes, where it can hang over, it has a fine effect. *J. Sheppard.*

Sedums and Sempervivums.—The remarks under the head of "Sempervivum tectorum" were certainly not intended to convey any idea of the two genera Sedum and Sempervivums being synonymous, neither did I intend to speak of House-leek as a Sedum. If your correspondent will refer to the article I do not think he will find I did so. But I admit that I was in error in calling Sempervivum arachnoideum, Cobweb Sedum. I ought, strictly speaking, to have called it Cobweb Sempervivum. *Frederick Stratton, Newport, Isle of Wight, Jan.* 10.

Borage.—This well-known "herb" is, as most of your readers are aware, often inquired after by the butler in the generality of places for using in "claret cup." Yet towards the end of winter and spring it is often not in a very flourishing condition, and frequently conspicuous by its absence. Some few summers ago, when it was in full bloom in the herb border, admiring its bright blue flowers, I thought I would try a few plants in pots as a means of having a few fresh "leaves and flowers" (should it be asked for) until the spring-sown plants came on out-of-doors. The plant, of which the above is an illustration (fig. 17), was with four or five others taken up from the open ground in the second week in October, 1873 (being then seedlings with five or six leaves), and potted into 32-sized pots and kept in a cold house. The photograph was taken in March, 1874. We used two or three of them in the conservatory, and from their bright blue flowers, pyramidal growth, with healthy foliage, they were very telling amongst spring flowering plants. *J. Batters, The Gardens, Chilworth Manor, Romsey.*

FIG. 17.—THE BORAGE, BORAGO OFFICINALIS.

Accident to a Market Gardener's Carter.—A singular and fatal accident occurred last week to a young man in the employ of Mr. W. Trusler, market gardener, of Feltham. The deceased had been to Kensington with a load of Apples, and, returning with a cart loaded with manure, had nearly reached his employer's house, which is situated on a private road, when one of the wheels suddenly settled into a soft place, thus throwing the weight of the load heavily on to the tail of the cart and causing the horse to rise. It is assumed that the man must have run behind the cart to put down the tail stick, in the hope of saving the load from tipping up, but before he could accomplish this the load came down and crushed him to death almost instantaneously. Some ten or fifteen minutes are supposed to have elapsed before the accident was discovered, when the horse was found suspended by the harness in the shafts. As soon as possible the horse was released, the manure removed, and the cart lifted from the body, when it was found that the tail-board, with its weight of nearly a ton of manure, had fallen upon it, and the unfortunate man had been both crushed and suffocated. At the inquest, and as one of the jury, I ventured a suggestion that it might save future accidents of a similar character if all market carts had suspended behind, in addition to the ordinary tail-stick, a stout stick that should always reach within a few inches of the ground, and which should be always hanging pendent when the cart was loaded. A small block chain on either side would prevent its touching the wheels, whilst the knowledge that it was there would prevent men from rushing into a similar danger. The suggestion was favourably entertained by the court. *A. D.*

An Open-air Ice House.—Will you permit me to put Mr. Ward right respecting the ice stacks at Longford Castle (see vol. v., p. 43)? I can endorse all that he says respecting the mode there practised, as it fell to my lot to make the first stack at Longford Castle, in the way Mr. Ward describes. The plan is a good one, and can be safely imitated. But as to who suggested the plan, I beg to state that the noble Earl obtained it from Coleshill, where Mr. Eckford had practised it for some time before. It may not be out of place to mention that I have seen ice keep equally as well covered with Fern and leaves. *C. Penford, Powerscourt Gardens.*

Grafting Roses.—In your paper of the 1st inst. you had an article on grafting Roses, which I have known before, though it may not be known to all your readers how it is done. I want to know if the spring prunings of Roses grafted on to small pieces of the root of the Manetti stock, say in lengths of about 3 inches, and the scions to be about 4 inches, will take as well in the open ground. I once read that if you save your spring prunings and cut them into lengths of from 3 to 5 inches, and cut off the roots of those stocks you intend to use for the purpose into lengths of 3 inches, and whip-graft them, tying the grafts with matting, and then insert them after you have done them into the ground in rows level with the top bud of the scion, they will in the end of the summer make dwarf plants about 2 feet in height. I desire to know if this is practicable or not. *A. H. H.*

[Although it is possible to succeed with Roses grafted and treated in the way mentioned by "A. H. H.," they do not unite with anything like the same degree of freedom they do when subjected to artificial heat. The latter appears almost necessary to excite the stock sufficiently to cause it to form the granulatory matter that leads to a union of the cut parts. In the open ground this process is slow, and the grafts languish from not being fed in time to support growth. When the conditions are favourable as to heat and moisture, and the operation of grafting is conducted in a skilful manner, success under glass becomes certain. *J. Sheppard.*]

Inheritance: Tailless Dogs.—In Loudon's *Cyclopædia of Agriculture* it is stated that the English sheep-dog has been so long accustomed to have the tail taken off, "that in some instances the custom has operated on Nature, and these dogs are sometimes pupped tailless." Can this be substantiated? If so, there is some reason to fear the appearance of wooden-legged babies. *X.*

Tricyrtis hirta.—"The Rambler," in his graphic sketch of Isola Bella, writes that on the adjacent islet, Isola Madre, "Everywhere, where a corner is to be filled up, is the curious Tricyrtis hirta, which in England we never see out of a greenhouse." It is worth while making it generally known that Tricyrtis is as completely hardy as any of our old-fashioned border flowers. I have had it uninjured for winters past in the open ground without the slightest protection, enduring 25°, 20°, and 15° of Fahr., and shooting up its stout herbaceous stems in spring as if it had never known what frost was. This hardihood renders it as valuable as singular. The plant attains a height of 3 or 4 feet. Its leaves (except in their roughness, whence its specific name hirta) resemble those of several Japan Lilies. The flowers (ambitious to look like Passion-flowers, although it is not a climbing plant, but failing because they cannot put forth the rays) are white, thickly sprinkled with minute lilac spots. Like those of the Water-trefoil or Buckbean of our marshes, whose beauty obtains for it a place, as Menyanthes trifoliata, in nurserymen's catalogues, they gain by being inspected with a pocket lens of low power. There is a less common variety with black or

dark purple petals mottled with white. The Tricyrtis is not nice about a little rough treatment. It flowers late; but when the drop in temperature comes the stool may be lifted, put into a large pot, and set into a greenhouse to continue blooming and supply a useful addition to autumnal bouquets, the more so as it is not a showy or a striking flower but requires to be looked at closely to discover its beauty. A careless observer would be apt to pass it by as an uninteresting and dingy thing. In Isola Madre, underneath a fine Grevillea, there also "runs a ravine filled with fragrant Funckias." These Funckias (once called Hemerocallis) are likewise hardy, but several of them deserve a place in a warm greenhouse (F. subcordata, for instance, whose elegant foliage and snowy sweet-scented flowers ought not to have been fitted with so ugly a name), where they can develope their beauties out of the reach of snails. There are also several variegated Funckias., F. lanceolata, foliis marginatis, F. alba, albo-marginata, medio-picta, &c., all hardy, all charming pot plants, and all a favourite food of terrestrial molluscs. *E. S. D.*

Thrum-eyed Polyanthus.—I should feel much obliged to any of your readers that are acquainted with our old botanical authors if they could refer me to any instance of the use of the word "thrum" or "thrum-eyed" as now applied to the Polyanthus, in addition to the good quotation from Lyte, given by Dr. Prior under the word "thrum-wort," and the quotation given by Johnson. The word is a genuine old English word, and may be found in our Bible. In Isaiah xxxviii. 12, for "pining sicknes," the alternative marginal reading is "from the thrum." The word is also used by Shakspeare. I should be glad, at the same time, of any references to the use of the word "boll" or "bolled," as used of the Flax in Exodus ix. 31. *Henry N. Ellacombe, Bitton Vicarage.*

Mr. Baker on the Liliaceæ.—Referring to your kind notice at p. 750, No. 102, 1875, of my paper on Anthericeæ, read at the Linnean Society on Dec. 2, would you allow me a word of explanation? I find that one or two remarks which were made at the meeting, which I did not understand in that sense at the time, have led to the impression that this paper on Anthericeæ completes a monograph of the whole order Liliaceæ. The true state of the case is that I proposed to devote eight papers to the order, and that this is the fifth of the series. Their sequence was intended to be as follows:—1, Liliaceæ proper; the gamophyllous series of tribes and genera; 2, Scilleæ and Chlorogaleæ; 3, Tulipeæ; 4, Asparagaceæ; 5, Anthericeæ and Eriospermeæ; 6, Colchicaceæ, with the abnormal tribes, such as Gilliesieæ, Liriopeæ, &c.; 7, Allieæ and Aphyllantheæ; 8, Aloineæ and Yuccoideæ, including Xanthorrhœa, Dasylirion, and Beaucarnea. The sequence is, of course, not intended to represent a systematic arrangement, but was influenced to some extent by a consideration of what was most speedily required for purposes of daily work. The three last papers, I wish therefore now to say, are still unwritten, and therefore any information bearing upon them I shall be specially glad to receive. I intend to give a general index of generic and specific names when the whole series is finished. *J. G. Baker.*

The Weather at Fulham.—The valley of the Thames is notorious for the severity of its frosts, and this season proves no exception to the rule. I have not seen so many degrees of frost registered anywhere as here, excepting in Cornwall, where a gentleman writing in one of your contemporaries states that he has had 17°. Here we had 17° on December 3, and snow fell during the day and night. On the 4th at 2 P.M. the atmosphere began to thicken, and by 3 P.M. it was dense and of a yellow colour; the darkness was such that at 20 yards it was scarcely possible to recognise any one—it was a fair specimen of a London fog. The 5th of January was a beautiful day, and for some days previous the weather had been unusually mild, but on the morning of the 6th the thermometer indicated 12° of frost. Since then it has been more or less frosty, with a slight fall of snow on the morning of the 11th, and on the 12th we had 20° of frost. *W. P. R., The Gardens, Peterborough House.*

FIG. 18.—QUERCUS CONFERTA, WITH STELLATE HAIRS FROM BACK OF LEAF × 50 DIAM.

THE HUNGARIAN OAK.

ON the occasion of a visit paid to the Royal Botanic Garden, Edinburgh, during the summer of the past year, my attention was drawn by Mr. McNab to a handsome deciduous Oak, known under the provisional or commercial name of Q. pannonica. As an ornamental tree it is deservedly a great favourite with that gentleman, who knows how to employ it picturesquely to the best advantage. It was my privilege to "assist at" the removal and replanting of one of these trees in July last, in that speedy and satisfactory manner familiar to those who have had experience with Mr. McNab's method of transplantation, and with the machine devised by his father for that purpose. In consideration of these circumstances I may be excused for feeling a kind of personal interest in this Oak, so much so that I felt it a duty incumbent upon me to endeavour to unravel the history of the tree, and ascertain its precise botanical *status*. The results of my researches I now beg leave to submit to the Society; I must, however, speak of it as Q. conferta rather than under the name of Q. pannonica, as it has been duly baptised and registered under the former name, while the latter appellation is a mere commercial or garden name.

Q. conferta forms a handsome round-headed tree of moderate size, with spreading branches and grey cracked bark. The young shoots are more or less hairy, but become glabrous. The leaves are deciduous, very shortly stalked or almost sessile, 5 to 7 inches or more long, 3 to 4 inches broad, membranous deep-green and glabrous above, pubescent beneath, with stellate hairs. In outline they are oblong obovate, tapering gradually to the cordate base and more abruptly to the somewhat rounded apex, pinnately lobed, sometimes so regularly as to be almost pectinate, at other times irregularly so as to outline and direction; the upper lobes extend about half-way down from the margin to the midrib, the lower ones rather farther. The lobes themselves are oblong, acute, not spine-pointed, entire, or with a slight tendency to lobulation. The sinuses between the lobes are narrow, linear, acute at the proximal end, somewhat dilated at the distal extremity. The petioles are very short, pilose, channelled on the upper surface, and dilated at the base. The stipules are deciduous, longer than the petioles, pilose, linear-subulate. The buds are elongate-ovoid, pilose, clustered about the ends of the shoots, and sometimes encircled by the withered stipules. Bud-scales oblong ovate, membranous, with a dark edge.

I forbear from giving the characters assigned to the acorns and their cups, as I have not seen fresh specimens of them, and it is for its foliage that the tree will be valued in British gardens.

On applying to Mr. McNab for information as to the history of the tree, he was kind enough to furnish me with the following particulars:—

"The largest tree in the Edinburgh Botanic Garden of the Oak known as Quercus pannonica was procured about twenty years ago from Mr. P. S. Robertson, when in charge of Messrs. Lawson's nursery at Golden Acre. It was planted in a part of the garden where, judging from its free-growing nature, it could not possibly extend itself into a full-grown tree, and was in consequence removed to its present site in 1865, and planted by Sir William Gibson Craig, Bart., of Riccarton, who at that time took an active hand in the arrangements with the Government when the old Experimental was added to the Botanic Garden, and it was the first tree removed into it. This tree is now 20 feet high, and 36 feet in circumference of branches; stem 28 inches in circumference. A very fine plant of this Oak is to be seen at Riccarton, where it is a great favourite with Sir W. G. Craig. As Mr. Robertson had the first handling of this Oak in Scotland, I enclose a note received from him on the subject."

Mr. Robertson's note is to the following effect :—

"I first saw the Quercus pannonica in the garden of the London Horticultural Society twenty-seven years ago, and in a year or two after that I procured for Messrs. Lawson several young plants from Booth's nursery, Hamburgh. I believe all the plants in Britain till 1870 or so were raised from grafts taken from Booth's plants, and grafted in Lawson's nursery. The London tree seems never to have attracted much notice. I was told by Mr. Booth (now deceased) that he had it from Hungary, and under the name of 'lyrata,' and also 'panonacea'; but he fixed on the name pannonica, and it has stuck to the plant. I have in vain tried for more than twenty years to get seeds. If a supply of seeds could be obtained in early autumn they would probably grow, but would not do so, I fear, if they arrived later than March."

Loudon mentions that "there is an Oak in the London Horticultural Society's garden which was received from M. Schammes, of Pesth, under the name of Q. conferta," and which is doubtless our plant.

Wierczbicki, in a report on a botanical excursion in the Banat contained in the *Flora* for 1842, devotes some space to the description of the tree and to its botanical history. He shows that though Kitaibel's plant was but imperfectly known to botanists, yet that the foresters were well acquainted with the tree; in confirmation of which he cites the titles of a large number of papers in various German journals devoted to forestry, but which I have been unable to consult.

In 1860 specimens were submitted to the late Professor Lindley by Mr. Thomas Rivers (*Gardeners' Chronicle*, 1860, p. 73), with a note on the vigour of the shoots and the magnitude and long persistence of the leaves. Dr. Lindley was unable to refer it to any species described in works accessible to him, but mentions it as probably identical with a species, specimens of which were gathered near Constantinople by Mr. Bentham.

Although, as before said, I have not seen the acorns, yet, from a comparison of the leaves with native specimens and with figures, I have no doubt whatever that the Q. pannonica of gardens is the Q. conferta of Kitaibel, a species which Endlicher referred to Q. pubescens and Alphonse De Candolle to Q. Farnetto var. β conferta. For garden purposes it will be best to call the tree by its original name of Q. conferta. The tree is figured under this latter name in Reichenbach's *Ic. Floræ Germanicæ*, xii., t. 646; and also in Kotschy's *Die Eichen Europ.* (1862), t. 14. The latter figure is very good, in the former the leaves are more nearly sessile than is the case in the Edinburgh or native specimens.

It is a native of South-Eastern Europe, Transylvania, and Turkey in Europe, where it forms vast forests. Its wood is stated by Kotschy to be very durable, so much so that in certain Transylvanian mines, abandoned since the time of the Romans, and in which timber from this tree was used, the wood has still all the appearance of having been but recently felled. Further, we are told that the acorns are sweet to the taste, and are eaten by the Servians. In Hungary, we are told, it is sometimes called the Black Oak, or the Gipsy tree, Kittu-jack.

It may be asked why I have adopted the name conferta instead of following either Endlicher or De Candolle, the former of whom, as we have seen, referred it to Q. pubescens, the latter to Q. Farnetto var. To this I reply that, in my opinion, formed after a comparison of numerous specimens in the herbaria, the Oak in question is distinct from either of the species to which it has been referred, though very possibly a derivative from one or other of them. The ordinary Q. pubescens of books and of plantations is quite different from our present plant, and nothing but confusion would arise from referring the latter to that species. I cannot think that it is any nearer to Q. Farnetto, to Q. sessiliflora, to Q. pyrenaica, or to any other of the species to which it is supposed to belong. At the same time I am too well aware of the impossibility of determining what is a species and what a variety among Oaks—or indeed among any other plants—to question the right of any one to come to a different conclusion from that to which I have arrived. I have preferred, for garden purposes, to treat it, as it really is, as a distinct form, to adopt for it the earliest specific name I could find—one under which the plant has been well figured and described, and one which, for garden use at any rate, is not inaccurate, is convenient, and will not lead to confusion. In ordinary parlance, perhaps, the appellation Hungarian Oak may be as convenient as any, though it must be remembered that the species is not confined to that country.

It may be convenient, lastly, to give the synonmy of this species in brief as follows :—

Q. CONFERTA, Kitaibel, in Schultes Œster. Flor. ii.; Aufl. i. 619 (1814); Rochel, Plant. Banat. (1828), p. 26 (name only); Reichenbach, Ic. Flor. Germ. xii., tab. 646; Kotschy, Eichen Europ., t. 14; Wierczbicki, Flora (1842), pp. 269, 273 (good description); Schur, Enum. Pl. Transsilvan. (1866), 608; Koch, Dendrologie, ii., pt. 2, p. 41 (1873); Wilkomm, Forstl. Flora (1875), 347, where several other references are given.

Q. Farnetto, Tenore (1819), var. β conferta, Alph. D.C. Prodr. xvi., pt. 2, p. 11; Parlatore, Flor. Ital. iv. (1867), p. 184 (by error congesta).

Q. apennina, Lois. Desl. in Nouv. Duham. vii. 177, tab. 53 (1819), ex Koch, loc. supra cit. sed. vix.

Q. Esculus, Poll. Fl. Veron. iii. 125 (1824), nec L. ex Koch, l. c.

Q. pyrenaica var. ?, Loudon, Arboretum, iii. (1838), p. 1844.

Q. pubescens, Endlicher, Gen. Plant. suppl. iv., pt. 2, p. 24 (1847), vix Willd. sp. iv., 450.

Q. pannonica, Hort. Booth, Edinb., &c.

Q. sessiliflora var pannonica, Hort. Kew, Hemsley; in *Gardeners' Chronicle*, October 9, 1875, p. 455.

Q. hungarica, Hubeny, in Flora (1842), 269, et Hort. Germ., fide Koch, l. c.

Q. Pseudo-Ægilops, Arbor. Muscav. 624, ex Koch, l. c.

Q. Ægilops latifolia, hort. quoruad., fide Koch, l. c.

M. T. M. (*Read at the Meeting of the Botanical Society of Edinburgh, Jan.* 13.)

Notices of Books.

UNDER the title *Men of Mark*, Messrs. Sampson Low & Co. are publishing a series of excellent photographic portraits, executed by the Woodbury process. The portraits in the number before us are those of the Earl of Dufferin, Sir E. Creasy, and Sir R. Baggallay, and we may add that they are excellent both as portraits and as photographs.

—— Messrs. Macmillan & Co. have re-issued the very interesting and valuable book of reference compiled by Mr. Irving, and entitled *Annals of our Time*, with a supplement bringing the work down to 1874. This book should be in every gentleman's library, and on an editor's table it will be invaluable.

—— The *Floral Magazine* lays before its readers this month coloured figures of hybrid Tea Rose Captain Christy, said to be a cross between a Tea Rose Victor Verdier and Hybrid Perpetual Victor Verdier. Whatever its origin it is a grand Rose, but delicate, and not adapted to the Manetti stock. The other plates are devoted to Begonia Emperor, one of Messrs. Veitch's hybrids between B. Clarkii and B. Chelsoni (a grand plant); to two Japanese Chrysanthemums—Cry Kang? and Dr. Masters; and, lastly, to the very beautiful × Dendrobium Ainsworthii—a cross between D. nobile and D. heterocarpum.

—— The *Moniteur Horticole Belge* for the month treats of seedling Peaches, trained trees, and Celery blight. The remaining articles are extracted from other sources. The writer of the article on trained trees recommends for walls or *contre-espalier* of 7 to 8 feet and upwards forms with vertical branches; for walls of 6 to 7 feet, oblique cordons; for walls of 3 to 4 feet, the palmette with alternate branches.

—— The current number of the *Botanical Magazine* comprises coloured figures of Cucumis sativus var. sikkimensis, a curious variety of the common Cucumber, at one time supposed to be a hybrid between the Melon and the Cucumber. As we purpose giving a figure of this, we shall defer further notice of it. Other plates illustrate Nicotiana Tabacum var. fruticosa, Masdevallia Ephippium, Blandfordia flammea var. princeps, a grand form of a well-known plant, introduced from New South Wales by Mr. Bull, and Androsace sarmentosa, a curious little alpine, with heads of pink flowers, and long runners like a Strawberry. It was introduced by Mr. I. Anderson-Henry.

—— The *Revue de l'Horticulture Belge* comprises coloured figures of Chrysanthemums, together with a short notice of the history of the plant from the pen of M. Oswald de Kerchove. M. Joly contributes an article on the influence of electricity on plants, to which we may hereafter refer. M. Burvenich treats of hardy Ferns; M. Van Hulle of Ghent, Azaleas and their culture. Altogether the number is of unusual interest.

—— The *Florist and Pomologist* for the present month contains coloured figures of Hender's Petunias, and Paul's Imperial Crab, a very handsome Apple, said to be a cross between the Red Astrachan and the Siberian Crab. It is of good habit, the fruit ripens early, and is of good flavour, especially for preserving. It is in the hands of Mr. Laing, of the Twickenham Nurseries, and of Messrs. G. Paul & Son, of Cheshunt. The articles comprise a chapter on the culture of the Carnation and the Picotee by Mr. Dodwell, whose writings make us foresee a revived interest in florist flowers generally, which we shall gladly hail, though we trust that florist flower-lovers will adopt less narrow limitations than they sometimes do. Articles on Tulip culture and Auriculas confirm our impression. The remaining papers are of the usual varied and interesting character.

—— The *Gardener* for the present month treats of the application of manures, in the course of which we notice that the writer advocates what has been so often urged by ourselves—the establishment of a school of horticulture, where instruction in first principles might go hand in hand with initiation into practice, as in Belgium and other countries. Among other things the knowledge of what manures are suitable for particular plants, and under what circumstances, at what time, and in what doses they should be applied, is a question demanding much more exact knowledge than we have now. Long discussions ensue as to the mode of production of monster bunches of Grapes, and one correspondent, P. P., makes the rather startling assertion that the bunch is not produced from the current year's shoot, but from the joint. P. P.'s assertion is to us unintelligible, though it is true we have frequently seen bunches produced from the old wood. We cannot enumerate all the articles in this magazine, but must content ourselves with saying, in general terms, that they are, as usual, excellent practical articles.

—— The *Villa Gardener* for January is a wonderful sixpennyworth—filled to repletion with useful and agreeable articles. So numerous are they that we can hardly give a list of them—so good are they that we do not care to select one lest we should disparage the rest.

—— The number of the *Revue Horticole* for the 1st inst. contains a chromolithograph of Echium fastuosum, one of those grand Echiums which form such splendid objects in the garden of Mr. Hanbury at Mortola, but which would probably require protection in winter in this country. Those who have not seen them can have little idea of the superb beauty of these plants. M. Lemoine contributes an article on double Pelargoniums, which we shall probably lay under contribution at a future time. M. Carrière alludes to the curious crested forms of Echinocactus multiplex, adding significantly that the form in question never produces flowers, whereas the type flowers freely.

—— The last number of the re-issue of *Sowerby's British Wild Flowers* has now been published by Mr. Van Voorst. It comprises an appendix, including descriptions and figures of plants omitted in the original volume.

Reports of Societies.

Royal Society of Edinburgh: *Jan.* 3.—Professor Kelland in the chair. Dr. Stark contributed a paper "On the Defoliation of the Coniferæ," in which he gave the results of a personal investigation into the subject, showing how an inquiry of this nature, in so far as the genus Pinus was concerned, might materially help botanists in accurately ascertaining the analogies of the different species. He at the same time explained the cause of the tufted appearance which the leaves of many of the genus Pinus exhibit on their branches, and which has generally been attributed to a partial defoliation, from the circumstance that the lower portion of each internode was naked, while the leaves are confined to its

upper portion. It was shown that in all fruitful Pines, when the young shoots begin to elongate in spring, the lower or first-grown portion becomes covered with clusters of anthers, while the upper portion alone developes leaves, so that the terminal young shoots of every branch in spring present more or less the appearance of a Pine-apple. When the pollen is shed the anthers drop off, leaving naked all the lower portion of the stem to which they adhered, so that the foliage of the Pine presents a tufted appearance.

The peculiarities in the foliation and defoliation of the genera Pinus, Abies, Picea, Araucaria, Larix, and Cedrus were severally pointed out, and the reason explained why the Araucaria does not shed its leaves, like the other Coniferæ; and also why, on all the young shoots of the Larix and Cedrus, the leaves are solitary, and scattered regularly round the stems, whereas on all the older branches they are in clusters or fascicles.

The special interest of the paper, however, rested on the new facts brought to light with regard to six genera, viz., Thuja, Libocedrus, Wellingtonia, Sequoia, Cupressus, and Juniperus, all belonging to sub-order Cupressæ; and it was surmised that all the other genera belonging to the same sub-order would be found to exhibit the same peculiarities in their defoliation. It was shown that the species belonging to all these genera did not shed leaves but branches, and that they cast them off with a regularity as great as that of the ordinary deciduous and evergreen trees and shrubs. As these leaf branches, which are annually cast off, were shown to possess the double quality of leaves and of branches, it was proposed to distinguish them by the term of phylloclads. Numerous impressions taken on paper from the fallen leaf-branches or phylloclads of the above genera, as well as the leaf-branches themselves, were exhibited; and their botanical history was fully traced in the Thuja occidentalis or common Arbor-vitæ. It was shown that in the Arbor-vitæ these leaf-branches were developed from buds the first year into simple or compound branches. During the second year the tips of all the fruitful branches developed either into male catkins or more commonly into female cones. During the third year the terminal portion of every leaf-branch which had not flowered the previous year developed into male catkins, the remains of the previous year's female cones being often still adherent, and the leaf-branch was cast off from the tree in September or October, according to the season. As this process went on from year to year there was an annual defoliation, the third season branches being cast off. Hence the Arbor-vitæ stands during winter with only two seasons' growth of leaves or leaf-branches on it, while during spring and summer it has three seasons' growth on its branches.

As all the trees and shrubs belonging to the sub-order Cupressæ had not flowered with him, Dr. Stark stated that he had not been able to trace in all the period during which the phylloclads remained on the trees before being thrown off. From what he had been able to observe, he thought that the great majority were thrown off at the end of the third year, but he showed specimens of Sequoia which had undoubtedly been attached to the trees for five years before being cast off.

Experiments were described which proved that these leaf-branches, while possessing the deciduous character of leaves, also possessed those of true branches, inasmuch as they were capable of being made to strike root, and become converted into true branches and perfect trees or shrubs. It was also shown that the mechanism by which these phylloclads were thrown off was very similar to that by which leaves are thrown off from trees and shrubs—a slight modification being made to suit the altered circumstance of its being a branch, and not a simple leaf.

The paper was concluded by showing that the analogies of the vegetable kingdom would have led us to expect *à priori* that plants would be found throwing off branches instead of leaves, for that, in fact, the clusters and panicles of flowers in many, if not most of the trees and shrubs, were in reality mere metamorphosed branches, yet they dropped annually from the tree when the fruits or seeds were ripe.

The Villa Garden.

WHILE the hard frosty weather prevails any manure that is required for ground intended to be dug presently, and so prepared for spring crops, should be wheeled on to it. In all cases where there is a nice neat edging to the paths, whether of Box, tiles, or any other material, the wheel of the barrow should not be allowed to run over it, as is too frequently done. Either a kind of timber archway should be provided to span the garden edging, so that the wheel of the barrow can go over it without doing any injury, or the dung can be tilted down on the border next the path, and afterwards thrown over the ground to be dug. All wheeling should be done over garden paths either when the weather is dry and frosty, or dry in mild weather; wheeling on soddened paths does them much injury, cutting them up and spoiling their symmetrical appearance.

PROTECTION FROM FROST.—During frosty weather compost and rubbish heaps that it is intended to use for potting or manuring purposes should be turned over; the action of the frost is very beneficial, pulverising their contents and destroying insects that might be destructive by-and-bye. But while the effect of the frost is to be invited rather than retarded in these respects, its influence has to be guarded against in others, as in the cases of Potatos stored away for seed, Dahlia roots put away for the winter, Apples, and other things that might be affected injuriously.

PROTECTION TO COLD FRAMES.—The prevailing sharp frost is sorely trying the endurance of tender plants wintered in cold frames. Happily a few bright hours occasionally follow a frosty night, and then we open the lights and look over the plants to remove any signs of damp, and at the same time to give a little fresh air. All water is withheld, and the floor of the pit is kept as dry as possible, the ash bottom resting on the brick rubbish beneath keeps it free from moisture. By way of warding off the effects of the heavy frost we have made an additional covering of sheets of stout brown paper lined with newspapers. Securely fastened together, and bound round the edges, this makes a very warm and snug covering, and with care it will last all the winter. If it becomes damp it is laid over a fence during the day to dry.

In this frame such things as Pelargoniums, Lobelias, Calceolarias, a few Fuchsias, and other things, are yet untouched, and, on the whole, are as healthy as could well be desired. They are now kept quite dry at the roots, and if at any time one or two absolutely need water, it is carefully given, and the pot is lifted out of the frame and watered, and then returned when fully drained. It is remarkable how tender plants can be thus wintered with safety, when the frame is set down in a sheltered place on a dry bottom, and covered warmly during times of frost. It is just now very sharp at times, and according to the degree of its intensity there should be attention given to the precautions necessary to mitigate its effects.

THE CONSERVATORY.—Conservatories that have the advantage of a permanent heating apparatus will be in course of getting gay as the days lengthen: only get the month of January through and plant life becomes very active, especially if warm sunny days follow. Bulbs, such as Snowdrops, Crocuses, Scillas, Hyacinths, and Narcissi, that were potted up in October and early in November, and then put away under ashes, will be now pushing through the soil, and when brought into the conservatory where there is some artificial warmth they make rapid progress. The ashes should be carefully removed from the surface soil, and the pots should be cleansed from any dirt that had gathered on them during the course of the temporary interment; all should then be well watered and allowed to drain thoroughly before removal to the shelves of the conservatory. Lilies of the Valley, Astilbe (Spiræa) japonica, Solomon's Seal, Dielytra spectabilis, Hepaticas, &c., that have been potted up for summer blooming, are beginning to move, and are more or less advanced, according to the time they were potted. In all places where it can be arranged there is nothing like an ordinary brick frame or two, heated by means of a hot-water pipe passing along the front, to serve as feeders to the conservatory. It is by no means difficult to have a branch passing from the conservatory to the pit, and both worked by means of one fire. The plants can be kept near the glass, and well ventilated when required; and in such a frame Cinerarias, which are among the pleasantest of early spring-blooming plants, Primulas, Cyclamens, early-flowering Ericas of dwarf growth, small Azaleas, Deutzias, &c., can be passed on through the first stages of the forcing process, and a constant round of interest is put in motion. Only let the house and pits be properly constructed and situated, and the work of maintaining them efficiently is done at a comparatively moderate cost. This may be said to represent a higher level of Villa gardening than we are accustomed to treat of, but these heated structures can be made to serve such important purposes by those who take pleasure in the culture of flowers, that the wonder is the better order of Villa residences do not possess them much more than is actually the case.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, JAN. 12, 1876.

MONTH AND DAY.	BAROMETER. Mean Reading Reduced to 32° Fahr.	BAROMETER. Departure from Average of 15 Years	TEMPERATURE OF THE AIR. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point	Degree of Humidity: Sat = 100.	WIND. Average Direction.	RAIN 1.L.
Jan.	In.	In.	°	°	°	°	°	°			In.
0	30.25	+0.51	33.4	25.9	7.5	33.0	—6.4	25.9	83	ENE: E	0.00
7	30.01	+0.28	33.8	26.8	7.0	31.0	—5.4	26.6	82	NE: ENE	0.07
8	29.88	+0.14	27.3	21.9	5.4	24.7	—11.6	19.4	79	NE.	0.04
9	29.95	+0.22	33.1	23.8	9.3	29.5	—6.8	27.4	91	NNE: NNW	0.00
10	30.13	+0.41	34.2	28.9	5.3	31.6	—4.6	26.8	82	ENE: N.E.	0.00
11	30.03	+0.31	32.7	28.0	4.7	30.3	—6.0	25.7	85	N.: N.N.E.	0.00
12	30.00	+0.27	31.9	21.2	10.7	26.2	—10.1	20.3	77	N.E.	0.15
Mean	30.04	+0.31	32.3	25.2	7.1	29.0	—7.3	24.6	83	N.E.	sum 0.26

Jan. 6.—A dull cloudy day. Occasional slight snow. Hoar frost in early morning.
— 7.—Overcast, dull, cold, and snow fell throughout.
— 8.—A dull, very cold day. Snow fell till noon. Temp. at 9 A.M., 27°.3; it fell to 20 at noon, rose to 26°.2 at 1 P.M., was 22° at 6 P.M.; 22°.7 at 6.30 P.M., 22°.1 at 7 P.M., and remained at 22°.1 till 7.30 P.M., then fell to 21°.9 at 9 P.M.; rose to 23°.8 by midnight.
— 9.—Overcast, dull day. Cold. The temperature slowly increased to 30° at 9 A.M.; to 33 by 3 P.M., and remained at this reading till 7, and then decreased to 31°.6 by midnight.
— 10.—Overcast, dull and cold throughout.
— 11.—Fine till 10.30 A.M. Overcast afterwards. Snow fell at 7 A.M., and occasionally in afternoon, but very slightly.
— 12.—Fine and bright till 2 P.M. Overcast and dull after. Heavy snow fell from 5 to 7.30 P.M. Temp. at 9 A.M., 23°.3; 10 A.M., 25°.7; 11 A.M., 28°.8; noon, 30°.8; 0.30 P.M., 31°.0; 1 P.M., 31°; and remained at this reading until about 9 P.M., and descended to 29°.5 by midnight.

—— During the week ending Saturday, Jan. 8, in the vicinity of London the reading of the barometer at the level of the sea increased from 30.11 inches at the beginning of the week to 30.20 inche by the morning of the 2d, decreased to 30.03 inches by the evening of the same day, increased to 30.45 inches by the morning of the 6th, decreased to 30.03 inchesb y mid day on the 8th, and was 30.10 inches at the end of the week. The mean reading for the week was 30.24 inches, being 0.08 inch lower than that of the preceding week, and 0.30 inch above the average.

The highest temperatures of the air observed by day ranged from 54½° on the 3d to 27¼° on the 8th. The mean for the week was 41°. The lowest temperatures of the air observed by night varied between 22° on the 8th and 46° on the 3d, the general mean value being 31½°. The mean daily range of temperature in the week was 9½°, the greatest range in the day being 19½°, on the 2d, and the least, 5½°, on the 8th.

The mean daily temperatures of the air, and the departures from their respective averages, were as follows:—2d, 40°.5, +3°.6; 3d, 50°.8, +14°.1; 4h, 43°, +6.4; 5th, 33°.6, —2°.9; 6th, 30°, —6°.4; 7th, 31°, —5°.4; 8th, 24°.7, —11°.6. The mean temperature of air for the week was 36°.2, being 0°.3 below the average of sixty years' observations.

The highest reading of a thermometer with blackened bulb in vacuo, placed in sun's rays, was 63½° on the 5th. The lowest reading of a thermometer on grass with its bulb exposed to the sky was 14° on the 8th; the mean for the several low readings was 24½°.

The direction of the wind was variable and gentle in motion.

The weather during the week was dull, and the sky generally cloudy. The mean temperature for the 3d was no less than 14° above the average, that for the 8th was 11½° below the average, thus making a change of 25½° of mean daily temperature between these days.

Rain fell on four days, the amount collected was a quarter of an inch.

Snow fell on the 6th, 7th, and 8th.

In England the highest temperature of the air observed by day was at Truro, 56°, at Newcastle-on-Tyne the highest temperature in the week was 40°, the mean value from all stations was 52°. The lowest temperature of the air observed by night was 20° at Newcastle-on-Tyne, at Bradford and Leeds 31° was the lowest temperature, the general mean was 26°. The range of temperature in the week was the largest at about London and Cambridge, both 32½°, and the smallest at Hull, 20°, the mean range from all stations was 26°. The mean of the seven high day tempera-

tures was the greatest at Truro, 47°, and the least at Norwich and Hull, both 39½°, the general average value was 42°. The mean of the seven low night temperatures was the largest at Truro, 37¾°, and the smallest at Cambridge and Newcastle-on-Tyne, both 29¼°; the mean from all stations was 32½°. The mean daily range of temperature in the week was the greatest at Newcastle-on-Tyne, 14°, and the least at Hull and Sunderland, both 6¼°.

The mean temperature of the air for the week from all stations was 37°, being 4¾° lower than the value for the corresponding week in 1875. The highest occurred at Truro, 42¼°, and the lowest at Norwich, 34½°.

The amounts of rain measured during the week at the several stations varied from half an inch at Bristol and Cambridge to one-tenth of an inch at Sunderland and Wolverhampton. At Truro no rain was recorded. The average fall over the country was a quarter of an inch.

The weather during the week was dull, and the sky generally cloudy.

Fog prevailed at most stations on the 3d inst., and snow fell generally over the country on the 8th inst.

In Scotland, the highest temperatures of the air varied from 56° at Paisley to 47° at Dundee; the general average being 50⅝°. The lowest temperatures of the air ranged between 32¼° at Greenock and 24¼° at Leith; the mean value being 28¾°. The mean range of temperature in the week was 22°. The mean temperature of the air for the week from all stations was 40°, being ½° lower than the value for the corresponding week in 1875, and 3° above that of England. The highest was at Paisley, 41½°, and the lowest at Dundee and Aberdeen, both 39½°. Rain fell to the amount of 1 inch at Glasgow, at Leith one-tenth of an inch only was measured; the average fall over the country was half an inch.

At Dublin, the highest temperature in the week was 57°, the lowest 21¾, the range 35¼°; the mean 42¼; and the fall of rain 0.09 inch.

JAMES GLAISHER.

Enquiries.

He that questioneth much shall learn much.—BACON.

91. OUVIRANDRA.—*Brassica* asks if any of our correspondents can give any information on the culture of the Lace Plant (Ouvirandra fenestralis)?—a plant which, he says, we seldom see doing well. Some of our readers who have succeeded in its cultivation will, no douht, give him the desired information. Abundant heat and pure water seem to be the chief requisites.

92. STRAWBERRY VINE.—I should like to know the origin of the Strawberry Vine—when and where it was raised, and any other information concerning it. *C. C.* [It is of American origin, and one of the parents of Mr. Pearson's Ferdinand de Lesseps. EDS.]

Answers to Correspondents.

BOILERS: *W. W. C.* Any of the leading London firms, we believe. It is too late for entries for the American Exhibition.

DISEASED CUCUMBERS: *J. D. E.* It does not appear that you have got the Cucumber disease. The plant has evidently been in an unsatisfactory state for some time. The leaves are patchy from a want of proper development of chlorophyll. Something was wrong at the very base of the stem, and in consequence decay took place, and of course the upper parts perished as soon as the decay was complete. A similar circumstance often takes place in the common cultivation of Cucumbers, and it is often very difficult to say what is the cause, as one plant does, while two others, in the same frame, under exactly the same circumstances of cultivation, perish. *M. J. B.*

DRESSING CARNATIONS AND PICOTEES: We have received a communication on this subject from "D., Deal," but are unable to find room for it this week.

HEATING GREENHOUSE: *J. Calder.* Hot-water pipes heated by gas.

MANETTI STOCKS: *J. R. H.* The statement made by a correspondent that these stocks can be obtained at from 5*s.* per thousand, is, of course, a mistake,—hundreds, and not thousands, being meant. The general price for best quality is about 8*s.* per hundred. Any of the large Rose growers can supply you.

NAMES OF FRUITS: *C. B.* Your Pear is Glou Morçeau.—*T. Phillpots, Truro.* Your Apple is Cox's Orange Pippin. It is simply the best dessert Apple in cultivation.—*Wm. Holmes.* Apple not known.—*E. Morgan.* 1, Passe Colmar; 2, Glou Morçeau; 3, Duchesse d'Angoulême; 4, Beurré Diel; 5, rotten.—*A. Boyle. Pear:* Verulam, or Buchanan's Spring Beurré. Please send the Pear named Chaumontelle again next season. *W. Farr.* 6, Hoary Morning; 2, 4, 7, quite rotten; the other two so much bruised as to be unrecognisable.

NAMES OF PLANTS: *A Subscriber.* Phillyrea latifolia.—*J. L. P. P.* Calanthe vestita.—*F. W. G.* 1, Epidendrum lancifolium; 2, Peristrophe speciosa; 3, Echeveria fulgens; 4, indeterminable without flowers; 5, Polypodium scandens.—*H. S.* Petteria Willdeni.—*H. G. S.* Probably Eugenia Munroii. The specimen sent was very bad, and "H. G. S." should remember that there are 500 species of Eugenia.

PERSIAN DATES: *A. J. M.* There are almost as many varieties of Dates as of Apples, and we cannot pretend to identify any one of them from a solitary fruit.

PORTER'S EXCELSIOR POTATO: *William Barron.* If you had written plainly, we should not have had to put a query after the word Mains at p. 20. Even now we are not quite certain whether you mean Wany or Udney, and it is not of much consequence which is right.

ROYAL HORTICULTURAL SOCIETY: *S. W. and others* asks when the schedule of this Society is likely to appear. We cannot enlighten them.

WELLINGTONIA GIGANTEA: In the paragraph at p. 54, for 53 feet read, in both cases, 52. *D. C. Powell.*

WHAT IS AN AMATEUR? *E. M.* Your letter was mislaid, and hence the delay in answering it. The only general rule we know of relating to the above question is this, that "an amateur is a person not employing a professional gardener." This is not very definite, but is generally understood to include those who themselves perform the chief cultural operations, though they may have occasional assistance to get through the rough routine work. Of the three you mention Nos. 1 and 2 are certainly amateurs; No. 3 is more doubtful, but as he is defined as doing "none of the work himself," we should exclude him, for in his case all the work is obviously done by a professed gardener.

☞ FOREIGN SUBSCRIBERS sending Post Office Orders, and which are to be paid at the post-office, King Street, Covent Garden, London, are requested to be good enough to write to the Publisher, at the office of this paper, 41, Wellington Street, Covent Garden, at the same time, to inform him of the fact.

ERRATUM.—In article on the Culture of the Morel, p. 43, Jan. 8, col. *c*, third line from top, for "preparing" read "preferring."

CATALOGUES RECEIVED.—Messrs. C. Sharpe & Co. (Sleaford, Lincolnshire), General Illustrated Price Current of Garden, Flower, and Farm Seeds, &c.—M. Martin Grashoff (Quedinburg, Germany, Prussia), List of Vegetable and Flower Seeds, &c.—J. Sreckmann (Bad Kötritz, Austria), Catalogue of Roses, Gladiolus, &c.—The Pine-apple Nursery Company (Maida Vale, Edgware Road, London), Illustrated Catalogue of Kitchen Garden, Farm, and Flower Seeds, Bulbs, Tools, &c.—Mr. B. S. Williams (Victoria and Paradise Nurseries, Upper Holloway, London), Descriptive Catalogue of Flower, Vegetable, Agricultural Seeds, &c.—The Lawson Seed and Nursery Company (1, George IV. Bridge, Edinburgh, and 54, Bishopsgate Street Within, London), Catalogue of Garden Seeds, &c.—Messrs. Daniels Brothers (Norwich), Illustrated Guide and General Seed Catalogue for 1876.—Louis Van Houtte (Royal Nurseries, Ghent, Belgium), Catalogue of Gesneraceous Plants, Roses, Begonias, &c.—Messrs. Drummond Brothers (52, George Street, Edinburgh), Catalogue of Vegetable and Flower Seeds, and French Hybrid Gladioli.—Mr. W. Rumsey (Joyning's Nurseries, Waltham Cross), Catalogue of Select Garden Flower and Farm Seeds, Potatos, &c.—Mr. J. W. Mackey (40, Westmoreland Street, Dublin), Annual Descriptive Seed Catalogue, and Amateur's Guide.—Mr. A. Legerton 5, Aldgate, London), Special Trade Catalogue of Garden, Agricultural, and Flower Seeds.

COMMUNICATIONS RECEIVED: K. K. (many thanks).—T. W., Windsor.—Old Subscriber.—E. S. D.—W. G. S.—J. C.—G. Warren.—J. R. J.—O. L.—D. R. & Co. (next week).—H. G. R.—G. L.—T. S. J.—J. M.—J. D.—B. M.—D. P.—G. D.

*** IMPORTANT NOTICE.—*The* AGRICULTURAL GAZETTE *is now* PUBLISHED *on* MONDAYS, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, January 13.

We have no alterations to quote this week. *Jas. Webber, Wholesale Apple Market.*

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per doz.	42	0-60	Hyacinths, per doz.	12	0-18
Begonias, per doz.	6	0-12	Hyacinths, Rom., do.	12	0-30
Bouvardias, do.	12	0-18	Mignonette, do.	6	0-9
Cyclamen, do.	12	0-24	Myrtles, do.	3	0-9
Cyperus, do.	6	0-12	Pelargoniums, scarlet, per doz.	6	0-9
Dracæna terminalis	30	0-60	Poinsettias, per doz.	15	0-24
— viridis, per doz.	18	0-24	Primula sinensis, do.	6	0-12
Epiphyllums, do.	18	0-42	Solanums, do.	6	0-24
Euphorbia jacquiniifolia, per doz.	9	0-18	Tulips, do.	9	0-18
Ficus elastica	2	6-15	Veronica, do.	4	0-12
Heaths, in var., doz.	12	0-30			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Azaleas, 12 sprays	1	6-3	Pelargoniums, 12 spr.	2	0-4
Camellias	4	0-12	— Zonal do.	1	6-3
Carnations, 12 blooms	2	0-4	Poinsettia, per doz.	4	0-12
Cyclamen, 12 blooms	0	3-6	Primula, dbl., p. bun.	1	0-1
Epiphyllum, p. doz.	1	0-3	Roman Hyacinths, 12 sprays	3	0-6
Eucharis, per doz.	6	0-18	Roses, indoor, p. doz.	3	0-9
Euphorbia, 12 spr.	4	0-9	Spiræa, 12 sprays	2	0-4
Gardenia, per doz.	12	0-18	Stephanotis, 12 sprays	9	0-18
Heliotropes, 12 spr.	0	6-1	Tuberoses, per doz.	4	0-9
Mignonette, 12 bun.	6	0-9	Violets, 12 bunches	3	0-6
Narcissus, per dozen	3	0-6			

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1	0-2	Melons, each	2	0-4
Cobs and Filbts., lb.	0	6-0	Oranges, per 100	6	0-12
Grapes, per lb	1	6-6	Pears, per doz.	1	6-6
Lemons, per 100	6	0-10	Pine-apples, p. lb.	2	0-5

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz.	8	0-	Lettuces, per score	2	0-
— Jerusalem, p. lb.	0	3-	Mint, green, bunch	1	6-
Asparagus (English), per bundle	8	0-10	Mushrooms, per pott.	1	0-2
Beans, French, p. 100	2	0-3	Onions, young, bun.	0	4-6
Beet, per doz.	1	0-2	Parsley, per bunch	0	4-
Brussels Sprouts, lb.	0	4-	Peas, green, per lb.	1	6-
Cabbages, per doz.	1	0-2	Potatos (new), baskt.	1	0-
Carrots, per bunch	0	6-	— Sweet, per lb.	0	6-
Cauliflowers, p. doz.	2	0-4	Radishes, per bunch.	0	2-4
Celery, per bundle	1	6-2	— Spanish, doz.	1	0-
Cucumbers, each	2	0-3	— French	0	6-
Endive, per doz.	1	0-2	Rhubarb, per bundle	1	3-1
— Batavian, p. doz.	2	0-3	Salsafy, per bundle	0	9-
Herbs, per bunch	0	2-4	Seakale, per punnet	1	0-2
Horse Radish, p. bun.	3	0-5	Shallots, per lb.	0	3-
Leeks, per bunch	0	2-4	Tomatos, per doz.	1	0-2
			Turnips, per bundle	0	4-

Potatos—Rocks, £5; Regents, £7 to £8; Kidneys, £7 to £8 per ton.

SEEDS.

LONDON: *Jan.* 13.—Increased activity now characterises the trade for farm seeds generally, and with regard to Clovers and Trefoils in especial considerable quantities are changing hands at full rates. For red seed higher quotations come to hand from both France and Germany, whilst the advices received this day by cable from Chicago and New York forbid the expectation of any heavy shipments this season of American seed. This, combined with the continued paucity of home-grown samples, encourages holders to anticipate a still further advance in values. Trefoil seed, under the influence of a very strong demand, has advanced on the week £2 to £3 per ton. In Alsike and White Clover there is no noteworthy change, fine qualities of both descriptions being extremely scarce. For Sainfoin 2*s.* per quarter more money is asked. There is a brisk inquiry for foreign Italian at increased rates. Canary seed moves off slowly on former terms. Its high price, as might be expected, tends to restrict consumption. Linseed keeps steady. For blue boiling Peas the trade is quiet. Good black Rape seed is rather dearer. In white and brown Mustard the business passing continues very limited. *John Shaw & Sons, Seed Merchants*, 37, *Mark Lane, E.C.*

CATTLE.

At Copenhagen Fields on Monday trade in beasts was not brisk, and prices generally were rather lower than on the previous Monday, yet there was a good demand for choicest. The supply of sheep was much larger than last week, and there was a consequent decline in price; choicest qualities, however, were pretty readily disposed of. Choice calves were scarce and dear. Quotations:—Beasts, 4*s.* 6*d.* to 5*s.* 6*d.*, and 5*s.* 10*d.* to 6*s.* 4*d.*; calves, 5*s.* 4*d.* to 7*s.*; sheep, 5*s.* 8*d.* to 6*s.* 4*d.*, and 6*s.* 10*d.* to 7*s.* 6*d.*; pigs, 4*s.* 8*d.* to 6*s.*—In the beast market on Thursday trade ruled dull, at Monday's currency. Sheep met a very dull sale, transactions being difficult to close even at a fall of 2*d.* per stone. Trade in calves was brisk, prime sorts fetching high rates.

HAY.

At the Whitechapel market on Tuesday supplies were pretty full, and for best qualities of Clover and meadow hay there was a fair demand, but middling and inferior sorts hung on hand. Quotations:—Clover, best, 120*s.* to 150*s.*; inferior, 80*s.* to 90*s.*; hay, best, 115*s.* to 140*s.*; inferior, 60*s.* to 80*s.*; and straw, 36*s.* to 48*s.* per load.—Trade on Thursday was rather quiet at, for Clover, best, 120*s.* to 150*s.*; inferior, 80*s.* to 90*s.*; hay, best, 115*s.* to 140*s.*; inferior, 60*s.* to 80*s.*; and for straw, 36*s.* to 48*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 130*s.* to 140*s.*; inferior, 90*s.* to 115*s.*; superior Clover, 140*s.* to 150*s.*; inferior, 105*s.* to 126*s.*; and straw, 48*s.* to 52*s.* per load.

POTATOS.

The Borough and Spitalfields markets reports for Monday stated that the arrivals of Potatos were in excess of requirements, and only the better descriptions commanded full rates. Kent Regents sold at 110*s.* to 140*s.*; Essex do., 100*s.* to 135*s.*; Victorias, 120*s.* to 160*s.*; flukes, 130*s.* to 170*s.*; kidneys, 100*s.* to 120*s.*; and rocks at 65*s.* to 95*s.*—Tuesday's report was to the effect that trade was steady, with diminished supplies of foreign, and prices tending upwards. Quotations:—English Regents, best, 160*s.* to 180*s.*; seconds, 120*s.* to 140*s.*; French ware, 80*s.* to 90*s.* per ton; Dutch rocks, 4*s.* to 4*s.* 6*d.*, and Belgian kidneys, 5*s.* to 6*s.* per bag.—Only moderate supplies were to hand on Thursday, and Tuesday's prices were upheld.—Last week's imports into London were made up of 2446 tons, 1439 sacks, and 13,729 bags.

COALS.

There was a brisk demand for house coals at market on Monday, and the price further advanced 6*d.* per ton. Wednesday's market was steady, at Monday's prices, with the exception of "seconds," which were in some cases slightly higher. Quotations:—Bebside West Hartley, 19*s.* 3*d.*; West Hartley, 19*s.* 3*d.*; Walls Ends—Hetton, 25*s.* 6*d.*; Hetton Lyons, 23*s.* 9*d.*; Lambton, 25*s.*; Chilton, 25*s.*; Kelloe, 24*s.*; East Hartlepool, 25*s.* 3*d.*; Original Hartlepool, 25*s.* 6*d.*; Tees, 25*s.* 3*d.*

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H. LEE, Florist and Landscape Gardener, Peel Causeway, Altrincham, Cheshire

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GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.

Sold Retail by Seedsmen, in boxes, 1*s.*, 2*s.*, and 10*s.* 6*d.* Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

BEST TOBACCO PAPER, CLOTH, and CORD.

Wholesale and Retail Price (low) on application to J. GEORGE, Putney Heath, London, S.W.

ARCHANGEL MATS.—15,000, bright colour, ex "Aristocrat;" best parcel this season. Prices, &c., on application to

WILLIAM PETERS, 44, Tenter Street South, and Warehouses, Well Street, London Docks, E.

Russia Mat Merchants.

MARENDAZ AND FISHER, Importers and Manufacturers, 9, James Street, Covent Garden, have an immense stock of MATS for Covering, Tying, Packing, and Shading Purposes. Low Terms to very large Buyers.

ROFFIA FIBRE sold Wholesale only.

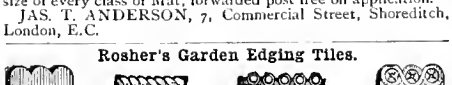
RUSSIA MATS.—A large stock of Archangel and Petersburg, for Covering and Packing. Second sized Archangel, 100*s.*; Petersburg, 60*s.* and 80*s.*; superior close Mat. 45*s.*, 50*s.*, and 55*s.*; packing Mats, 20*s.*, 30*s.*, and 35*s.* per 100; and every other description of Mat at equally low prices, at

J. BLACKBURN AND SONS, Russia Mat and Sack Warehouse, 4 and 5, Wormwood Street, E.C.

RUSSIA MATS, for Covering Garden Frames.—ANDERSON'S TAGANROG MATS are the cheapest and most durable. Price List, which gives the size of every class of Mat, forwarded post free on application.

JAS. T. ANDERSON, 7, Commercial Street, Shoreditch, London, E.C.

Rosher's Garden Edging Tiles.



THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.

GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.

F. ROSHER AND CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; Kingsland Road, E.

Agents for LOOKER'S PATENT "ACME FRAMES," PLANT COVERS and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.

Illustrated Price Lists free by post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheets, of plain or more elaborate designs, with prices, sent for selection

WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds, Roofing Tiles in great variety, Slates, Cements, &c.

F. ROSHER AND CO., Brick and Tile Merchants.

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SILVER SAND, fine or coarse grain as desired. Prices by Post per Ton or Truck Load, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.

FLINTS and BRICK BURRS for Rockeries or Ferneries.

KENT PEATS or LOAM supplied at lowest rates in any quantities.

F. ROSHER AND CO.—Addresses see above.

N.B.—Orders promptly executed by Rail or to Wharves.

A liberal Discount to the Trade.

Oil Paint No Longer Necessary.

HILL AND SMITH'S BLACK VARNISH for Preserving Ironwork, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.

Glangwilly, Llanpumpsant, Carmarthen, Nov. 27, 1873.—"Mr. Lloyd Lloyd encloses cheque for £3 5*s.*, amount due to Messrs. HILL & SMITH, and he considers the Black Varnish one of the most useful things he ever possessed."

Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley; and 118, Queen Victoria Street, London, E.C., from whom only it can be obtained.

CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would specially draw attention to the fact that every cask of their Varnish is legibly marked with their name and address, without which none is genuine.

PRUSSIAN WOOD GARDEN STICKS and TALLIES, commended by the Royal Horticultural Society. The above can be had, of all sizes, wholesale, of

CHARLES J. BLACKITH AND CO.,

Cox's Quay, Lower Thames Street, London, E.C.

Retail of the principal Seedsmen. Prices on application.

Indestructible Terra-Cotta Plant Markers.

MAW AND CO.'S PATENT.—Prices, Printed Patterns, and Specimens, sent post free on application; also Patterns of Ornamental Tile Pavements for Conservatories, Entrance Halls, &c.

MAW AND CO., Benthall Works, Broseley.

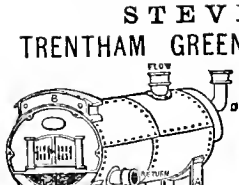
Labels—Secure Tree and Plant Labels.

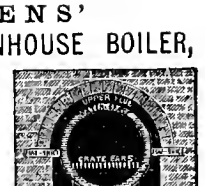
PARCHMENT or CLOTH LABELS, TREE or PLANT LABELS. Punched Parchment, 4 inches long, 3*s.* 6*d.* per 1000, or 30*s.* per 10,000; if eyeleted, 4*s.* per 1000. Vellum Cartridge, 4 inches long, 3*s.* per 1000 for 10,000. Sample Labels sent on receipt of postage stamp. Orders delivered free in London.

JOHN FISHER AND CO., Label Works, Boston.

STEVENS'

TRENTHAM GREENHOUSE BOILER,





After long experience, has proved the most SIMPLE, ECONOMICAL, EFFECTUAL, and LASTING BOILER extant; recently much improved. For Illustrations, with full particulars, apply to the Sole Makers,

F. & J. SILVESTER,

Castle Hill Foundry, Engineering and Boiler Works, Newcastle, Staffordshire.

☞ Our Boilers are the ONLY ones made with the sanction and under the inspection of the inventor, Mr. Stevens—all others being base imitations

ESTABLISHED 1856.

KEEP OUT THE FROST.

WILLIAM H. HONEY'S PORTABLE

VAPORISING STOVES,

To Burn Kerosene or any Mineral Oil.

They will burn for twenty-four hours at a cost of one penny for three hours.

They require no attention beyond replenishing the Oil.

Suitable for Greenhouses, Conservatories, Halls, Bed-rooms, &c.

They will not injure the most tender Exotics, nor are they in any way injurious to the health.

Prices, in block tin, 30*s.*; in copper, 50*s.* Copper, with glass, to give light and heat, 55*s.* Either will be sent on receipt of Post-office Order.

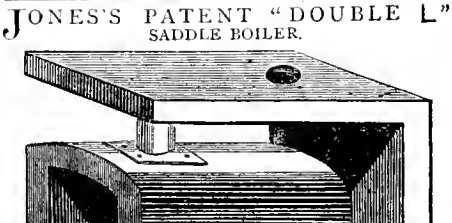
To be seen in operation at

WILLIAM H. HONEY,

263, REGENT STREET, W.

Catalogue free. No agents appointed.

JONES'S PATENT "DOUBLE L" SADDLE BOILER.



These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements—viz., the water space at back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel; the cost of setting is also considerably reduced, and likewise the space occupied; at the same time these Boilers are simple in construction, and being made of wrought iron are not liable to crack. They are made of the following sizes:—

Sizes.			To heat of 4-in. Pipe.	Price.
High.	Wide.	Long.	Feet.	£ s. d.
20 in.	18 in.	18 in.	300	7 0 0
20 ,,	18 ,,	24 ,,	400	8 0 0
20 ,,	18 ,,	30 ,,	500	9 0 0
24 ,,	24 ,,	24 ,,	700	12 0 0
24 ,,	24 ,,	30 ,,	850	14 0 0
24 ,,	24 ,,	36 ,,	1,000	16 0 0
24 ,,	24 ,,	48 ,,	1,400	20 0 0
28 ,,	28 ,,	60 ,,	1,800	25 0 0

Larger sizes if required.

From Mr. CHARLES YOUNG, *Nurseries, Balham Hill, S.W., May* 29, 1873.

"Having given your Patent 'Double L' Boilers a fair trial at my Nurseries, I beg to say that they are most satisfactory. I consider them the best in use, and without doubt the most economical of all boilers; they will burn the refuse of other tubular boilers I have in work."

PRICE LISTS of HOT-WATER PIPES and CONNECTIONS, with Boilers, of all sizes and shapes; or ESTIMATES for HOT-WATER APPARATUS, erected complete, will be sent on application.

J. JONES AND SONS, Iron Merchants, 6, Bankside, Southwark, London, S.E.

When ordering Boilers please refer to the above advertisement.

JOSEPH HAYWOOD & CO.,

MANUFACTURERS OF

CELEBRATED PRUNING AND

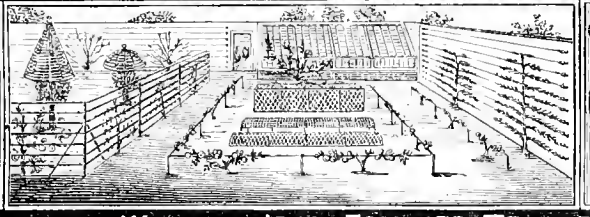
WARRANTED BUDDING KNIVES,

VINE SCISSORS, ETC.

GLAMORGAN WORKS, SHEFFIELD.

BARNARD, BISHOP & BARNARD'S
NORFOLK IRON WORKS, NORWICH.

WATER BARROWS.



GARDEN ROLLERS.

GALVANIZED WROUGHT IRON ESPALIER TRAINERS.
ON THE FRENCH SYSTEM.
ILLUSTRATED PRICE LISTS FREE ON APPLICATION.
ALL ORDERS EXECUTED FROM STOCK ON RECEIPT.

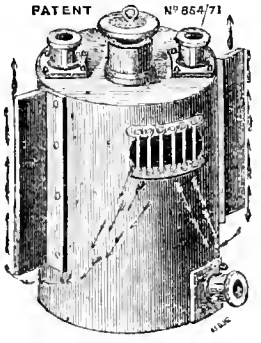
THE THAMES BANK IRON COMPANY

(Successors to LYNCH WHITE),

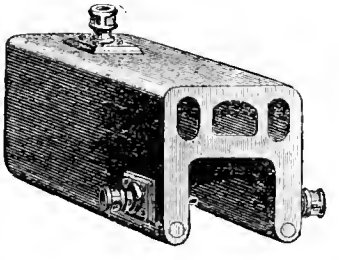
Old Barge Wharf, Upper Ground Street, London,

SURREY SIDE, BLACKFRIARS BRIDGE.

HOT-WATER BOILERS, PIPES, CONNECTIONS.



("EXCELSIOR" BOILER.)



("GOLD MEDAL" BOILER.)

NEW PATENT "CLIMAX" BOILER (1874). See p. 666, 1874, *Gardeners' Chronicle.*

"GOLD MEDAL" BOILER (Birmingham, 1872).

PATENT "EXCELSIOR" BOILER (1871).

☞ *The largest and most complete Stock in the Trade; upwards of Twenty Thousand Pounds' worth to choose from.*

"WITLEY COURT" BOILER (Silver Medal 1872).

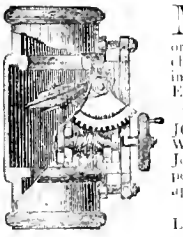
"TRENTHAM IMPROVED" BOILER, with Waterway End and Smoke Consumer.

"TUBULAR," and every other Boiler of known merit or excellence.

☞ *Prize Medal Awarded at the National Contest, Birmingham, 1874.*

HOT-WATER APPARATUS ERECTED COMPLETE.

PRICE LIST on application; or, Six Stamps for DESCRIPTIVE CATALOGUE, 4th Edition.



MESSENGER'S PATENT VALVES for Hot or Cold Water, Gas, &c., are the cheapest perfect Valve made. They are in general use throughout Scotland, England and Abroad.

MESSENGER'S Patent ELASTIC JOINTED PIPES, for Hot or Cold Water are the cheapest Portable-Jointed Pipes made, and the most perfect. Illustrated Price List free on application to

T. C. MESSENGER, Loughborough.

AGRICULTURAL LOCOMOTIVES,

STEAM PLOUGHING MACHINERY,

ROAD LOCOMOTIVES, TRAMWAY LOCOMOTIVES, STEAM ROAD ROLLERS.

For Prices, Description, and Reports of Working, apply to the Manufacturers,

AVELING & PORTER,

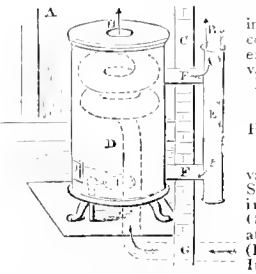
ROCHESTER, KENT; 72, CANNON ST., LONDON, E.C.; and 9, AVENUE MONTAIGNE, PARIS.

AVELING & PORTER'S ENGINES have gained the highest Prizes at every important International Exhibition. The Two Medals for Progress and Merit were awarded them at Vienna for their STEAM ROLLERS and ROAD LOCOMOTIVES; and at the last trials of the Royal Agricultural Society of England their AGRICULTURAL LOCOMOTIVES gained the First Prize after exhaustive trials, when one of their 10-horse power Engines, fitted with single slide and ordinary link-motion, indicated 35-horse power with a consumption of *three and one-fifth pounds of coal* per horse-power per hour.

GEORGE'S PATENT CALORIGEN,

FOR

Warming and Ventilating Small Conservatories.



The only Gas Stove in which the product of combustion is entirely excluded from the Conservatory.

Made in Wrought Iron, £3 3s.

Made in Copper, £5.

Height, 28 inches; diameter, 14 inches.

It will be found very valuable in the Nursery or Sick Room, Damp Buildings, Conservatories, Offices, &c. Exhibited at the Exhibition of 1871 (Department of Scientific Inventions).

Illustrated Prospectuses and Testimonials on application.

J. F. FARWIG AND CO., 36, Queen Street, Cheapside, E.C.

This Stove introduces a strong current of warmed (not burnt) fresh air.

Under the Patronage of the Queen.

J. SMITH'S IMPERISHABLE STRATFORD LABELS.

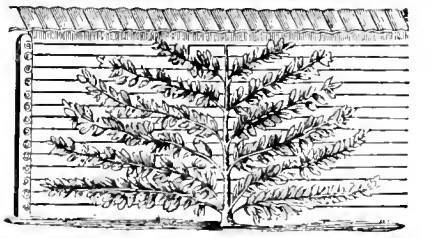
The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.

The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."

Samples and Price List free.

Sole Manufacturer: J. SMITH, The Royal Label Factory, Stratford-on-Avon.

Garden Wall Wiring.



R. HOLLIDAY, PRACTICAL WIREWORKER, 2A, Portobello Terrace, Notting Hill Gate, London, W., begs to call the attention of all Gardeners who are about to have their Garden Walls Wired to his system of Wiring Walls, as being superior to all others for neatness, strength, and durability

For Neatness,—Because all the Wires are kept perfectly tight, without the use of the Raidisseur.

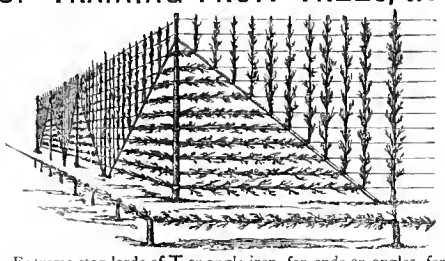
For Strength,—Because very much stronger Wire can be used, therefore not liable to be drawn out of the horizontal line by the branches of trees.

For Durability,—Because, being able to use the strong Wire, it is not so likely to be eaten through with the galvanism as the thin Wire, as used in the French system.

The above Engraving is an Example of our system of Wiring Garden Walls. We have recently completed the Wiring of the New Garden Walls for the Marquis of Salisbury, Hatfield House. The Walls are 12 feet high and 753 yards long, wired on both sides; making a total length of 1506 yards,—our system being chosen in preference to any other.

Illustrated Catalogues of Garden and Conservatory Wirework, Rabbit Proof Hurdle Fencing, &c., may be had on application as above.

THE FRENCH SYSTEM OF TRAINING FRUIT TREES, &c.



EXTREME standards of T or angle iron, for ends or angles, for straining the wires from, self based; also stays for these standards, at prices as under :—

Intermediate Standards, 10 ft. apart, at half these prices.

	Painted.	Galvd.		Painted.	Galvd.
5 ft. high....	6s. 0d. ..	8s. 6d.	8 ft. high....	9s. 0d.	12s. 0d.
6 ft. high....	6 9 ..	9 6	9 ft. high....	10 0 ..	13 0
7 ft. high....	8 0 ..	11 0	10 ft. high....	12 0 ..	15 0

RAIDISSEURS, for Tightening Wires, one to each wire, 2s. 6d. doz. Key for tightening, 4d. each.
SCREWS and NUTS, neater than Raidisseurs, 3s. 6d. per doz.
No. 13 WIRE, 10 inches apart, 2s. 6d. per 100 yards.

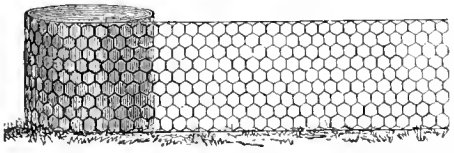
MESSRS. J. B. BROWN & CO.,
90, CANNON STREET, LONDON, E.C.

VIENNA PRIZE WIRE NETTING.

THE MEDAL FOR MERIT

At the Vienna Universal Exhibition, 1873,

Was awarded to Messrs. J. B. Brown & Co., for "excellence and perfection in material and workmanship, large extent of production, and cheapness of produce."



Prices per Lineal Yard, 24 inches high :—

Size of Mesh.	Mostly used for	Gauge.	Or Light Quality.	Gauge.	Or Medium Quality.	Gauge.	Or Strong Quality.
2 in.	Dogs or Poultry .	19	3⅜d.	18	4½d.	17	5⅜d.
1⅝ in.	SmallRabbits, &c.	19	4¼d.	18	5¼d.	17	6¼d.
1½ in.	Smallest Rabbits	19	5¼d.	18	6¼d.	17	8d.
¾ in.	Poultry, &c. ..	20	1s. 1½d	19	1s. 4d.	18	1s. 7d.
¼ in.	Aviaries, &c. ..	22	1s. 10d	20	2s. 0d.	19	2s. 3d.

*** Circulars with prices and further particulars of Wire Netting, also of Iron Fencing, Espalier and other materials for Wiring Garden Walls for Fruit Trees on the French System, on application.

Messrs. J. B. BROWN & CO.,
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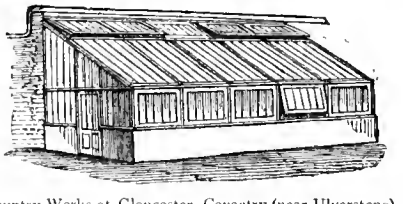
HORTICULTURAL BUILDINGS

OF EVERY DESCRIPTION

Designed, Built, and efficiently Ventilated and Heated.

Estimates given to Architects' Plans and Specifications, or to Rough Sketches, with particulars of size, form, and style of Building required.



Country Works at Gloucester, Coventry (near Ulverstone), Paisley, and Aberdeen only.

HOTHOUSES FOR THE MILLION

Are the simplest and cheapest, being easily fixed, and removed again, if required, by any local carpenter.

A Pamphlet with Illustrations, Testimonials, &c., and Price Lists of Sir J. Paxton's Hothouses, for 3d. post free.

A Handbook of Vine and Fruit Tree Cultivation.
New edition. Post free, 13d.

HEREMAN AND MORTON,
HORTICULTURAL ENGINEERS,
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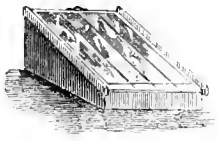
GARDEN FRAMES AND LIGHTS.

A large assortment. Various sizes in stock.



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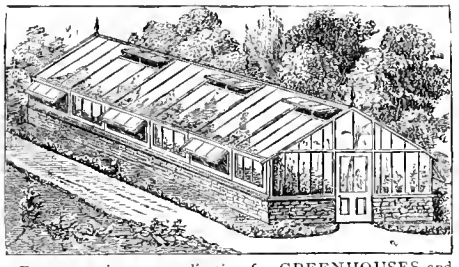
W. RICHARDSON AND CO.,
HORTICULTURAL BUILDERS AND HOT-WATER ENGINEERS,
DARLINGTON.

W. H. LASCELLES, HORTICULTURAL

BUILDER, Finsbury Steam Joinery Works,
121, Bunhill Row, London, E.C.



Estimates given on application for GREENHOUSES and CONSERVATORIES of all kinds, and to any design.

BELGIAN GLASS for GREENHOUSES, &c.,

Can be obtained in all sizes and qualities, of

BETHAM & SON,

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B. & S. have always a large Stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., in 16 oz. and 21-oz.

E. T. ARCHER'S "FRIGI DOMO."—

Patronised by Her Majesty the Queen for Windsor Castle and Frogmore Gardens, the late Sir Joseph Paxton, and the late Professor Lindley, &c.

MADE of PREPARED HAIR and WOOL.

A perfect non-conductor of heat or cold, keeping a fixed temperature where it is applied. A good covering for Pits and Forcing Frames.

PROTECTION from COLD WINDS and MORNING FROSTS.

"FRIGI DOMO" NETTING, 2 yards wide, 1s. 4d. and 1s. 10d. per yard.

"FRIGI DOMO" CANVAS.

2 yards wide .. .. 1s. 10d. per yard run.
3 yards wide .. .. 3s. per yard.
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ELISHA T. ARCHER, only Maker of "Frigi Domo," Stanstead and Brockley Roads, Forest Hill, London, S.E.; and of all Florists and Seedsmen. All goods carriage paid to London.
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and CULTIVATOR may be SEEN at WORK in every Agricultural County in England.

For particulars apply to JOHN FOWLER AND CO., 71, Cornhill, London, E.C.; and Steam Plough Works, Leeds.

PATENT PORTABLE SMOKELESS STOVES and PATENT FUEL.

For Heating Conservatories, Greenhouses, Halls, Passages, and places with Chimneys, from 12s. 6d.

NASH'S BRONCHITIS KETTLE, 10s. 6d.

Prospectus free.

SWAN NASH, 253, Oxford Street, W.; and 4, Newgate Street, E.C.

JOHN MATTHEWS, The Royal Pottery,

Weston-super-Mare, Manufacturer of TERRA-COTTA VASES, FOUNTAINS, ITALIAN BASKETS, BORDER TILES, GARDEN POTS, of superior quality, from 1 to 30 inches diameter, stand the first, and seldom turn green. ORCHID, FERN, SEED, and STRIKING PANS, RHUBARB and SEAKALE POTS, &c. Price Lists Post Free.

Sheet of Designs, 6d. Book of Designs, 1s.

By Her Majesty's Royal Letters Patent.

PORTABLE HOT-WATER CIRCULATING BOILER,

THE BEST AND CHEAPEST EVER OFFERED TO THE PUBLIC.

To Burn Petroleum Oil, or, when required, may be Heated by Gas.

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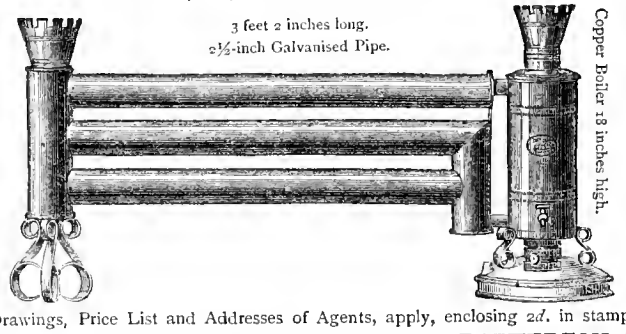

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GARDENER (JOURNEYMAN, under glass).—Age 21; worked under glass last four years. Good reference.—Address, stating if Bothy found, W. WEATHERLY, Camden House Gardens, Chislehurst, Kent.

JOURNEYMAN.—Age 23; accustomed to Forcing Vines, Pines, Cucumbers, Melons, &c. Six and a half years' good character from last situation.—G. E., Norton, near Daventry, Northamptonshire.

PROPAGATOR, or under a Foreman.—Young man; seven years' experience.—E. E., Post Office, Chester.

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TO NURSERYMEN.—Wanted to place a YOUTH, eighteen years old, who has been educated at a first-class school, where he can be practically and thoroughly taught the business of a NURSERYMAN and GARDENER. Terms must be moderate.—R. D., *Gardeners' Chronicle* Office, W.C.

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TRAVELLER, SHOPMAN, or CLERK.—Fifteen years' experience. Moderate salary expected. Highest references.—TRAVELLER, Samuel Barnard, 6, Tavistock Street, Bedford Square, London, W.C.

BOOK-KEEPER, SALESMAN, SEEDSMAN, or any position where stability and energy are essential.—A. Z., Mr. Schild, 24, Allen Road, South Hornsey, N.

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"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided our breakfast tables with a delicately-flavoured beverage which may save us many heavy doctors' bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal shaft by keeping ourselves well fortified with pure blood and a properly nourished frame."—*Civil Service Gazette.*

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More Cures of Asthma, Consumption, Coughs, &c., by
DR. LOCOCK'S PULMONIC WAFERS.—From Mr. Reinhardt, Chemist, Briggate, Leeds:—"Many and surprising are the Testimonials of Relief afforded to confirmed cases of Asthma, and Consumption, and long-standing Coughs." Asthma, Consumption, Colds, Gout, Rheumatism, and all Nervous Pains are instantly relieved by DR. LOCOCK'S WAFERS. Of all Druggists at 1*s*. 1½*d*. per box.

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HOME GROWN
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COMPLETE COLLECTION
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CHOICE VEGETABLE SEEDS,
To produce a supply of the best vegetables, all the year round.

CARRIAGE FREE TO ANY RAILWAY STATION IN ENGLAND. PRICE 63/- 5 PER CENT DISCOUNT ALLOWED FOR PROMPT PAYMENT.

This Collection is specially suitable for a "Large Garden," and contains:—

Peas, best sorts for succession	..18 *qts.*	Rampion	.. 1 *pkt.*
Beans, do. do.	6 ,,	Lettuce, for succession	5 ,,
French Beans do.	4 *pts.*	Mustard	.. 1 *qt.*
Beet, Suttons' and other best varieties	.. 2 *pkt.*	Melon, best varieties	.. 3 *pkt.*
Borecole, or Kale	.. 4 ,,	Onion, Impd. Reading and others	.. 9 *oz.*
Brussels Sprouts	.. 1 *l. pk*	Parsley, Suttons' Imperial	.. .. 2 ,,
Broccoli, best sorts for succession	.. .. 6 *pkt.*	Parsnip, Student	.. 4 ,,
Cabbage do. do.	6 ,,	Radish, best sorts	..16 ,,
Savoy, best sorts	.. 3 ,,	Spinach	.. .. 2 *pts.*
Carrot do.	..12 *oz.*	Salsify	.. .. 1 *l. pk*
Cauliflower do.	.. 2 *pkt.*	Scorzonera	.. 1 ,,
Celery do.	.. 2 ,,	Turnip, fine sorts	..10 *oz.*
Couve Tronchuda	.. 1 ,,	Vegetable Marrow	.. 1 *l. pk*
Cress	..½ *pint and* 2 ,,	Sweet and Pot Herbs	6 *pkt.*
Cucumber, best sorts	.. 4 ,,	Tomato	.. .. 1 ,,
Endive do.	.. 3 ,,	Capsicum	.. 1 ,,
Leek, Musselburgh	.. 1 *oz.*	Corn Salad	.. 1 ,,
		Orache	.. .. 1 ,,

All of the best and most productive kinds.

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To produce a supply of the best vegetables, all the year round.

CARRIAGE FREE TO ANY RAILWAY STATION IN ENGLAND. PRICE 42/- 5 PER CENT DISCOUNT ALLOWED FOR PROMPT PAYMENT.

This Collection is specially suitable for a "Moderate-sized Garden," and contains:—

Peas, best sorts	..20 *pts.*	Leek, best varieties	.. 1 *pkt.*
Beans do.	.. 8 ,,	Lettuce, do.	.. 3 ,,
French Beans, do.	.. 3 ,,	Mustard, do.	.. 1 *pt.*
Beet, Suttons' and other best sorts	.. .. 2 ,,	Melon, do.	.. 2 *pkt.*
Borecole, do.	.. .. 3 ,,	Onion, do.	.. 5 *oz.*
Brussels Sprouts, do.	.. 1 *l. pk*	Parsley, do.	.. 1 ,,
Broccoli, best sorts	.. 5 *pkt.*	Parsnip, do.	.. 3 ,,
Cabbage, do.	.. 5 ,,	Radish, do.	.. 7 ,,
Savoy, do.	.. 2 ,,	Spinach, do.	.. 1½ *pts.*
Carrot, do.	.. 7 *oz.*	Salsify, do.	.. 1 *pkt.*
Cauliflower, do.	.. 2 *pkt.*	Scorzonera, do.	.. 1 ,,
Celery, do	.. 2 ,,	Turnip, do.	.. 6 *oz.*
Couve Tronchuda	.. 1 ,,	Vegetable Marrow, do.	1 *pkt.*
Cress, best sorts, 8 *oz.* &	2 ,,	Sweet and Pot Herbs, best sorts	.. 4 ,,
Cucumber, do.	.. 3 ,,	Tomato, best sorts	.. 1 ,,
Endive, do.	.. 2 ,,	Rampion	.. 1 ,,
Capsicum	.. 1 ,,	Corn Salad	.. 1 ,,
Orache	.. .. 1 ,,		

All of the best and most productive kinds.

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OF
CHOICE VEGETABLE SEEDS,
To produce a supply of the best vegetables, all the year round.

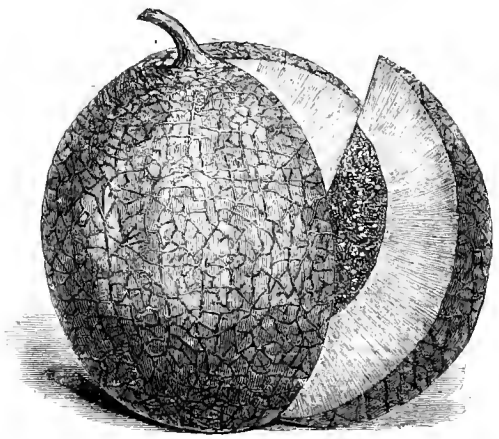
CARRIAGE FREE TO ANY RAILWAY STATION IN ENGLAND. PRICE 21/- 5 PER CENT DISCOUNT ALLOWED FOR PROMPT PAYMENT.

This Collection is specially suitable for a "Small Garden," and contains:—

Peas, best sorts for succession	..12 *pts.*	Endive, best sorts	.. 1 *pkt.*
Beans, do. do.	3 *pts.*	Leek, Musselburgh	.. 1 ,,
French Beans, do.	1½ ,,	Lettuce, for succession	2 ,,
Beet, Suttons'	.. 1 *pkt.*	Mustard	.. 4 *oz.*
Borecole, or Kale	.. 2 ,,	Melon	.. .. 1 *pkt.*
Brussels Sprouts	.. 1 ,,	Onion, Impd. Reading and others	.. .. 3 ,,
Broccoli, best for succession	.. 3 ,,	Parsley, Suttons' Imperial	.. .. 1 ,,
Cabbage, do.	.. 3 ,,	Parsnip	.. .. 1 *oz.*
Savoy, best sort in cultivation	.. 1 ,,	Radish, best sorts for succession	.. 3 ,,
Carrot, best sorts	.. 3 *oz.*	Spinach	.. .. 4 ,,
Cauliflower, do.	.. 1 *pkt.*	Turnip, fine sorts for succession	.. 3 ,,
Celery, do.	.. 2 ,,	Vegetable Marrow	.. 1 *pkt.*
Couve Tronchuda	.. 1 ,,	Sweet and Pot Herbs	2 ,,
Cress	.. 3 *oz. and* 1 ,,	Tomato	.. .. 1 ,,
Cucumber, best sorts	.. 2 ,,		

All of the best and most productive kinds.

The Best Scarlet-flesh Melon.



Suttons' Hero of Bath Melon.

Without exception the finest scarlet-fleshed Melon ever introduced; unequalled in flavour, and exquisite in form. Was awarded the First Prize at the Great International Fruit and Flower Show, Edinburgh, 1875. *Price 2s. 6d. per packet.*

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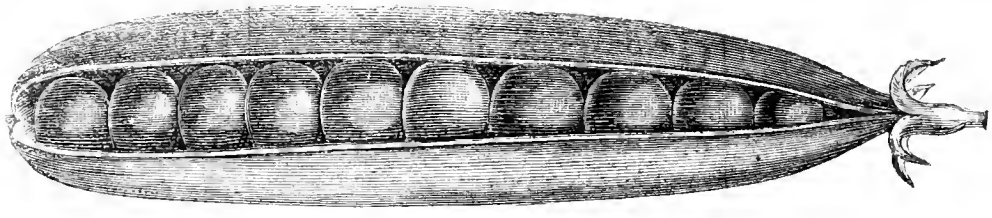
SPLENDID NEW PEA FOR 1876, "DR. MACLEAN."

SUTTON & SONS have had repeated opportunities of observing this Pea during the last two seasons, and have the greatest confidence in recommending it to their numerous customers.



SUTTON & SONS have received a large supply from Mr. Chas. Turner, on terms which will enable them to send it to their customers in the original sealed bags at the same price retail as charged by Mr. Turner.

Introduced by Mr. Charles Turner. Price 7s. 6d. per quart, 4s. per pint.

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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE

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Established 1841.

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Subscribers who wish to have "The Gardeners' Chronicle" forwarded DIRECT FROM THE OFFICE are respectfully informed that payment MUST BE MADE IN ADVANCE.

GRAND SPRING FLOWER SHOW, MARCH 15 and 16, in the Large Hall, Leeds Horticultural Gardens Company (Limited). Schedules on application.
Office, 103, Hyde Park Road. G. FORBES, Secretary.

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QUICK—150,000 extra strong, transplanted, from 4 to 6-yr. old. LAURELS, Portugal, 300 strong, 3 to 4 feet, bushy; Common, do., 1000, from 35 to feet high. For Price, &c., apply to
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For prices and description see BULB CATALOGUE.
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MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, January 26, at half-past 12 o'Clock precisely, Standard, Dwarf, and Climbing ROSES, specimen CONIFERS, Hardy and Ornamental TREES and SHRUBS, Herbaceous PLANTS, Dutch BULBS, RUSTIC GARDEN WORK, &c.

On view the morning of Sale, and Catalogues had.

Important Sale of Lilies, Orchids, and Other Roots.

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On view the morning of Sale, and Catalogues had.

Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, January 31, at half-past 12 o'Clock precisely, an importation of the new and beautiful ODONTOGLOSSUM CIRRHOSUM, just received from South America in good condition. This superb new Odontoglossum is a much more handsome species than the still rare O. nævium, somewhat resembling it in colour and character, but infinitely superior. It produces fine strong branched spikes of blossom, each flower 3 to 4 inches across, white, marked, and spotted in the way of O. nævium, exceedingly chaste and beautiful. Also a large importation, in the finest possible condition, just received from Ecuador, of ODONTOGLOSSUM HALLII, many of them in huge masses, the largest and finest ever imported, with from 20 and 30 to 40 bulbs each. This rare Odontoglossum is one of the most magnificent of the family. At the same time will be sold an importation from South America of a new Oncidium, ONCIDIUM PENTADACTYLON. Plants of this Oncidium have not before reached this country alive. Also a few plants from Ecuador of a Masdevallia, most likely an entirely new species. At the same time will also be sold an importation of plants in good condition, just received from India, of the true and exceedingly rare white-flowering DENDROBIUM BARBATULUM; and from Brazil a quantity of the attractive SOPHRONITES GRANDIFLORA.

On view the morning of Sale, and Catalogues had.

Auction Mart.

For unreserved SALE. An important consignment of 6000 unusually fine LILIUM AURATUM, in splendid condition; and a variety of choice JAPANESE MANUFACTURES and CURIOS from Japan; also 800 choice double CAMELLIAS, Indian and Ghent AZALEAS from Belgium, well set with bloom-buds.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the Mart, Tokenhouse Yard, near the Bank, E.C., on MONDAY, January 31, at 11 for half-past 11 o'Clock precisely.

On view morning of Sale. Catalogues had at the Mart, and of the Auctioneers, 98, Gracechurch Street, E.C.

1876.—Preliminary Notice of

FORTHCOMING SALES, by PROTHEROE AND MORRIS, Nursery, Market Garden, and Estate Auctioneers, Surveyors and Valuers.

FEBRUARY 8 to 11.—The EXETER NURSERIES. By order of Messrs. Lucombe, Pince & Co. A considerable number of specimen Coniferæ and Evergreens, together with a large quantity of smaller Stock, possessing great attraction for the Trade.

FEBRUARY 14 to 18.—HEATHERSIDE NURSERY, Five days' sale.—The first portion of this noted healthy and choice Nursery Stock, ranging over the extensive Freehold Building Estate, now in the hands of the Auctioneers, for sale by private treaty.

FEBRUARY 22.—The EXOTIC NURSERY, Tooting, S.W. By order of Mr R. Parker. Selected assortment of well-grown Nursery Stock.

FEBRUARY 23 and 24.—WINDLESHAM, near Bagshot, Surrey. By order of the Mortgagee, with the concurrence of the Executors of the late Mr. George Baker, deceased. Choice and principally Thriving Young Nursery Stock.

MARCH.—The valuable LEASEHOLD INTEREST, with the GOODWILL of the old-established high-class Business of the Clarendon Nursery, Maida Vale, St. John's Wood, N.W.; also the LEASE of the Willesdon Nursery, Willesdon, Middlesex. By order of Mr. George Videon.

MARCH.—The LEASE and GOODWILL of the celebrated American Nursery, Windlesham, near Bagshot, Surrey. By order of the Mortgagee.

Further particulars will shortly appear.

Preliminary.—Sale of a very Valuable Collection of Specimen and Half-specimen STOVE and GREENHOUSE PLANTS, the whole of which have been exhibited.

ARTINGSTALL AND HIND (the surviving Partners of the late Firm of CAPES, DUNN & Co.) beg to announce that they have received instructions from Messrs. E. Cole & Sons to SELL by AUCTION, about the middle of April, at their Nurseries, Withington, near Manchester, the valuable Collection of EXHIBITION PLANTS.

Catalogues will be prepared in due course, and further information may be had by applying to the Auctioneers, 5, Princess Street, Manchester.

TO be SOLD, the INTEREST in the LIMERICK SEED WAREHOUSE (Established 1826), where a successful Nursery and Seed Business is carried on.

Everything in this Establishment is in first-class working order. Its large and influential connection and high standing has been steadily maintained for half a century.

A large field for enterprise is thus afforded to any one anxious to carry on the Business, and extend it, of which it is quite capable, as can be clearly shown.

The Concerns are most commodious, admirably situated in the very centre of the best business part of the city.

*** Applications to be made to JOHN ABRAHAM, 8, George Street, Limerick.—January, 18, 1876.

To Nurserymen and Florists.

TO BE SOLD, the LEASE and GOODWILL, either with or without the well selected stock, of an Old Established BUSINESS, situate in the midst of a rapidly increasing neighbourhood in a western district of town. Rent nominal. Price to an immediate purchaser moderate.

Apply to GEORGE G. FLINT, Surveyor, 18, Duke Street, Manchester Square, London, W.

TO BE LET, TWO or MORE ACRES of LAND, and SMALL COTTAGE suited for a Gardener, one mile from Farnborough Station. Rent of Cottage per week, 3s. 6d. If let with land may be taken by the year. Respectable references required. Apply,

A. S., Woodley Cottage, Cove, Farnborough, Hants.

TO BE LET, GRASS LANDS in WIMBLEDON PARK, eight miles from the City and West End, and near three stations on the South-Western Railway. Entry at Lady-day. No valuations. Apply to Mr. ALFRED W. OBORNE, Resident Agent's Office, Wimbledon Park, S.W.

FOR SALE, at half the cost price, a NEST of 224 DRAWERS, nearly new, mahogany fronted, suitable for Flower and small Vegetable Seeds; size of each Drawer 8½ inches by 3½ inches; depth, 3¼ inches, with two separate tins to fit in each Drawer.

Also, TWO LENGTHS of TWO-TIER BINS, 7 feet 4 inches by 3 feet 4 inches, partitioned, bottom tier to hold bushels, top to hold half bushels.

Also SMALL SET of SEVEN DRAWERS, twenty-four partitions in each Drawer, for Flower Seed Packets. Apply to 11, Andover Terrace, Hornsey Road, N.

Wood Engraving.

MR. W. G. SMITH, ARTIST and ENGRAVER on WOOD, 15, Mildmay Grove, London, N.

Metallic Hothouse Builder to Her Majesty.

HENRY HOPE (late Clark & Hope, formerly Clark), HOTHOUSE BUILDER and HOT-WATER APPARATUS ENGINEER.

55, Lionel Street, Birmingham. Established A.D. 1818.

BOOKS of DESIGNS, 5s. each.

☞ The Extensive Ranges of Metallic Hothouses in the Royal Gardens, Windsor and Osborne, were executed at this Establishment.

GOVERNMENT EMIGRATION.

SYDNEY, NEW SOUTH WALES.—Passages are provided for Married Couples not exceeding 40 years of age, with or without children; and Single Men and Women not exceeding 35 years of age; being FARMERS, MECHANICS, MINERS, LABOURERS, and FEMALE DOMESTIC SERVANTS, on payment of the following rates:—12 years and not exceeding 40, £5 10s.; 1 year and under 12, £2 15s.

For passages and all further information, apply to the AGENT-GENERAL, at 3, Westminster Chambers, Victoria Street, London, S.W

TAPLIN'S BANBURY IMPROVED WHITE SPANISH ONION SEED, 1s. 6d. per packet.

Taplin's Treatise, "HOW TO GROW ONIONS," 6d.

J. A. TAPLIN, 22, Parson's Street, Banbury.

FRUIT TREES.—One of the largest stocks in the county, consisting of Standard and Pyramid CHERRIES, APPLES, PEARS, and PLUMS, from 70s. per 100. Also a large quantity of extra strong Standard and Espalier GREEN GAGES. Catalogues of

T. EVES, Gravesend Nurseries.

Seeds, Seeds, Seeds.

THE HEATHERSIDE NURSERIES CO.'S Illustrated CATALOGUE of GARDEN, FARM, and FLOWER SEEDS is now ready, and will be sent, post paid, on application.

59, Queen Victoria Street, London, E.C.

To the Trade.

R. G. FORTT, SEEDSMAN AND NURSERYMAN (late James Hunter & Co.), 29, Clare Street, Bristol.

The Best Celery is

LEICESTER RED—1s. per packet.

The best SAVOY is KING COFFEE, 1s. per packet; with many other choice stocks of Seeds. TRADE PRICED LIST on application.

HARRISON AND SONS, Seed Growers, Leicester.

To the Trade.

CHARLES SHARPE AND CO.'S Wholesale CATALOGUE of Home-Grown Seeds, Agricultural Seeds, Kitchen Garden Seeds, Flower Seeds, Seed Potatos, is now ready, and will be forwarded post-free on application.

CHARLES SHARPE AND CO., Seed Growers and Merchants, Sleaford; and at 31, Seed Market, Mark Lane, E.C.

NOTICE.—Our New VEGETABLE and FLOWER SEED CATALOGUE has been posted to all our customers ten days ago; should any of our friends not have received a copy we shall be glad to send another.

DICKSON, BROWN, AND TAIT, Seed Merchants, 43 and 45, Corporation Street, Manchester.

Choice Novelties in Vegetables, Flowers, and POTATOS.—See

SUTTONS' AMATEUR'S GUIDE, Post-free for fourteen stamps.

SUTTONS' SHORT SELECT SEED LIST, gratis and post-free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving Size, Price, Popular and Botanical Names, Derivations, Description, Form, Colour, Foliage, Growth, Timber, Use in Arts, Native Country and Size there, Situation, Soil, and other information, with copious Index of their many Synonyms. Free by post for six stamps.

RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

To Market Gardeners and Others.

SUTTON AND SONS can offer

Suttons' Ringleader Peas	Veitch's Perfection Peas
Suttons' Racehorse Peas	Scimitar Peas
Little Gem Peas	Bedman's Imperial Peas
Fortyfold Peas	Harrison's Glory Peas

Suttons' Improved Early Champion Peas,

Of true stocks, at moderate prices for large quantities.

Reading, Berks.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.

Mr. WEBB, Calcot, Reading.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

SNOWFLAKE POTATO, splendid new variety from America, extraordinary cropper and splendid quality. Fine ENGLISH GROWN SEED, price 6d. per lb., 6s. per peck of 14 lb., 21s. per bushel of 56 lb.; much cheaper by the sack or ton. Orders of 21s. and upwards carriage paid.

DANIELS BROTHERS, Seed Growers, Norwich.

LILIUM AURATUM and all known Lilies, in superb Bulbs, at low prices.

DIOSPYROS KAKI—the grand new hardy Fruit. [&c.

HYPERICUM PATULUM—grand hardy Flowering Shrub;

See our advertisements in *Gardeners' Chronicle*, Nov. 19 and 26, 1875; also our CATALOGUE, free on application.

The NEW PLANT and BULB COMPANY, Lion Walk, Colchester.

To the Trade.

Home-grown GARDEN and AGRICULTURAL SEEDS.

H. AND F. SHARPE'S Wholesale Special Priced LIST of the above Seeds of 1875 growth is now ready; it comprises all the best sorts in cultivation. The quality is very fine, and the prices will compare favourably with those of other growers.

Seed Growing Establishment, Wisbech.

NOVELTIES.—More beautiful and choice than any that have been offered to the public for many years. Sweet-scented free-blooming hybrid RHODODENDRONS, AZALEAS, &c., which have received First-class Certificates of Merit.

DESCRIPTIVE PRICED LIST free on application to ISAAC DAVIES, Nurseryman, Ormskirk, Lancashire.

EARLY SEED POTATOS.—Mona's Pride, Erin's Queen, Gloucestershire Kidney, Royal Ashleaf, Myatt's Prolific, Alma Kidney, Sandringham Kidney, Veitch's Improved Ashleaf, &c. A large quantity of the above on offer, in fine condition. Prices, moderate, on application to

G. BRAMLEY, Hambleton, near Selby, Yorkshire.

SEED PEAS.

The Market Gardener (new)	Laxton's Fillbasket
Laxton's Supreme	Kentish Invicta
	Suttons' Emerald Gem

The above are true to name, and can with the greatest confidence be recommended for Stock Seed. For prices, &c., apply

JAMES E. BULLOCK, Seed Merchant, &c., Pensham Fields, Pershore.

DAHLIAS, German, French, and Belgian; NEW GLADIOLI; LILIUM GIGANTEUM. Splendid seed, per 1000, 17s., 500, 10s., 100, 2s. 6d., free by post.

Our AUTUMN LIST will be sent, post-free, to all applicants.

ANT. ROOZEN AND SON, Overveen, near Haarlem, Holland.

To the Trade.—Seed Potatos.

H. AND F. SHARPE are prepared to make Special Offers of SEED POTATOS grown on their own Farms from the finest selected stocks. Their List this season comprises all the English and American varieties worthy of cultivation. The prices will be found very moderate.

Seed-growing Establishment, Wisbech.

To Noblemen, Gentlemen, and Others who are REPLANTING this AUTUMN.

R. NEAL begs respectfully to call the attention of the above to his large and varied stock of Hardy SHRUBS, FRUIT, FOREST, and ORNAMENTAL TREES, ROSES, RHODODENDRONS, CLIMBING PLANTS, &c., which are now in fine condition for removal An early inspection invited.

CATALOGUES may be had on application.

The Nurseries, Wandsworth Common, S.W.

AMERICAN SEED POTATOS.—A Grower having a few more of the above than he requires for his own planting, begs to offer them as under, at per sack of 1½ cwt.:—

EXTRA EARLY VERMONT, 16s.	IDAHO, 12s.
EARLY ONEIDA, 13s.	EARLY ROSE, 10s.

Apply, B. A., Post Office, Minster, near Ramsgate.

To the Trade.

SEAKALE.—Excellent large roots for forcing, and any quantity, 90s. per 1000; any number under, 10s. per 100; packing, 1s. every 500. ASPARAGUS of all ages, RHUBARB, &c.

Remittance with orders. Cheques crossed London and County Bank. Post-office Orders, High Street, Battersea.

ALFRED ATWOOD, 5, Simpson Street, Battersea, S.W. or Manor Farm, Bromley, Middlesex.

Chinese Arbor-vitæ.

FRANCIS R. KINGHORN has to offer at a low price a few hundreds of the above, from 3½ to 6 feet high, suitable for screens and hedges, all fine grown and well rooted.

Also VENN'S BLACK MUSCAT and DUKE OF BUCCLEUCH VINES.

Prices of each on application.

Sheen Nursery, Richmond, Surrey.

CHOICE HYBRID GLADIOLI The Gladiolus being a special feature in our business we respectfully invite Growers of this magnificent Autumn Flower to send for our CATALOGUE of Prize Varieties before making their annual purchases. In it all the best sorts are described, and the prices quoted are very moderate.

ROBERTSON AND GALLOWAY, Seed Merchants and Nurserymen, 157, Ingram Street, Glasgow.

Planting Season.

CHARLES BURGESS begs to offer the following:—Strong Standard, Pyramid and Dwarf-trained FRUIT TREES, ROSES, Evergreen and Deciduous FLOWERING SHRUBS, English OAKS, ELMS, and LIMES, up to 10 feet; Larch, Spruce, and Scotch FIRS, and ageneral Nursery Stock. Prices on application.

The Nurseries, London Road, Cheltenham.

Genuine Seeds.

JOHN AND CHARLES LEE, Seedsmen to the Queen, invite attention to their new and extensive CATALOGUE of SEEDS for 1876. This Catalogue has been prepared with their usual care, and contains every novelty, whether home-grown or foreign, with the most minute and useful descriptions of both Vegetable and Flower Seeds. The prices of every article are the very lowest, considering the first-rate quality of the various stocks offered. The long standing of the house of LEE (125 years) is a sure guarantee of the excellence of their seeds and the soundness of their trading. Catalogues may be had post-free on application.

Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

Trees and Shrubs on Sale.—Special Offer.

BENJAMIN WHITHAM,

The Nurseries, Reddish, near Stockport,

Has a large quantity of the following, fine healthy plants—must be cleared, the land being required for other purposes:—

FRUIT TREES.

APPLES, Pyramids, 3-yr.' heads, 3 to 4 feet, 6s. per dozen, 40s. per 100.
,, half standards, stems 2 to 4 feet, 4 to 5 feet high, 7s. per dozen, 50s. per 100; 5 to 6 ft., 8s. per doz., 60s. per 100.
CURRANTS, Black, fine, 10s. per 100.
,, Red, fine, 10s. per 100.
,, White, extra fine, 16s. per 100.
STRAWBERRIES, Yates' Seedling, very fine sort, abundant bearer, extra, 3s. per 100
GOOSEBERRIES, large show and dessert sorts, extra strong, 15s. to 20s. per 100.

FOREST TREES.

AREA THEOPHRASTA (Service tree), grafted sorts, 3 to 4 feet, 5s. per dozen, 30s. per 100; 4 to 5 feet, 6s. per dozen, 40s. per 100; 5 to 6 feet, 8s. per dozen, 60s. per 100; 6 to 8 feet, 9s. per dozen, 70s. per 100.
BEECH, all fine, stout, extra transplanted, 1½ to 2 feet, 3s. 6d. per 100, 25s. per 1000; 2 to 3 feet, 4s. per 100, 33s. per 1000; 3 to 4 feet, 6s. per 100, 40s. per 1000; 4 to 5 feet, 10s. per 100, 65s. per 1000; 5 to 6 feet, 20s. per 100; 6 to 8 feet, 30s. per 100; 8 to 10 feet, 50s. per 100.
CHESTNUT, Horse, 2 to 3 feet, 5s. per 100; 3 to 4 feet, 6s. per 100; 4 to 5 feet, 7s. per 100; 5 to 6 feet, 10s. per 100; 6 to 8 feet, 20s. per 100.
,, ,, fine single specimens for avenues, very stout, straight stems, 12s. per dozen.
,, ,, Scarlet, 5 to 6 feet, 10s. per dozen; 6 to 8 feet, 12s. per dozen.
LIME, fine stock, 2 to 3 feet, 7s. per 100; 3 to 4 feet, 10s. per 100; 4 to 5 feet, 15s. per 100; 5 to 6 feet, 20s. per 100; 6 to 8 feet, 30s. per 100; 8 to 10 feet, 70s. per 100.
PINUS AUSTRIACA, 1½ to 2 feet, 7s. per 100; 2 to 3 feet, 12s. per 100; 3 to 4 feet, 25s. per 100.
POPLAR, Lombardy, 2 to 3 feet, 4s. per 100, 35s. per 1000; 3 to 4 feet, 5s. per 100, 40s. per 1000; 4 to 6 feet, 8s. per 100, 75s. per 1000; 6 to 8 feet, 15s. per 100; 8 to 10 feet, 25s. per 100
,, Ontario, 4 to 6 feet, 8s. per 100; 6 to 8 feet, 12s. per 100; 8 to 10 feet, 25s. per 100.
,, Balsam, 4 to 6 feet, 10s. per 100; 6 to 8 feet, 20s. per 100.
PRIVET, Evergreen, 1½ to 2 feet, 15s. per 1000; 2 to 3 feet, 20s. per 1000; 3 to 4 feet, 25s. per 1000; 4 to 5 feet, 30s. per 1000.
SYCAMORE, 2 to 3 feet, 2s. 6d. per 100, 20s. per 1000; 3 to 4 feet, 3s. per 100, 25s. per 1000; 4 to 5 feet, 4s. per 100, 30s. per 1000; 5 to 6 feet, 6s. per 100, 50s. per 1000.
,, fine, 6 to 8 feet, 18s. per 100; extra strong, 8 to 10 feet, 45s. per 100.

EVERGREENS, ORNAMENTAL TREES AND SHRUBS.

AZALEA PONTICA, bedded, 4 to 6 inches, 6s. per 100, 50s. per 1000.
,, ,, bushy, transplanted, 1½ to 2 feet, 6s. per dozen, 45s. per 100; 2 to 2½ feet, 9s. per dozen, 65s. per 100.
BOX, Green, 1 to 1½ foot, 3s. per dozen, 16s. per 100.
,, 1½ to 2 feet, 4s. per dozen, 25s. per 100; 2 to 3 feet, 4s. 6d. per dozen, 30s. per 100.
LAUREL, Portugal, 1½ to 2 feet, 4s. per dozen, 30s. per 100.
,, ,, very fine, 2 to 3 feet, 8s. per dozen, 60s. per 100.
,, ,, extra fine round bushes, 3 to 4 feet diameter, 2½ to 3 feet, 12s. per dozen, 90s. per 100.
LEDUM LATIFOLIUM, bedded, 3 to 6 inches, 50s. per 1000; 12 to 18 inches, 6s. per dozen, 40s. per 100.
MAHONIA (Berberis) AQUIFOLIA, 1½ to 2 feet, 10s. per 100; 2 to 3 feet, 15s. per 100.
RHODODENDRON, best hybrid, bedded, 3 to 6 inches, 8s. per 100, 60s. per 1000; 6 to 9 inches, 10s. per 100, 90s. per 1000; 9 to 12 inches, 14s. per 100.
,, Ponticum, fine dwarf, round bushes, 1 to 1½ foot, 25s. per 100, £10 per 1000; 1½ to 2 feet, 5s. per dozen, 30s. per 100; 2 to 3 feet diameter, 2 to 2½ feet, 6s. per dozen, 45s. per 100; 3 to 4 feet diameter, 3 to 4 feet, 18s. per dozen, 150s. per 100.
,, Cunningham's White, very bushy, 1¼ to 1½ foot, 50s. per 100; 1½ to 2 feet, 65s. per 100.
,, best named sorts, bushy, 18s. to 30s. per dozen.
THORN, new double scarlet (Paul's), 4 to 5 feet, 5s. per dozen, 35s. per 100; 5 to 6 feet, 6s. per dozen, 40s. per 100 6 to 8 feet, 7s. per dozen, 55s. per 100
,, Double Pink, 4 to 5 feet, 5s. per dozen, 35s. per 100; 5 to 6 feet, 6s. per dozen, 40s. per 100; 6 to 8 feet, 7s. per dozen, 55s. per 100.
,, ,, White, 4 to 5 feet, 5s. per dozen, 35s. per 100; 5 to 6 feet, 6s. per dozen, 40s. per 100; 6 to 8 feet, 7s. per dozen, 55s. per 100.
,, Single Scarlet, 4 to 5 feet, 5s. per dozen, 35s. per 100; 5 to 6 feet, 6s. per dozen, 40s. per 100; 6 to 8 feet, 7s. per dozen, 55s. per 100.
,, Cockspur, 4 to 5 feet, 5s. per dozen, 35s. per 100; 5 to 6 feet, 6s. per dozen, 40s. per 100; 6 to 8 feet, 7s. per dozen, 55s. per 100.
YEW, English, fine, large stock, 9 to 12 inches, 12s. per 100; 1¼ to 1½ foot, 20s. per 100; 1 to 2 feet, 5s. per dozen, 25s. per 100; 2 to 3 feet, 7s. per dozen, 45s. per 100; 3 to 4 feet, 12s. per dozen, 80s. per 100.
,, Irish, 2 to 3 feet, 8s. per dozen; 3 to 4 feet, 12s. per dozen.

MR. LAXTON'S NEW PEAS

For 1876.

THE SHAH.—A very fine podded and prolific white wrinkled Marrow, as early as "Ringleader." Height, 2 feet 6 inches. Quite distinct. First-class Certificate Royal Horticultural Society.

STANDARD.—A handsome, high quality, blue wrinkled Pea, with long curved pods containing from nine to eleven Peas. Will equal "Fillbasket" as a prolific market variety. Described by the Royal Horticultural Society as a very handsome and prolific Pea. Height, 3 feet.

Mr. GILBERT, of Burghley, says of it, after three years' trial, "It is the best Pea I know."

Each of the above 5s. per sealed quarter-pint packet.

The following are Novelties of 1875.

SUPPLANTER.—A first-rate exhibition variety, the earliest of the "Veitch's Perfection" type. Height, 3 feet. First-class Certificate Royal Horticultural Society.

Dr. HOGG.—An early "Ne Plus Ultra," coming into use one week after "Dillestone's." Height, 3 feet. First-class Certificate.

UNIQUE.—A dwarf "William the First," with long, deep green pods. Height, 1 foot. First-class Certificate.

CONNOISSEUR.—A most distinct and delicious late Pea, raised from "Ne Plus Ultra." Height, 6 feet.

Each of the above 5s. per half-pint.

WILLIAM THE FIRST and OMEGA can also be supplied. For these and Mr. Laxton's other varieties see our General List.

£20 is offered in Prizes for Mr. Laxton's Peas in 1876.

☞ As reference has been frequently made in the gardening periodicals to the high prices at which Mr. Laxton's Peas have been sent out, Mr. Laxton informs us that he has tested at great expense and discarded considerably over 1000 varieties, many having been grown in large quantities—those sent out being the cream only from hundreds of crosses and selections obtained by him. These have passed honourably through the strict and scrutinising trials instituted by the Fruit Committee of the Royal Horticultural Society at Chiswick, where they were grown under the ordinary course of cultivation, and have again been grown and carefully selected under Mr. Laxton's personal inspection.

HURST & SON,

6, LEADENHALL STREET, LONDON, E.C.

CIRCULAR. Edinburgh, 12, Melbourne Place, January 1, 1876.

I have the pleasure to intimate that I have this day assumed as Partner in my Business, my Nephew, Mr. ALEXANDER DUFF, who has for several years past taken the principal management in my Establishment.

The Business will be carried on by the NEW FIRM as R. T. MACKINTOSH AND CO.

I take this opportunity of thanking my Friends and Customers for their support during the last Twenty-five Years, and trust their patronage will be continued to the New Firm.

R. T. MACKINTOSH.

Evergreen Hedges. Box, Green Hollies, and LIGUSTRUM OVALIFOLIUM.

R. NEAL, having a very large Stock of the above, can offer the same by the 100 or 1000 at a very low rate.

Also 10,000 ACER CAMPESTRIS, from 5 to 8 feet in height, clean-grown stuff.

Price on application.

The Nurseries, Wandsworth Common, S.W.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post free their GENERAL LIST of SEEDS, which includes their special stocks of

WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

TRY HOOPER'S SEEDS this year.

HOOPER'S CATALOGUE is now Ready.

Price 1s., which is allowed to Purchasers.

HOOPER'S SEEDS are Genuine.

COLLECTIONS for KITCHEN GARDEN, 12s. 6d., 21s., 42s., 63s.; FLOWER GARDEN, 10s. 6d., 21s., 31s. 6d., 42s.

HOOPER'S COVENT GARDEN Stores, London, W.C.

To the Trade.—Surplus Nursery Stock.

JOHN PERKINS AND SON beg to offer the following:—

APPLES, Standards, fine, 50s. to 60s. per 100.
PLUMS, Standards, fine, 70s. per 100.
APRICOTS, Dwarf-trained, 24s. to 30s. per dozen.
NECTARINES, Dwarf trained, 24s. to 30s. per dozen.
CURRANTS, Black Naples, very fine, 76s. per 1000.
,, Victoria or Houghton Castle, 60s. per 1000.
GOOSEBERRIES, 10s. per 100.
ROSES, Standards, 10s. per dozen, 75s. per 100.
,, half-Standards, 8s. per dozen, 60s. per 100.
,, dwarf on Manetti, 25s. per 100.
BEECH, transplanted, 2 to 3 feet, 20s. per 1000.
HAZEL, transplanted, 2 to 3 feet, 20s. per 1000.
HORNBEAM, transplanted, 1½ to 2 feet, 18s. per 1000; 2 to 3 feet, 25s. per 1000
PRIVET, Evergreen, transplanted, very fine, 1½ to 2 feet, 15s. per 1000; 2 to 3 feet, 18s. per 1000; 3 to 4 feet, 20s. per 1000.
PINUS AUSTRIACA, extra transplanted, stout, and very fine, 2 to 3 feet, 15s. per 100.
WHITETHORN or QUICK, 2-yr. transplanted, 8s. per 1000; 3-yr. transplanted, 11s. per 1000; 4-yr. transplanted 15s. per 1000
BLACKTHORN, extra fine, 1-yr., 1 to 2 feet, 5s. per 1000.
,, transplanted, fine, 1½ to 2 feet, 10s. per 1000; 2 to 3 feet 12s. per 1000.

52, Market Square, Northampton.

DAVISON AND CO., White Cross Nurseries, Hereford, offer the following:—

APPLES, Cider sorts, 7 to 8 feet, 22s. per dozen, £8 per 100, £75 per 1000.
,, Dessert, 6 to 7 feet, 18s. per dozen, £7 per 100, £65 per 1000.
ROSES, Dwarf, selected from Rose Catalogue, 8s. per dozen, 60s. per 100, £25 per 1000.
,, Standard, selected from Rose Catalogue, 16s. per dozen, £6 per 100, £50 per 1000.
AMERICAN ARBOR-VITÆ, 3 to 4 feet, 20s. per 100.
AUSTRIAN FIR, 2½ to 3½ feet, 15s. per 100; 3½ to 4½ feet, 25s. per 100; 5 to 6 feet, 35s. per 100; all fine plants.
BEECH, common, 5 to 6 feet, 12s. per 100.
BIRCH, Weeping, 5 to 6 feet, 10s. per 100.
COTONEASTER, 2 to 3 feet, 20s. per 100.
CHESTNUT, Horse, 6 to 7 feet, 25s. per 100.
LAUREL, Common, 4 feet, 30s. per 100.
,, Portugal, 2 to 2½ feet, 40s. per 100.
PINUS INSIGNIS, 3 to 4 feet, 70s. per 100.
SCOTCH FIRS, 7 feet, 25s. per 100.
THUJA LOBBII, 2 to 3 feet, 30s. per 100.
ABIES ALBERTIANA, 4 feet, 15s. per dozen.
,, DOUGLASII, 7 to 8 feet, 60s. per dozen.
,, NORDMANNIANA, 2½ to 3 feet, 27s. per dozen.
,, ,, very fine, 3 to 4 feet, 48s. per dozen.
,, PINSAPO, 4 to 5 feet, 72s. per dozen.
ARAUCARIA IMBRICATA, 2 to 3 feet, 42s. per dozen.
ACER, sorts, 9 to 10 feet, 18s. per dozen.
AILANTUS, 8 to 9 feet, 30s. per dozen.
BERBERIS JAPONICA, 3 feet, 18s. per dozen.
BEECH, Common, 7 to 8 feet, 9s. per dozen.
BIRCH, Silver Weeping, 9 to 10 feet, 9s. per dozen.
BIOTA AUREA, 1½ foot, 24s. per dozen.
,, ELEGANTISSIMA, 1½ to 2 feet, 42s. per dozen.
CATALPA SYRINGIFOLIA, 7 to 8 feet, 18s. per dozen.
CUPRESSUS LAWSONIANA, 4 feet, 12s. per dozen.
CEDAR, Red, 4 to 5 feet, 12s. per dozen.
CHESTNUTS, Horse, 7 to 8 feet, 12s. per dozen.
,, ,, Scarlet, 7 to 8 feet, 24s. per dozen.
LABURNUM, 9 to 10 feet, 24s. per dozen.
LIME, 10 to 12 feet, 20s. per dozen.
SYCAMORE, 7 to 8 feet, 9s. per dozen.
ONTARIO POPLAR, 12 feet, 18s. per dozen.
YEWS, Pyramid, 5 to 6 feet, 30s. per dozen; 8 to 9 feet, five 7s. 6d. each.
ASPARAGUS, Giant, 15s. per 1000; Connover's, 30s. per 1000
SEAKALE, 2-yr., 10s. per 100,

To the Trade Only.

JOHN BESTER, White Hart Lane, Tottenham, offers the following :—
PELARGONIUMS, Queen Victoria, 10s. per dozen; Triomphe de St. Maude, the finest crimson-red market kind, 10s. per dozen; packing included.
BALSAM SEED, a few ounces of the very finest, in nine colours, 10s. per oz.
CUCUMBER, Beauty of St. Albans, 7s. per 100.
LOBELIA PUMILA MAGNIFICA, from store pots, at per 100 or 1000. Price on application.
All orders prepaid.

New Cucumber for 1876.

LEE'S ALTRINCHAM DEFIANCE.—This Cucumber is quite a novelty, and is very distinct from anything hitherto offered to the public; it is a smooth variety, very dark green, a great cropper, and is quite unequalled in quality. Its average length is from 15 to 20 inches. The seed, which is now ready, will be sent out in sealed packets only, price 2s. 6d. per packet of five seeds. Usual allowance to the Trade.

From the Altrincham and Bowdon United Horticultural Benefit and Provident Society :—"Having seen Mr. Lee's Cucumber growing, as well as a brace before us, and taking into consideration the good qualities of it, we consider it to be one of the best ever offered to the public. We therefore name it Lee's Altrincham Defiance. (Signed) J. WALKER, Sec.

H. LEE, Florist and Landscape Gardener, Peel Causeway, Altrincham, Cheshire.

FINE AVENUE TREES, Straight and Handsome.
CHESTNUTS, Horse, 10 to 12 feet.
CHICHESTER ELMS, 10 to 12 feet.
LIMES, 10 to 12 feet.
NORWAY MAPLE, 10 to 12 feet.
OAKS, Turkey or Levant, 9 to 10 feet.
SYCAMORE, 10 to 12 and 12 to 15 feet, very straight.
ROBERT F. DARBY, The Nurseries, Cirencester.

CERASUS LAURO-CERASUS CAMELLIÆFOLIA (the Camellia-leaved Laurel).—This extraordinary and elegant Laurel was raised by Mr. Wood, of Woodbridge, in Suffolk, on whose behalf we are now offering it for the first time to the public. The leaves are light green, like the common Laurel, but differ from it in shape in being elegantly curled, like a Camellia leaf, or more closely resembling in form the beautiful Croton volutum.

The effect of the plant, grown as a pyramid and well pruned, is peculiarly striking, and if planted close as an edging plant, and pinched well back, it produces a very neat and pleasing appearance.

We propose to distribute this well-known variety at the following low prices, being desirous of seeing it largely used, as it deserves to be, for the purposes above-mentioned :—Per plant, 5s.; per dozen, 42s. Special offer to the Trade.

J. AND C. LEE, Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

MARTIN'S LONG GUN CUCUMBER.—Some quarter of a century ago Mr. Arthur, then traveller for a large firm of Nurserymen in Edinburgh, found this invaluable Cucumber being grown by a Gamekeeper named Martin, in the East Lothians; Mr. Arthur at once recognised its superiority over all other varieties, which character it has since maintained. Amongst the very few who have had the fortune to obtain the original stock, Mr. Arthur gave to our Mr. John Reid a few seeds under the very appropriate name of MARTIN'S LONG GUN. The original name of Martin's has been replaced by a firm who received a few seeds as a gift from Mr. John Reid, who has grown the original stock for over 25 years, and during his extensive experience he has failed to meet with any variety, including the many novelties, equal in flavour or such abundant croppers. It grows from 20 to 24 inches, and we confidently offer it as one of the very best grown. In sealed packets at 2s. 6d. each.

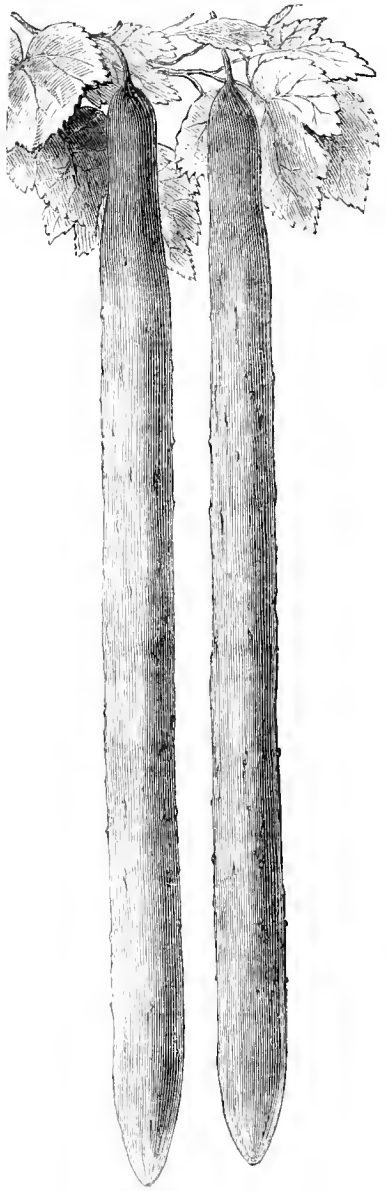
REID AND CO., Appley Bridge Nursery, Wigan.

JAMES BIRD, of the American Nurseries, Downham, offers the undermentioned, in fine healthy condition—price on application :—
BIRCH, Common, 6 to 8 feet.
CHESTNUT, Horse, 8 to 10 and 12 feet.
ELM, Chichester, 10 to 12 and 14 feet.
OAK, Levant, 8 to 10 and 12 feet.
THORNS, Standard, named.
CHERRIES, Standard, named.
ABIES DOUGLASII, 8 to 10 feet.
CEDRUS ATLANTICA, 1 to 2 feet.
RETINOSPORA PISIFERA, 2 to 3 feet.
THUJA LOBBII, 3 to 4 feet.
BOX, Tree, 1½ to 2 and 2 to 3 feet.
CEDAR, Red, 2 to 3 feet.
CHESTNUT, Horse, 1 to 1½ foot.
,, Spanish, 1 to 1½ foot.
,, ,, 1-yr. seedlings.
ACER NEGUNDO, 1-yr. seedlings.
LAUREL, Common, 1-yr.
VIRGINIAN CREEPER, fine stuff.

Bargains.

H. BLANDFORD, The Dorset Nurseries, Blandford, offers the following trees, which are exceedingly well grown, with plenty of roots and worth nearly double the money :—
CHERRIES, Morello, handsome fruiting trees, pyramids, 6 feet high, 25s. per dozen.
VINES, good planting canes of the following varieties, warranted true to name, viz.:—Alicante, Bowood Muscat, Black Hamburgh, Buckland Sweetwater, Foster's Seedling, Gros Colman, Muscat of Alexandria, and Trebbiano, 3s. each, 30s. per dozen.
ROSE, Dwarf, very fine, leading varieties only, 50s. per 100.
ASPARAGUS ROOTS, 4-yr. old, 3s. 6d. per 100, 30s. per 1000.
ARAUCARIA IMERICATA, 2 feet, fine, 30s. per dozen.
ARBOR-VITÆ (American), 7 to 8 feet, 21s. per dozen.
CUPRESSUS LAWSONIANA, 6 to 7 feet, specimens, 25s. per dozen.
CEDRUS DEODARA, 1½ foot, transplanted autumn, 1874, 12s. per dozen, 90s. per 100.
HIBISCUS SYRIACUS, 4 to 5 feet, bushy, 9s. per dozen.
THUJA AUREA, 1½ foot, well furnished, 25s. per dozen.
,, ELEGANTISSIMA, 1½ foot, 25s. per dozen.
HORNBEAM, 5, 6, and 7 feet, 10s., 15s., and 25s. per 100.
CHESTNUT, Horse, fine for avenues, 8 to 10 ft., 80s. per 100.
OAK, English, quartered, 7 to 8 feet, 50s. per 100.
SPRUCE, 1½ foot, 45s. per 1000.
WHITETHORN (Quick), 4-yr transplanted, 2½ to 3 feet, extra stout, clean, and well rooted, 20s. to 25s. per 1000.
Special offer will be made to the Trade.

DANIELS BROS.'
"DUKE OF EDINBURGH"
CUCUMBER.
"The finest in Cultivation."



DANIELS BROS.'
"Duke of Edinburgh" Cucumber.
Per Packet, 2s. 6d.

A magnificent variety, of a fine robust constitution, its fruit growing rapidly to the length of 30 to 36 inches, being at the same time of the most beautiful proportions and splendid quality. Immensely prolific, and unrivalled for exhibition or general use.

From ALBERT CHANCELLOR, Esq., *The Retreat, Richmond, S.W., January 2, 1875.*

"I grew your 'Duke of Edinburgh' Cucumber last year, some of the fruit measuring nearly 3 feet in length, perfectly straight, and of most delicious flavour. It is the finest Cucumber I have ever seen."

DANIELS BROS
Seed Growers
NORWICH.

DAVID LLOYD AND CO. (LIMITED).
CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.
Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following :—
J. T. RUBERY, 8B, Rumford Place, Liverpool.
SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
R. AND J. TAYLOR, 17, Vachel Road, Reading. [ham.
AGENTS WANTED.

AVENUE TREES.

	Girth 4 ft. from ground.
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10 inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8 ,,
MAPLES, Norway, 12 to 16 feet high ..	5 to 8 ,,
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10 ,,
,, Scarlet, 10 to 14 feet high	8 to 10 ,,
,, Double, 10 to 14 feet high	8 to 10 ,,
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10 ,,
ELMS, 15 to 18 feet	7 to 9 ,,

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.
Knap Hill Nursery, Woking, Surrey.

PARKER AND BUSH (late J. NELSON), St. Michael's Hill Nursery, Bristol, have to offer the following :—
APPLES, Pyramid, of sorts, very strong, 21s. per dozen.
BEECH, Common, good transplanted, 3 to 4 ft., 40s. per 1000.
BIRCH, 3 to 4 feet, transplanted, 30s. per 1000; 4 to 5 feet, do., 60s. per 1000.
BAYS, Sweet, transplanted, bushy, 2 to 3 feet, 50s. per 100.
HOLLIES, Green, transplanted, 2 feet, 50s. per 100.
LAURELS, Portugal, bushy, 3 feet, 12s. per dozen.
,, Common, bushy to the ground, 3 to 4 feet, 20s. per 100.
OAKS, Evergreen, in pots, 2 to 3 feet, 75s. per 100.
PRIVET, Common, 3 to 4 feet, 30s. per 1000.
PEARS, Pyramid, in best sorts, very strong, 21s. per dozen.
SCOTCH FIRS, good transplanted, 2 to 3 feet, 20s. per 1000.
THORNS, Standard, Double Pink, 5 to 6 feet, 100s. per 100.
,, ,, Paul's Double Scarlet, 5 to 6 feet, 100s. per 100.
,, Quick, transplanted, 10s., 15s., and 20s. per 1000.
,, ,, transplanted, extra strong, 35s. per 1000.
YEWS, English, 3 to 4 feet, feathered to the ground, perfect pyramids, 100s. per 100.
ROSES, Dwarf, in sorts, strong, 30s. per 100.
VINES, Venn's Black Muscat, strong short-jointed canes, 6 to 7 feet long, 15s. each.
,, Black Hamburgh, strong planting canes, 5s. each.

To the Trade and Others.

SURPLUS STOCK, CHEAP.

VINES, fruiting and planting; dwarf-trained PEACHES, NECTARINES, PLUMS, and CHERRIES; BLACK CURRANTS; LAURELS, Common, 3 to 6 feet; PRIVET, 3 to 5 feet; CHESTNUTS, Horse, 6 to 10 feet; Scarlet do., 6 to 8 feet; ELMS, 6 to 8 feet; MAPLES, Common, Norway, and Scarlet, 6 to 9 feet; POPLARS, Abele, Black Italian, and Balsam, 6 to 10 feet; Lombardy do., 6 to 12 feet.
The above are all clean and well grown. Price on application to
B. MALLER, The Nurseries, Lee and Lewisham, S.E.

Prize Seeds.

WRIGHT'S GROVE and GIANT CELERIES and CUCUMBERS.
WRIGHT'S GROVE RED and GROVE WHITE CELERIES were awarded the First Prizes at the South Kensington Show on November 10 and 11, 1875; see *Gardeners' Chronicle* (p. 627), November 13. These have been proved to possess all the good qualities required in a first-class Celery. Per ¼ oz. packets, 1s.
WRIGHT'S GIANT WHITE CELERY has a more robust habit and stronger growth than Grove White, combined with a fine flavour. It forms very solid hearts, which blanch easily. Heads have been grown weighing from 8 lb. to 10 lb. each. Per ⅛ oz. packets, 1s.
The following have secured supplies for the coming season :—

Hurst & Son, London.	C. & J. Lee, Hammersmith.
Dickson, Brown & Tait, Manchester.	Samuel Yates, Manchester.
	Laird & Sinclair, Dundee.
Sutton & Sons, Reading.	E. Holmes, Lichfield.
B. Crossland, Sheffield.	W. Smith & Son, Aberdeen.
S. Finney & Co., Newcastle.	

CUCUMBERS:—Wright's Wonder, fine White-spine, and Wright's Improved Black-spine. These will grow 24 to 30 inches long, without neck or handle, are very prolific and of mild good flavour; fine for exhibition. Berks Champion, Improved Sion House, Masters' Early Prolific, Munro's Duke of Edinburgh, Long Gun, Telegraph. Per packet, 1s.
Cash with orders will have prompt attention. Trade price on application.
WILLIAM WRIGHT, Seedsman, Retford, Notts.

JOSEPH SMITH, JUN., has to offer the following, at per 1000 :—
ALDER, 1 to 1½ foot, 10s.; 1½ to 2 feet, 12s.; 2 to 3 feet, 20s.; 3 to 4 feet, 28s. ASH, Mountain, 1½ to 2 feet, 15s.; 2 to 3 feet, 20s.; 3 to 4 feet, 25s.; 6 to 8 feet, 75s.; 8 to 10 feet, 110s.; 10 to 12 feet, 140s. BEECH, 1 to 1½ foot, 15s.; 1½ to 2 feet, 18s. BIRCH, 1 to 1½ foot, 15s.; 1½ to 2 feet, 18s. ELM, 1½ to 2 feet, 12s.; 5 to 8 feet, 45s. SPRUCE, 1½ to 2½ feet, 25s.; 2½ to 4 feet, 35s.; Scotch, 3 to 4 feet, 30s.; 3½ to 4½ feet, 35s. LARCH, 1 to 1½ foot, 15s. LIMES, 2 to 2½ feet, 45s.; 2 to 3 feet, 55s.; 3 to 4 feet, 75s.; 4 to 5 feet, 95s. MAPLE, Norway, 4 to 5 feet, 40s.; 5 to 6 feet, 55s.; 6 to 8 feet, 75s. OAKS, 2 to 3½ feet, 28s.; 3½ to 5 feet, 40s.; 5 to 8 feet, 60s. PINUS AUSTRIACA, 1½ to 2 feet, 20s.; 2 to 2½ feet, 25s.; 2½ to 3½ feet, 30s.; 3 to 4 feet, 40s. POPLAR, Black Italian, 2 to 3 feet, 20s.; Ontario, 2 to 3 feet, 20s.; 3 to 4 feet, 35s.; 6 to 8 feet, 90s. PRIVET, Evergreen, 9 to 15 inches, 8s.; 1 to 1½ foot, 10s.; 1½ to 2 feet, 14s.; 2 to 2½ feet, 15s.; 2 to 3 feet, 17s. QUICK, 2-yr., transplanted, 8s.; 3-yr., 10s.; 4-yr., 12s. SYCAMORE, 4 to 6 feet, 30s.; 5 to 7 feet, 35s. WILLOWS, of sorts. LAUREL, Common, 9 to 12 inches, 25s.; 1 to 1½ foot, 35s. COTONEASTER MICROPHYLLA, 1 to 1½ foot, 70s.; 1½ to 2 feet, 90s.; do. SIMONDSII, 2 to 3 feet, 50s.; 3 to 4 feet, 80s. RHODODENDRONS, &c.
CATALOGUE of General Stock sent on application.
Moor Edge Nurseries, Tansley, near Matlock, Derbyshire.

WITLOEF CHICORY.

AWARDED A FIRST-CLASS CERTIFICATE
BY THE
Fruit and Vegetable Committee of the Royal Horticultural Society, on the 19th inst., as a most desirable Winter Salad.

Price 1s. per Packet.

For Description and Mode of Culture see SEED CATALOGUE, which will be forwarded free on application.

JAMES VEITCH & SONS,
ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, S.W.

NOW READY,
NURSERY CATALOGUES FOR 1875-76.
WILL BE SENT POST FREE UPON APPLICATION.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),
EDINBURGH,
AND
54, BISHOPSGATE STREET WITHIN, LONDON, E.C.
BUSINESS ESTABLISHED, 1770.

SEEDS OF SUPERIOR QUALITY.

WM. PAUL & SON'S
ILLUSTRATED CATALOGUE OF SELECT VEGETABLE AND FLOWER SEEDS, &c.,
Is now ready, and will be forwarded, post free, on application.

Many sorts are home-grown, and all are selected with the utmost care from the most celebrated Stocks at home and abroad, in order to secure for their Customers the
BEST QUALITY THAT CAN BE OBTAINED.

IMPORTANT: Observe the Christian Name,

WM. PAUL & SON,
PAUL'S NURSERIES AND SEED WAREHOUSE, WALTHAM CROSS,
LONDON, N.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, January 31, at half-past 12 o'Clock precisely, an importation of the new and beautiful

ODONTOGLOSSUM CIRRHOSUM,

just received from South America in good condition. This superior Odontoglossum is a much more handsome species than the still rare O. naevium, somewhat resembling it in character, but infinitely superior. It produces fine strong branched spikes of blossom, each flower 3 to 4 inches across, white, marked and spotted in the way of O. naevium, exceedingly chaste and beautiful.

Also a large importation, in the finest possible condition, just received from Ecuador, of

ODONTOGLOSSUM HALLII,

many of them in huge masses, the largest and finest ever imported, with from twenty and thirty to forty bulbs each; this rare Odontoglossum is one of the most magnificent of the family.

At the same time will be sold an importation from South America of a new Oncidium—

ONCIDIUM PENTADACTYLON.

Plants of this Oncidium have not before reached this country alive.

Also a few plants from Ecuador of a MASDEVALLIA, most likely an entirely new species.

At the same time will also be sold an importation of plants, in good condition, just received from India, of the true and exceedingly rare white flowering

DENDROBIUM BARBATULUM;

and from Brazil a quantity of the attractive

SOPHRONITES GRANDIFLORA.

On view the morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

NEARLY
ONE HUNDRED GUINEAS,
INCLUDING
18 Gold, Silver and Bronze Medals,
WILL BE OFFERED BY
SUTTON & SONS,
During 1876, at the principal Meetings of the Royal Horticultural Society.

PARTICULARS ON APPLICATION TO
SUTTON & SONS,
THE QUEEN'S SEEDSMEN, READING.

THE SNOWFLAKE POTATO.
SUTTON & SONS

Having carefully tested this fine Potato in their Trial Grounds two years since, were among the first to recommend it as the best of all the American varieties, an opinion which has been confirmed by all practical gardeners. They have imported largely, and can offer fine tubers as follows:—

Price, per bush, 35s.; per peck, 10s. 6d.; per gal., 6s.

The value of planting imported tubers cannot be over-estimated, and the following extract from the *Gardeners' Chronicle*, January 8, 1876, is worthy of attention:—"American Potatos rapidly degenerate after importation to this country. Newly imported seed produces wonderful crops."

Descriptive List of other varieties gratis and post-free.

SUTTON & SONS,
THE QUEEN'S SEEDSMEN, READING.

SUTTONS'
POTATOS FOR PLANTING

SUTTONS' DESCRIPTIVE LIST
OF THE BEST
English and American Seed Potatos
Is now ready, and may be had gratis and post-free.

SUTTON & SONS,
THE QUEEN'S SEEDSMEN, READING.

Cooling's Matchless Broccoli.

GEORGE COOLING, NURSERYMAN and SEEDSMAN, Bath, has to offer his usual supply of carefully saved SEED of this unequalled variety of SPRING BROCCOLI, and will be glad to quote price of the same to the Trade. Retail price, per packet, 1s. 6d.

DR. MACLEAN PEA.

"I cannot withhold my meed of approval of Mr Turner for not hurriedly sending out his new Pea, "Dr. Maclean," but reserving it until his stock has become sufficient to distribute it at a reasonable price. I do not speak without knowledge of this variety when I say it is one of the most important acquisitions of recent years."—*Journal of Horticulture*, Jan. 13, 1876.

"There does not remain room to doubt that this is the finest Pea in the world."—*The Garden Oracle*, January, 1876.

CHARLES TURNER is now executing orders for this fine Pea, 7s. 6d. per quart, 4s. per pint; for full description see SEED CATALOGUE, now ready, and which may be had free on application.

The Royal Nurseries, Slough.

Special Offer to the Trade

ENGLISH and AMERICAN SEED POTATOS—Alpha, by stone or cwt.

Compton's Surprise, King of the Earlies, Nonsuch, Acme, Early Gem, Mona's Pride Ashtop, Rivers' Royal Ashtop, Veitch's Ashtop and Fortyfolds, by cwt. or sack of 16 stones.

Snowflake, Eureka, Climax, Extra Early Vermont, Late Rose, Brownell's Beauty, Bresee's Prolific, Early Goodrich, Lapstone Kidney, Paterson's Victoria and Hundredfold Fluke, by sack or ton.

Early Rose, Myatt's Prolific Kidney, Red-skinned Flourball, and Regents, by sack, ton, or five tons.

Price Lists on receipt of Trade Card.

CHRISTMAS QUINCEY, Seed and Potato Merchant, Peterborough.

GLOXINIA CRASSIFOLIA GRANDIFLORA.

Magnificent strain, quite distinct. The leaves, which are very broad and fleshy, recurve so as to almost cover the pot; the flowers are much larger than in the old sorts, and of very brilliant shades of colour, and fine form. By sowing now on a gentle hotbed they may be had in bloom in autumn, and seedling plants always yield much the finest blooms. Erecta and horizontalis, separate or mixed.

Per packet, 1s. and 2s. 6d., stamps or Post Office Order.

Seed CATALOGUE, sent free by post.

JAMES TYNAN, 68, Great George Street, Liverpool.

RHODODENDRONS.

FINE NAMED LEADING KINDS, 1½ to 3½ feet, from £7 10s. to £10 10s. per 100.

HYBRID SEEDLINGS, leading kinds, 1½ to 3½ feet, from 50s. to 75s. per 100.

ANDROMEDA FLORIBUNDA, 1 to 2 feet, from 50s. to 60s. per 100.

KALMIA LATIFOLIA, 1 to 2 feet, from 30s. to 60s. per 100.

AZALEA PONTICA, 1 to 2 feet, from 60s. to 75s. per 100.

All the above are very fine bushy, well grown plants, and are offered very cheap to effect a clearance.

CHARLES NOBLE, BAGSHOT.

HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,

KNAP HILL NURSERY, WOKING, SURREY.

JOHN CATTELL

BEGS TO ANNOUNCE THAT HIS

ILLUSTRATED CATALOGUE

OF

KITCHEN GARDEN AND FLOWER SEEDS,

Including a Choice Selection of the latest Novelties for 1876,

Is now ready, and will be forwarded gratis and post-free on application.

NURSERY and SEED ESTABLISHMENT,

WESTERHAM, KENT.

FRANCIS & ARTHUR DICKSON & SONS.

106 Eastgate St. & The Upton Nurseries CHESTER.

Illustrated Catalogue of Vegetable & Flower Seeds,

Post free on Application.

Quality unsurpassed.

B. S. WILLIAMS'

CHOICE

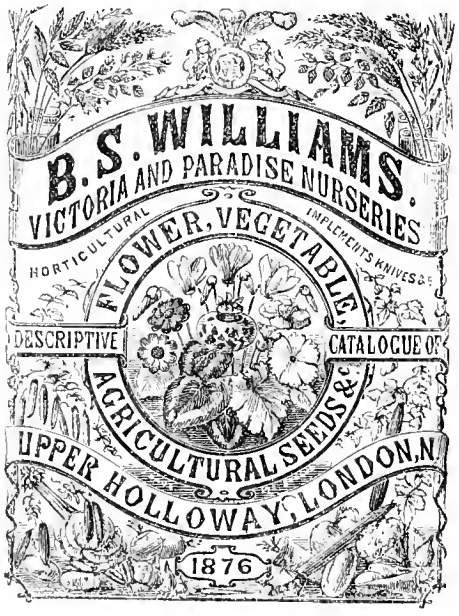
FLOWER AND VEGETABLE

Seeds for 1876.

	Per Packet.—s.	d.
BALSAM, Williams' Superb Strain .. .. 2s. 6d. and	1	6
BEGONIA FROEBELII (new).—This new and distinct species will prove one of the finest scarlet bedding plants in cultivation—few, if any, rivalling it for its brilliancy and continuation of bloom. It was awarded a First-class Certificate by the Royal Horticultural Society, also a Gold Medal at the International Exhibition, Cologne, August, 1875, as the best new flowering plant not in commerce	2	6
CYCLAMEN PERSICUM GIGANTEUM.—This is a great improvement on the old type, having very broad, beautifully-mottled coriaceous leaves; the flowers are shown well above the foliage, each flower measuring from 2 to 2½ inches in length; pure white, with a fine bold violet-purple eye ..	5	0
CYCLAMEN PERSICUM, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
CELOSIA PYRAMIDALIS PLUMOSA	1	6
CALCEOLARIA, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
CINERARIA, Weatherill's Extra Choice Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
GLOXINIA, Finest Drooping Varieties	1	6
,, Finest Erect Varieties	1	6
PRIMULA, Williams' Superb Strain, Red, White, or Mixed .. .. .. 5s., 3s. 6d., 2s. 6d., and	1	6
PYRETHRUM GOLDEN GEM..	1	0
SOLANUM, Williams' Improved Hybrids	1	6
STOCK, Williams' Improved Giant Scarlet Brompton ..	1	6
WALLFLOWER, Harbinger, Autumn and Winter flowering	1	0

Illustrated Seed Catalogue for 1876

NOW READY.



Gratis and post-free to all applicants.

B. S. W. begs to intimate that in the event of any of his Customers not receiving this CATALOGUE, if they will communicate with him a Copy will be sent.

CHOICE VEGETABLE SEEDS.

	Per Packet.—s.	d.
BEANS, Williams' Early Prolific Dwarf French, in sealed half-pints	1	6
BRUSSELS SPROUTS, Welch's Giant, one of the finest in cultivation	1	0
CUCUMBER, Tender and True	2	6
,, Osmaston Manor (new), one of the Finest Varieties, either for Summer or Winter use; 26 to 32 inches long, very prolific	2	6
MELON, Osmaston Manor Hybrid (new), a splendid Green-fleshed Variety, beautifully netted, globular in form, and of delicious flavour	2	6
ONION, Williams' Magnum Bonum, the heaviest cropping and longest keeping Onion in cultivation ..	1	6
PEA, Williams' Emperor of the Marrows .. per quart,	2	6

VICTORIA AND PARADISE NURSERIES,

Upper Holloway, London, N.

EDWARD TAYLOR, NURSERYMAN, Malton, Yorkshire, offers as under:—

GOOSEBERRIES, very fine, in 100 choice varieties, my selection, 80s. per 1000.

CURRANTS, Red and Black, strong, 80s. per 1000.

APRICOTS, Dwarf-trained, very fine, 24s. per dozen.

TRITOMA UVARIA, 4s. per dozen, 20s. per 100.

GRANDIFLORA, 4s. per dozen, 20s. per 100.

PAMPAS GRASS, strong, in pots, 25s. per 100.

LARCH FIRS, transplanted, 1 to 1½ and 1½ to 2 feet.

Priced CATALOGUES gratis on application.

EWING AND CO.'S TRADE LIST, also TRADE and RETAIL LISTS of NEW ROSES for 1876, CLEMATIS, &c., are now ready. 10,000 GOOSEBERRIES, 6000 NUTS, strong, fine, and cheap; also ELMS, LIMES, CHESTNUTS, and other TREES for AVENUES, 9 to 20 feet, extra fine. LADY HENNIKER APPLE, 3s. 6d. and 7s. 6d. each. EWING'S MILDEW COMPOSITION, 1s. 6d. and 3s. per bottle.

Royal Norfolk Nurseries, EATON, near Norwich.

THE KNAP HILL CYPRESS,

Cupressus Lawsoniana erecta viridis.

ANTHONY WATERER

Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices:—

3 feet high, 2½ feet in circumference, 30s. per doz.
4 feet high, 3 to 4 feet do., 42s. to 60s. per doz.
5 feet high, 4, 5 and 6 ft. do., 10s. 6d., 15s. to 21s. each.
6 and 7 feet high, 6 to 7 and 8 ft. do., 21s. to 31s. 6d. each.

No cuttings have been taken from the plants here referred to, which are simply perfect in growth and splendidly rooted.

KNAP HILL NURSERY, WOKING, SURREY.

NEW PEAS

FOR THE PRESENT SEASON.

KNIGHT'S NEW PEA, "THE STAR OF INDIA."

A fine new late wrinkled marrow Pea, growing to the height of about 3 feet, with fine long well-filled pods, containing Peas of a delicious flavour. It keeps on the bloom much longer than most other Peas of the same class, and will be found a desirable acquisition for exhibition and market gardening purposes.

Per quart, 5s.; per pint, 3s.

GRAYSON'S "EAST ANGLIAN."

A new and distinct early dwarf wrinkled marrow, of superior quality, large size, and great productiveness, coming in for use a week earlier than "Champion of England." The plants are of robust and branching habit, the pods broad and well filled. It has been spoken of very highly by numerous Gentlemen's Gardeners, as well as by large Growers for Market, to whom it was sent for trial last season. Height, 2 feet.

Per quart, 2s. 6d.; per pint, 1s. 6d.

DUKE OF CONNAUGHT (Knight's).

This fine new Pea is of branching habit, about 3 feet high, very prolific and bearing large curved pods, containing seven to eleven Peas, which are of excellent flavour; useful for second and general crop, also for late sowing, as it is never affected by mildew. A fine exhibition and market Pea.

Per quart, 2s. 6d.; per pint, 1s. 6d.

Prices to the Trade on application.

NUTTING & SONS,

SEED WAREHOUSES, 60, BARBICAN, London, E.C.

Vegetable & Flower Seeds
Seed Potatos, Garden Tools &c
Superior quality, Carriage free
Discriptive Priced list post free,
James Dickson & Sons
"Newton" Nurseries and
108, Eastgate Street,
Chester.

To the Trade

ISAAC DAVIES, NURSERYMAN, Ormskirk, Lancashire, can supply CUPRESSUS LAWSONIANA, 9 feet, 30s.; 6 feet, 12s.; 5 feet, 9s.; and 4 feet, 6s. per dozen, transplanted last April. CEDRUS ATLANTICA, 7 feet, 30s.; and 6 feet, 30s. per dozen. SKIMMIA JAPONICA, 1 foot, with berries, 6s. per dozen; 9 inches, 21s. per 100. VIRGINIAN CREEPERS, strong extra transplanted, 16s. per 100. CLIMBING ROSES, of sorts, fine plants, 4s. 6d. per dozen. DAPHNE CNEORUM, fine bushes, 6s. per dozen, ditto MAJOR, ditto, 7s. per dozen. INDIAN AZALEAS, good plants, 9s. per dozen; large flowering plants, 12s. to 18s. p. doz

W. AND J. BROWN have the following to offer

LAURELS, common, from 100 to 1000, 4 to 5 feet, very strong, 40s. to 50s. per 100.
YEWS, English, 50 to 300 fine bushy, 4 to 5 feet, 18s. to 24s. per dozen.
AUCUBA JAPONICA, 50 to 200 fine bushy, 2½ feet, 18s. to 21s. per dozen.
PEACHES and NECTARINES, dwarf, 2-yr., trained, 21s. to 24s. per dozen.
PLUMS, Victoria, dwarf, 3-yr, trained, 18s. to 21s. per dozen
Samples can be had at the above prices.
Stamford and Oakham Nurseries.

DAVIS'S PRIZE JERSEY SHALLOT, grown from seed, for exhibition and culinary use: large—10 to 12 inches in circumference—handsome, and very mild in flavour. Stock very limited this season; 1s. per packet. Agents, Messrs. HURST & SON, 6, Leadenhall Street, London, E.C.
VIOLETS, Victoria Regina, King and Queen doubles, 4s. per dozen.
ASPARAGUS (Connover's Colossal), and SEAKALE roots.
B. R. DAVIS, Seed Warehouse, Yeovil, Somerset.

JOSEPH SMITH, SEN., Tansley and Scotland Nurseries, near Matlock, Derbyshire, has for Sale:—
RHODODENDRON PONTICUM, 4-yr. old seedlings, not grown on bog, but on heath soil, with fine roots; stiff healthy plants, 3 to 4 inches high, 5s per 1000. Also Hybrid Catawbiense, named sorts, 7s. 6d. per 1000; with transplanted, from 1 to 1½ foot up to 3 and 4 feet, at very low prices, which can be had on application.
OAKS, large quantity, 3 to 4 and 4 to 5 feet.
With a GENERAL NURSERY STOCK. Prices on application.

Abies excelsa aurea (the Golden Spruce).

MESSRS. J. AND C. LEE beg to announce that they now intend to send out this magnificent tree. When planted in the full sunlight the whole tree is suffused with the richest gold. First-class Certificate from the Floral Committee of the Royal Horticultural Society. Well-established plants, 21s. each. A few of extra sizes, 31s. 6d. and 42s. each. The usual allowance to the Trade.
Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

The New Japan Apple.

PYRUS MAULEI, is now distributing, at 21s., 15s., and 10s. 6d. each. It is as hardy as the common Apple, blossoms at the same time; the flowers are of a vivid orange-scarlet, fruit of a bright transparent lemon colour, very fragrant, about the size of the Golden Pippin Apple, which is produced in the greatest profusion.
The jam of this season has been tasted by some of the best judges and connoisseurs, and pronounced exquisite, and perhaps superior to any English or foreign fruit.
W. MAULE AND SONS, The Nurseries, Bristol.

CHOICE SEEDS, &c.—

CUCUMBER, Beauty of St. Albans, the best of the Telegraph section, 1s. 6d. per packet.
" Telegraph, true stock, 1s. per packet.
" Duke of Edinburgh (Daniels), 1s. per packet.
SOLANUM CAPSICASTRUM, hybrids, from plants selected from the three best stocks in Covent Garden, 6d. and 1s. per packet.
LOBELIA PUMILA MAGNIFICA, 1s. per packet.
CELOSIA PYRAMIDALIS, saved from Mr. R. S. Yates' fine strain, 6d. and 1s. per packet.
LOBELIA PUMILA MAGNIFICA, seedling plants, 5s. per 100; plants from cuttings, 12s. 6d. per 100.
All orders prepaid
J. BESTER, White Hart Lane, Tottenham, N.

To the Trade.

WM. WOOD AND SON have much pleasure in offering magnificent dwarf-trained trees of the following—
PEACHES, NECTARINES, and APRICOTS.
The Firm have long been celebrated for the excellence of their trained Fruit Trees. Also very fine Dwarf Maiden Peaches, Nectarines, and Apricots, with well ripened wood.
CATALOGUES on application.
WM. WOOD AND SON, The Nurseries, Maresfield, near Uckfield, Sussex.

New and Genuine Seeds Only.

Now ready, gratis and post-free,
BRUNNING AND CO.'s New Illustrated and DESCRIPTIVE CATALOGUE of the above for the present season, containing a selection of the choicest novelties, together with the most approved older varieties, profusely Illustrated, and contains a splendid Coloured Plate representing a group of choice Hybrid Gladioli, for the growth of which their Nurseries are noted. Forwarded post-free to all applicants.
ISAAC BRUNNING AND CO., The Yarmouth Seed Establishment, 1, Market Place, Great Yarmouth.

SNOWFLAKE POTATO.—Having grown and imported largely of this splendid new variety, we can offer FINE ENGLISH-GROWN SEED, price 6d. per lb.; 6s. per peck of 14 lb.; 21s. per bushel of 56 lb. Much cheaper by the sack or ton.
FINE IMPORTED TUBERS, same price. Orders of 21s. and upwards carriage-paid
P. M'Kinlay, Esq., Beckenham, a well-known authority, writing of this Potato in the *Gardeners' Magazine*, Jan 15, last, says:—"My experience with American varieties has been somewhat extensive, and I find that they generally improve as they become acclimatised. . . . I have no doubt Snowflake will improve in quality, and will become one of the best in cultivation."
DANIELS BROTHERS, Seed Growers, Norwich.

DICK RADCLYFFE & CO.,

SEED MERCHANTS,

GARDEN FURNISHERS

And Horticultural Decorators.

PRIZE MEDAL SEEDS.

Complete Collections of Vegetable Seeds.

No. 1.—Suitable for a very Large Garden	..	£3	3 0
No. 2.—Suitable for a Large Garden	..	2	2 0
No. 3.—Suitable for a Medium-sized Garden	..	1	1 0
No. 4.—Suitable for a Small Garden	..	0	10 6

Carriage free as per terms of Catalogue.

Choice Collections of Flower Seeds.

Containing only popular kinds of easy growth, which will make a pretty and effective show during the summer months.
5s., 10s. 6d., 21s., 31s. 6d. and 42s. each.
All Flower Seeds sent post-free.

For full Detailed List of Collections, see D. R. & Co.'s Illustrated Flower, Vegetable, Agricultural and Garden Requisite CATALOGUE, sent gratis and post free on application to

DICK RADCLYFFE & CO.,
128 and 129, HIGH HOLBORN, LONDON.

Extra Strong Vines in Pots.

DICKSON, BROWN, AND TAIT, SEED MERCHANTS, 43 and 45, Corporation Street, Manchester, can supply several hundred extra strong, well-ripened, short-jointed CANES, for Fruiting in pots or Planting, of the following varieties:—Black Alicante, Bowood Muscat, Buckland Sweetwater, Foster's Seedling, Gros Colman, Black Hamburgh, Lady Downe's, Madresfield Court, Mrs. Pince, Muscat of Alexandria, &c. Prices on application.

CUCUMBER and MELON SEED

DUKE OF EDINBURGH CUCUMBER (Daniels'), saved from seed had direct from the Raiser. Per packet, 1s.
TELEGRAPH CUCUMBER (true), per packet, 1s.
DUKE OF EDINBURGH MELON (Suttons'), new Scarlet-flesh. Per packet, 1s
LITTLE HEATH (Munro's) Per packet, 1s.
The four varieties for 3s. Stamps with orders.
WILLIAM BRYANT, The Nursery, Rugby.

Roses on the Manetti Stock, Suitable for any Soil.

GEORGE GRAY AND SON offer, of their usual fine quality, 500 varieties, including all the best sorts known, at 6s. to 9s. per dozen, 50s. to 65s. per 100. The Manetti stock is acknowledged the best for dwarf Roses, producing no suckers from the root, which are so troublesome from the Brier when established. Our dwarf Roses are budded very low, and are finely grown. CATALOGUES free.
Nurseries, Chertsey, Surrey.

Vines, Vines—Dwarf Roses.

PLANTING and FRUITING CANES of Black Hamburgh, Black Alicante, Lady Downe's, Muscat of Alexandria, White Lady Downe's, Madresfield Court, Gros Colman, Mrs. Pince, Trentham Black, Buckland Sweetwater, Foster's Seedling, Dr. Hogg, Muscat Hamburgh, Royal Muscadine, and West's St. Peter's, 2s. 6d. to 5s. each; Waltham Cross, 5s. to 7s. 6d. each; Pearson's Golden Queen, 21s. to 31s 6d. each.
DWARF ROSES, extra strong, 6s. per dozen.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

Special Offer.

WILLIAM IRELAND, Pilton Nurseries, Barnstaple, has to offer the following:—

SPRUCE, 1½ to 2 feet, twice transplanted, 30s. per 1000.
THORN, Quick, 1½ to 2 feet, in drills, 8s. per 1000.
" " 4-yr., transplanted, 2 to 3 feet, 15s. per 1000.
ABIES DOUGLASII, 4 to 6 feet, transplanted last April, 24s. per dozen.
ARBOR-VITÆ, American, 6 to 8 feet, 50s. per 100.
AUCUBA JAPONICA, 2 to 3 feet, 40s. per 100.
BOX, Tree, in variety, 2½ to 3 feet, 30s. per 100.
COTONEASTER SIMONDSII, 2 ft., well rooted, 10s. per 100.
LAUREL, Portugal, 3 feet, 50s. per 100.
" Common, 3 feet, fine, 20s. per 100.
LABURNUMS, 4 to 6 feet stems, with fine heads, 12s. per doz.
LAURUSTINUS, 2 to 3 feet, fine, 25s per 100.
LIGUSTRUM OVALIFOLIUM, bushy plants, 2 to 3 feet, 30s. per 100.
PERNETTYA MUCRONATA and SPECIOSA, fine bushy plants, 42s. per 100. [per dozen.
PINUS INSIGNIS, 3 to 4 feet, transplanted last April, 24s.
ULEX HIBERNICA, fine plants, 1½ to 2 feet, 50s. per 100.
YEW, English, bushy, transplanted last spring, 3 to 4 feet, 50s. per 100.
CHERRIES, Standard, Black varieties, fine heads, 18s. per doz.
RHODODENDRONS, Standard, finest named varieties, stems 4 to 5 feet, fine heads, 7s 6d. each.
DECIDUOUS FLOWERING SHRUBS, in great variety, large plants, 6s. per dozen.
The above, having been frequently transplanted, are fine plants and well rooted.
Pilton Nurseries, Barnstaple.

To the Trade.

SPECIAL OFFER of SURPLUS STOCK of FOREST and ORNAMENTAL TREES, SHRUBS, &c.; all transplanted, clean, and well grown.

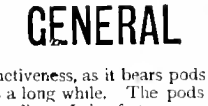
LIMES, fine Standards, 50s. to 60s. per 100.
MOUNTAIN ASH, fine Standards, 30s. per 100.
CHESTNUTS, Horse, fine Standards, 40s to 50s. per 100.
MAPLE, Norway, fine Standards, 30s. per 100.
OAKS, English, fine Standards, 50s to 80s. per 100.
THORNS, Paul's Crimson and Double Pink, feathered trees, 30s per 100.
ALDER, 2 to 3 feet, 12s. 6d. per 1000.
HORNBEAM, 3 to 4 feet, 20s. per 1000.
LARCH FIR, 1 to 1½ foot, 10s. per 1000.
SNOWBERRIES, 3 to 4 feet, 20s. per 1000. [per 1000.
PRIVET, best Evergreen, 2 to 3 and 3 to 4 feet, 10s. to 15s.
PINES, Austrian, 2 to 3 feet, 40s. per 1000.
SPRUCE FIR, 1 to 1½ foot, 14s. per 1000.
" " 2-yr. bedded, 6s. per 1000.
BLACKTHORN, fine transplanted, 10s. to 15s. per 1000.
WHITETHORN QUICKS, 6s., 8s., and 10s. per 1000.
MAHONIA AQUIFOLIA, 6 to 12 inches, 12s. per 1000; 12 to 18 inches, 18s. per 1000.
LAURELS, 1 to 2 feet, 40s. per 1000.
RED CEDARS, 2 to 3 feet, 20s. per 100.
CEDRUS DEODARA, 1 to 1½ foot, very fine, 50s. per 100; 1½ to 2 feet, very fine, 60s. per 100. 2 to 2½ feet, very fine, 100s. per 100.
LAURELS, Portugal, 1 to 1½ foot, 80s. per 1000; 1½ to 2 feet, 20s. per 100, £7 10s. per 1000.
HANDSWORTH BOX, 9 to 15 inches, 60s. per 1000; 1½ to 2 feet, 15s. per 100.
GOOSEBERRIES, 10s. per 100.
LIST of General Nursery Stock on application to
THOMAS PERKINS, 42, Drapery, Northampton.

PEAT.—A few hundred tons of superior PEAT at 17s. a ton, Cash; delivered at the Farnborough Station on the South-Western or South-Eastern Railways.
W. TARRY, The Golden Farmer, Bagshot.

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per truck.
BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, New Holland Plants, 17s. per ton. [ton.
BROWN and BLACK PEAT, for general purposes, 17s. per
Delivered on rail at Blackwater (South-Eastern Railway), or Farnborough (South-Western Railway), by the truck-load. Sample sacks, 5s. 6d. each.
FRESH SPHAGNUM, 10s. 6d. per sack.
WALKER AND CO., Farnborough Station, Hants,

CULVERWELL'S PROLIFIC MARROW PEA.



JAMES VEITCH & SONS

DESIRE TO DIRECT ATTENTION TO THIS VERY

SUPERIOR PEA FOR GENERAL AND LATE CROPS.

It is one of the finest Peas grown for productiveness, as it bears pods from within a short distance of the ground to the top of the haulm, and thus the crop lasts a long while. The pods are straight, pale green, and contain from five to six exceedingly large Peas of excellent quality. It is of strong and robust growth, from 5 to 6 feet in height, and equally valuable as a general crop or as a late variety.

We have letters from Mr. WESTCOTT, Raby Castle, Darlington, and Mr. SAUL, Stourton Park, Knaresborough (to whom it was sent for trial), speaking of its wonderful quality. The former says—"There is not the slightest doubt in my mind of its being the greatest acquisition among Peas that we have had for many years past, and truly deserving the term 'new and distinct,' the flavour quite equalling, and if possible surpassing, the world-wide-famed variety, Veitch's Perfection." Mr. Saul speaks of it as follows—"It is a most deliciously flavoured Pea, and its great merits, when known, must soon cause it to become a standard variety of the very first class."

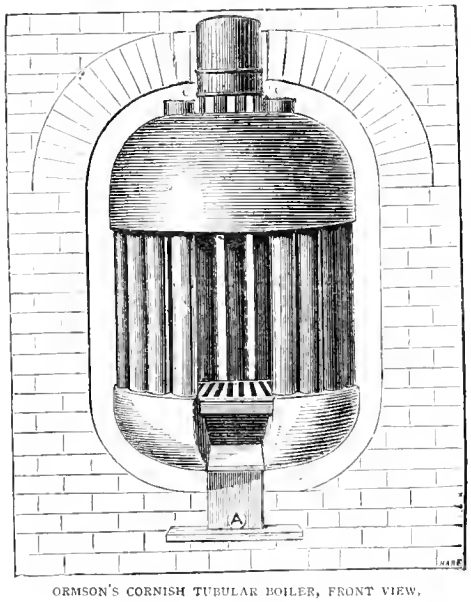
The ripe seed is very large, bright green, wrinkled, and very distinct in appearance.

Price, 2s. 6d. per quart.

Seed Catalogue, containing all the most desirable novelties of the season, now published, and sent post free on application.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON, S.W.

ORMSON'S
PATENT UPRIGHT TUBULAR CORNISH BOILER.



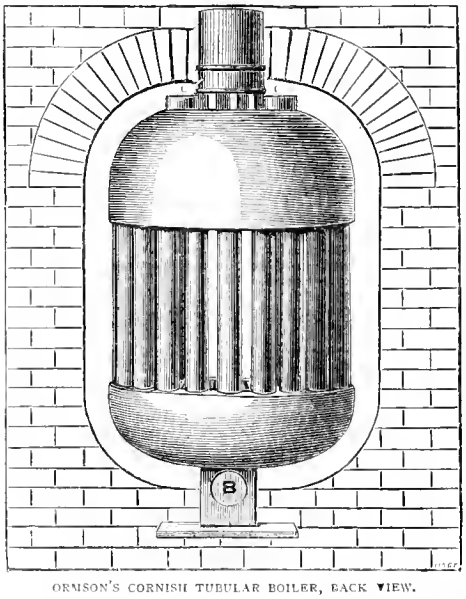
ORMSON'S CORNISH TUBULAR BOILER, FRONT VIEW.

NOW READY FOR SENDING OUT.

A. Sediment Pipe.

B. Return Pipe.

C C. Flow Pipes.



ORMSON'S CORNISH TUBULAR BOILER, BACK VIEW.

EXTRACTS FROM OPINIONS OF THE PRESS.

From the "Gardeners' Chronicle" of October 30, 1875.

"The Boiler, of which a sketch is given, may certainly be described as a new form of Horticultural Boiler, and we think we may safely state that it appears to combine all the elements of a successful one.

"The New Boiler is a combination of the Tubular and Cornish Boilers, designed to be used in a vertical position. The heat strikes against the dome-like top with great force, and is then returned, instead of rushing away up the chimney, which Mr. ORMSON contends is a fault in all other Tubular Boilers. It seems scarcely possible to make better use of the direct heat drawn from the fuel. This applies to the efficiency of the New Boiler: another point to which we will now refer affects its safety and durability.

"It is sufficiently well-known that most, if not all the disasters which happen to Boilers—most, if not all the cracking and bursting—is due to the deposit of sediment at the bottom of the Boiler, which either causes the metal to burn through, or to expand unequally, and so crack. Now as regards the cleansing of its interior *this Boiler is perfect*. Standing vertically, as it does, all impurities, if any, in the water must sink to the bottom, and all serious incrustations must do the same; from the upper dome they must pass down the tubes to the lower inverted dome, where from the concavity they must pass to the centre, and here an outlet is provided. The sediment must of necessity pass down the leg at the base of the Boiler, and into this leg a pipe is inserted at A, with a tap attached, and communicating with a drain in the stokehole; and in this way, by simply turning the tap, the whole of the sediment can be cleared out, and the Boiler left perfectly clean. The circulation of the heated water is also fully provided for—the flow C C, being at the extreme top, and the water, after traversing the pipes, re-entering the Boiler at the extreme bottom, the return pipe being shown at B. The Boiler can be fed either from the top or bottom as may be preferred, provision being made for either plan.

"The facility afforded in this Boiler for removing sediment, and the great surface of water-space exposed to the direct action of the flames are very marked improvements, the former especially showing a decided advance upon all others which have been described. Indeed there seems no reason to doubt that it will prove to be not only a most powerful Boiler, but also a quick-heating and economical one."

From the "Florist and Pomologist," January Number, 1876.

"Hot-water Boilers may be classed amongst garden necessaries, and hence the advantage of those which combine the various elements of efficiency—which appears to be the case with Ormson's Patent Upright Tubular Cornish Boiler. This new Boiler, which is a combination of the Tubular and Cornish Boilers, and is designed to be used in a vertical position, consists of two semi-circular or dome-shaped ends, connected by short lengths of pipe, and when so connected it stands on a stout iron leg with a broad foot, as shown in the annexed front view, the furnace-bars which drop in on a level with the upper edge of the lower dome-shaped piece being movable, and the hollow beneath serving as an ash-pit. The fire strikes directly against the upper dome-shaped piece, by which the flames are beaten back and forced between the tubes so as to circulate about every portion of the Boiler. One of the merits claimed for this Boiler is that the heat strikes against the dome-like top with great force, and is then returned instead of rushing away up the chimney. Another recommendation of this Boiler is its safety and durability. Most of the disasters which happen to Boilers are due to the deposit of sediment at the bottom, and which either causes the metal to burn through or to expand unequally and crack. The facilities for cleansing this Boiler are perfect. An outlet is provided in the leg at the base of the Boiler into which a pipe is inserted at A with a tap attached, and communicating with a drain in the stokehole. Thus, by simply turning the tap, the whole of the sediment can be cleared out and the Boiler left perfectly clean. The circulation is also well provided for, the flow, C C, being at the extreme top, and the water, after traversing the pipes, re-entering the leg at the back, above the level of the sediment pipe. This Boiler can be fed either from the top or bottom as may be preferred. The facility it affords for removing sediment, and the direct action of the flames upon the water-space, appear to be features specially deserving of commendation."

PLEASE TO WRITE FOR ILLUSTRATED PRICED LISTS.

GOODS SUPPLIED TO ORDER TO THOSE WHO MAY WISH TO FIX THEIR OWN APPARATUS.

Estimates given for Heating, on the most improved and scientific principles, all descriptions of Buildings.

HOT-WATER PIPES, BOILERS AND CONNECTIONS AT WHOLESALE PRICES.

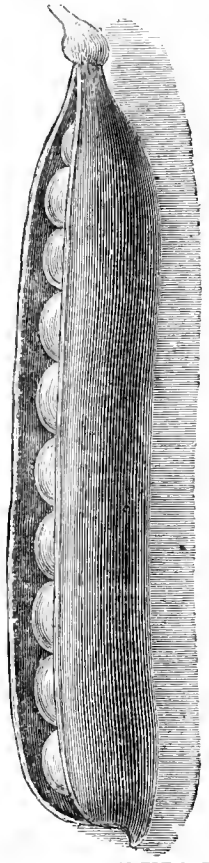
Plans and Estimates for Horticultural Buildings of every description, to suit any Garden, large or small, designed and constructed with strict regard to economy of price, good workmanship, durability of material, and practical adaptation to their various purposes.

HENRY ORMSON,
HORTICULTURAL BUILDER and HOT-WATER APPARATUS ENGINEER,
STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

THE BEST NEW PEA.

Carter's

COMMANDER-IN-CHIEF



—a very fine green wrinkled Marrow, of exquisite flavour, WITH MANY PODS CONTAINING TEN PEAS IN A POD.

Height, 4 feet.

During the past season the long pods of this variety, carrying a beautiful bloom, were to be observed in most of the collections of Peas which gained the Prizes offered by ourselves and others at the various Horticultural Shows.

"'Commander-in-Chief' and 'G. F. Wilson' are both Peas of great excellence."—R. GILBERT, *Burghley, in the "Garden," August* 14.

"'Commander-in-Chief,' a very prolific Pea, having large, well-filled pods of large Peas, FLAVOUR EXCELLENT."—*From* Mr. WILLIAM PATERSON, *Head Gardener to H. M. the Queen, Balmoral Castle, Nov.* 28.

"I am pleased to note 'Commander-in-Chief' as a variety of superior merit, and to be highly recommended."—*From* Mr. E. BENNETT, *late Gardener to the Marquis of Salisbury, Hatfield, Herts.*

Price, per quart, 3*s.* 6*d.*; *per Pint*, 2*s.*
(Sealed Packets.)

NEARLY
EIGHTY GUINEAS
AGAIN OFFERED IN CASH PRIZES BY
JAMES CARTER & CO.,
TO BE COMPETED FOR AT THE
Meetings of the Royal Horticultural Society.
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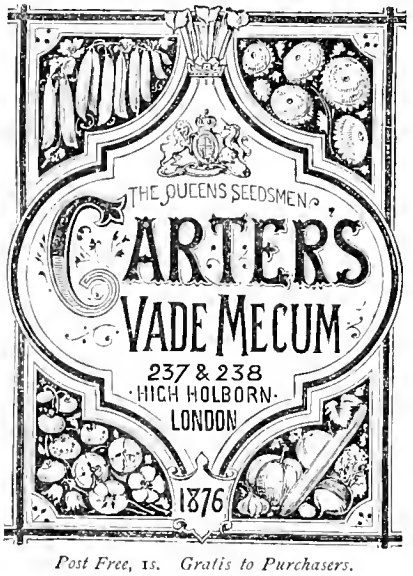

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THE QUEEN'S SEEDSMEN,
237 & 238, HIGH HOLBORN, LONDON, W.C.

SATURDAY, JANUARY 22, 1876.

THE NEW PLANTS OF 1875.

OUR summary of these, which will be found at p. 73 of our last week's issue, would be incomplete were we omit the few special classes of subjects briefly alluded to there in our closing remarks. We therefore now proceed to treat of these reserves, consisting of Palms, Orchids, Ferns, and Cycads.

PALMS.

These "princes of the vegetable world" claim precedence, but we have not many to notice, and these chiefly Fan Palms. Brahea filamentosa, the Fan Palm of Lower California, is a free-growing ornamental species, said to be more hardy than the generality of these plants, and remarkable for the marginal filaments borne by its leaves. Thrinax barbadensis is, as its name implies, a West Indian and a stove Palm, rather massive in growth; while Trithrinax brasiliensis is more slender and graceful in character, the flabelliform leaves being nearly orbicular in outline. From the United States of Colombia we have received Astrocaryum argenteum, a pinnate-leaved species, the silvery under-surface of whose leaves will contrast strongly with the dark-coloured spines of its leaf-stalks and costa.

ORCHIDS.

Next come the aristocracy of flowers, represented by the Orchids; and here we have quite a *levée*. Amongst them Phalænopsis leucorrhoda and P. casta are charming additions to their own select family, both being apparently natural hybrids, both inhabiting the Philippine Islands, and both having spotted leaves and white flowers flushed with purple. Several additions have been made to the genus Odontoglossum. The long-sought O. Warscewiczii of Costa Rica has been found, and proves to be a showy plant of the O. Roezlii type, with a purple spot at the base of each petal, and a horse-shoe like mark on the broad white lip. O. Roezlii album is a very chaste-looking plant, the large white freely-produced flowers without purple spots being very telling. The O. prænitens with many-flowered racemes of yellow maroon-spotted flowers in the way of O. triumphans; O. præstans, with yellowish flowers in the way of O. odoratum; O. ramosissimum, with showy panicles of white stellate flowers spotted in its different forms with deep violet, purple, or lilac; O. Murrellianum, thought to be a wild hybrid between O. Pescatorea and O. nævium; and O. compactum, a noble plant, long confounded with O. aureo-purpureum. All these being New Grenadan attest that the *ultima thule* of new Orchids has not yet been reached. Oncidium, an ancient genus which had been somewhat looked down on, has in some degree recovered its position: since O. Carderi produces large panicles of flowers said to equal those of O. superbiens, the anterior part of the yellow lip being described as pink. Dendrobium amœnum is a lovely plant, with long drooping stems covered with white purple-tipped flowers, sweet as Violets. The showy Pescatorea Dayana has given us some novel varieties, in candidula, with waxy-white flowers, the lip tinted with reddish-purple; and splendens, which has the lip entirely of a chocolate-purple. Another ancient group, now of less repute than formerly, has received some new recruits, which bring it again into prominence — Epidendrum paniculatum and E. Wallisii, the latter a new Grenadan plant, the former from Venezuela, Peru, and Bolivia. E. paniculatum has tall leafy stems, and huge crowded panicles of rose-coloured flowers having the lip lilac; while E. Wallisii has yellow, fragrant, purple-veined flowers, which are produced both in lateral and terminal racemes. Another fine Orchid is the Bornean Saccolabium Hendersonianum, whose dense spikes of light purple flowers have a white lip and spur; while in the Indian Vanda undulata we get a pretty and useful epiphyte which naturally resists a considerable degree of cold, and whose white flowers will prove very useful as a contrast with other Orchids. The smaller flowered gems of the Orchid race are this year being well represented by the rich yellow-flowered Masdevallia Davisii, a plant which in stature and ornamental qualities ranks on a par with M. Harryana; by M. amabilis lineata, which has orange-pink flowers striped with bright purple; by Pleurothallis fulgens, whose brilliant blossoms are of a bright cinnabar-red, with a sheen of greenish purple; by Restrepia Dayana, a lovely little gem, whose flowers consist of a various compound of violet, brown, and yellow colouring; and by Restrepia Reichenbachiana, whose minute flowers are canary-yellow with purple tips. We must not omit to mention the numerous forms of hybrid Cypripediums — all handsome acquisitions — which the Messrs. Veitch have exhibited for the first time during the past year.

FERNS.

These, the ever-graceful, ever-popular, come in as a refreshing foil to the brighter colours of many flowers, and are quite as useful in this way as the Parsley beds which some floral critics have so enthusiastically be-praised. We have several fine novelties to record, and claim the first place for Adiantum princeps, a large evergreen, spreading, stove Fern, of New Grenada, whose fronds are pendent, deltoid and quadripinnate, whose pinnules are pale greyish green, large, the terminal one cuneately flabellate, and whose sori are elongated and concavely reniform—a form like a gigantic tenerum. A. Seemanni, a noble, pinnate, Central American species, appears in gardens for the first time, although by misadventure its name has for some years done service applied to seedlings of A. Wilsoni, which came from the same country. Then there is a very curious form of Adiantum Capillus-Veneris, called Luddemannianum, with dichotomously forked stipes, and terminal rosettes of cristate pinnules, and which appears to be also known in the French gardens, whence it comes, as A. Capillus-Veneris cristatum. Again, in A. concinnum Flemingii we have a very handsome garden sport, remarkable for its density of growth, and forming a sturdy and exceedingly valuable decorative plant. In the New Grenadan Asplenium ferulaceum we have a medium-sized stove form, of symmetrical habit, having a short erect caudex, and a spreading head of elegant fronds, which are amongst the most finely divided yet known, being cut up into innumerable minute segments. The crested form of Woodwardia, W. radicans cristata, has all the noble and commanding aspect of the type, while the fronds are finely crested, both at the tips and along the tops of the pinnæ, so that as a hardy evergreen greenhouse Fern—almost, if not quite, hardy outdoors in favourable climates and positions; this will be well worth looking after. Polystichum lepidocaulon, a pinnate evergreen Fern from Japan, with the aspect of Cyrtomium, and running out into cord-like viviparous points, will be a really good addition to the list of hardy Ferns. Cibotium Menziesii and Sadleria cyatheoides are two very distinct and welcome acquisitions from the Sandwich Islands, both of tree-like habit—the former with large, broad, spreading tripinnate fronds: the latter with elegantly arching pinnate fronds, and closely

allied to the Blechnums. Lomaria dobroydensis, said to be from New South Wales, is a greenhouse evergreen Fern of remarkable elegance, the sterile fronds being regularly disposed around the erect caudex, and the fertile standing erect in the centre; the sterile fronds individually have something the aspect of those of Polypodium cambricum, being deeply bipinnatifid, while the segments of the fertile ones are also conspicuously toothed. St. Helena furnishes a noble-looking evergreen greenhouse species in the Polypodium or Phegopteris Dianæ, which is stout-growing and bold in habit, with broad-spreading fronds 3 to 4 feet long. Then from California we get another pretty little evergreen, or rather everglaucous, greenhouse species, the Platyloma Bridgesii, called by some Pellæa, which is quite dwarf in growth, with linear pinnate fronds, and six or eight pairs of roundish-ovate blunt pinnæ—a nice addition to the list of smaller-growing choice Ferns. Finally, from Java we have the very distinct and ornamental Platycerium Willinckii, figured at p. 302 of our third volume (n.s.), an epiphytal Fern with dimorphous fronds, the fertile ones very long, drooping, and much divided, soriferous at the tips of the lobes.

CYCADS.

In this category, Catakidozamia Hopei has been introduced from Queensland. The imported plants have an ovate trunk, clothed with thick scales, and pinnate leaves recurved towards the point, with crowded rigid linear-lanceolate leaflets, which are bluntish, with an apiculus, somewhat recurvo-falcate, and decurrent at the base. Cycas Normanbyana, from New South Wales, is another acquisition, of an ornamental character. Its leaves are pinnate, oblong-ovate, the segments numerous, contiguous, linear, 6 inches long and about a quarter of an inch wide, and very sharp-pointed. Two Zamias complete our selection, namely, Z. Lindeni, a stately plant, with a cylindrical trunk, and pinnate leaves 6 feet long, and with upwards of forty pairs of sessile glabrous elongate-lanceolate leaflets, 8 inches long, dentato-serrate on the upper half. Z. Wallisii, which is in the way of Z. Skinneri, has a short fleshy trunk, with a reddish thorny stalk, and a few large lanceolate plaited leaflets a foot long. The former is from Ecuador, the latter from New Grenada. *T. M.*

REPORT ON CELERIES,

GROWN FOR TRIAL BY THE FRUIT AND VEGETABLE COMMITTEE OF THE ROYAL HORTICULTURAL SOCIETY AT CHISWICK, 1874 5.

THE seed for this trial was presented by Messrs. Carter & Co., Messrs. Barr & Sugden, Messrs. Minier, Nash & Nash, Messrs. Harrison & Sons, Messrs. Osborn & Sons, Messrs. Stuart & Mein, Messrs. Veitch & Sons, Messrs. Vilmorin et Cie., Samuel Simpson, Esq., Mr. R. Dean, and Mr. A. Parsons.

There were forty-seven reputed varieties received, of which twenty-three were red and twenty-four white. These the committee, by the detection of numerous synonyms, reduced to twenty—viz., seven red varieties and thirteen white, which have been decided to be distinct.

The seed was sown early in March in heat, and the plants pricked-off and planted-out early in June in single trenches, and treated after the ordinary manner. The plants were frequently examined by the committee whilst growing, and again when fully grown, and a portion of each sort was left to test their capabilities of standing the winter.

The season of 1874 was a particularly favourable one for the growth of Celeries, so that the trial was a satisfactory one.

1. RED VARIETIES.

1. *Manchester Red* [synonyms, Laing's Mammoth, Radford's Pink, Sulham Prize Pink, Hooley's Conqueror Prize, True Manchester, and Giant Red].—Plant of strong and vigorous growth, attaining an average height of 3 feet 4 inches. Leaflets broad, green. Heads compact, average girth 12 inches. The outer leafstalks are moderately broad, slightly shaded with red. Heart very solid; the stalks broad, thick, and fleshy, blanching for about 12 inches. A very excellent sort, stands the winter well. This is the largest variety.

2. *Ivery's Nonsuch* [syns., Violet de Tours, Osborn's Select Red, London Market Red].—Plant of strong and vigorous growth and habit, average height 3 feet. The leaflets are broad, deep green, the pinnæ more widely situate than in other varieties. Heads compact, average girth 12 inches. The outer leafstalks flat, of a deep rosy red colour. Hearts very solid, blanching for about 13 inches. Stalks very solid, broad, thick, and crisp, of a fine nutty flavour. A very excellent sort, and one of the best to stand the winter.

3. *Kimberley's Red* [syns., Improved Solid Red, Stuart & Mein's Solid Red].—Plant of regular but somewhat spreading habit of growth. Height 2 feet 6 inches. Leaflets broad, deep green. Heads compact; average girth, 11 inches; the outer leaflets narrow, rounded, and slender, of a deep rosy red colour. Hearts very solid, blanching for about 12 inches; the stalks broad, thick, and crisp, of a fine nutty flavour.

4. *Carter's Incomparable Crimson* [syns., Carter's Incomparable Dwarf Crimson, Hood's Dwarf Red].—Plant of close compact growth. Height 2 feet 6 inches. Leaflets rather broad, pale green. Heads very compact; average girth, 11 inches. Outer leaflets narrow, deep rosy pink. Hearts very solid, blanching for about 11 inches; the stalks thick and fleshy, and of fine quality. This is the dwarfest red Celery, and a good hardy variety to stand the winter.

5. *Webster's No. 1* [syn., Webster's No. 4].—Plant of somewhat slender growth. Height 2 feet 10 inches. Leaflets broad, with short petioles, giving it a bushy compact appearance. Heads compact, average girth 10½ inches; outer leafstalks slender and narrow. Heart solid, blanching for about 12 inches. The stalks solid, thick, very crisp, and of good quality.

6. *Leicester Red* [syns., Major Clarke's Solid Red, Turnmoss Red, Ramsey's Solid Red].—Plant of erect compact growth, presenting a very uniform appearance when growing. Height, 3 feet. Leaflets rather small, deeply serrated, of a shining green colour, with a sort of silvery shade. Heads very round and compact; average girth, 12 inches. The outer leafstalks are rather narrow or rounded, of a clear rosy pink colour. Hearts very solid, blanching well for about 12 inches, the inner stalks broad and thick, very crisp, and of a fine nutty flavour. One peculiarity of this Celery is that of the core rising about 2 inches in the heart, as if it were to run to seed. This core portion is by many considered the best part. This variety, from its close compact growth, blanches easily, and is the best Celery for autumn or early summer use, but it does not stand the winter so well.

7. *Wright's Improved Grove Red.*—Plant of the same appearance as Leicester Red, but somewhat dwarfer. The heads are also larger, being 18 inches in circumference. Hearts large, very solid, and good. This is a very excellent sort.

2. WHITE VARIETIES.

8. *Grove White.*—Plant of strong and robust growth. Height, 2 feet 9 inches. This is an exact counterpart of the Grove Red, but white, and possessed of the same excellent qualities. Does not stand the winter so well as other sorts.

9. *Incomparable Dwarf White* [syns., Plein Blanc Court Hatif, Sandringham, Dean's Compact White].—Plant of very dwarf and compact growth. Height, about 24 inches. Leaflets small, pale green. Heads very compact, average girth about 10 inches. Outer leafstalks broad and deeply ribbed. Hearts solid, blanching about 10 inches, and of a pure white. The stalks broad, thick, fleshy, crisp, and of fine quality. This is one of the best sorts, its close dwarf growth renders it easy to blanch with remarkably little earthing up. It is good for early use, and also stands the winter well.

10. *Plein Blanc.*—Plant of dwarf compact habit. Height, 24 inches. This is much of the same character as the preceding, but smaller and inferior. It is useful for an early supply.

11. *A Couper.*—Plant small, height about 24 inches. Leaflets small. Heads small, outer leafstalks very narrow. This is not of much use, except for very early work, the small heart blanching very quickly. It soon runs to seed.

12. *Turc Grand.*—Plant of robust growth. Height, 2 feet 6 inches. Leaflets large, broad, deep green; outer leafstalks broad, much ribbed. Heart small. It may be useful for an early supply, but soon runs to seed.

13. *Seymour's White* [syns., Goodwin's White, Northumberland Champion White].—Plant of somewhat spreading habit of growth. Height, 3 feet. Heads large, 12 inches in girth. Outer leafstalks broad, very deeply ribbed. Hearts solid, blanching to nearly 14 inches. The stalks broad, thick, and fleshy. This is the largest-growing white Celery, and apt to become pithy if very strongly grown.

14. *Prize-taker White* [syn., Veitch's Silver White].—Plant of somewhat slender growth. Height, 3 feet. Leaflets small, deep green, sharply serrated. Heads large, girth 11 inches. Outer leafstalks narrow. Hearts somewhat loose, blanching to about 12 inches The stalks rather soft, but of fine flavour. Rather tender.

15. *Dixon's Mammoth White.*—Plant of close, compact, robust growth. Height 2 feet 3 inches. Leaflets broad. Heads large, girth 14 inches; outer leafstalks very broad, about 2 inches. Hearts very large, blanching about 11 inches, somewhat soft, but excellent. It stands the winter well.

16. *Great Eastern.*—Plant of loose spreading habit, so much so that it is difficult to keep the heads together, and much addicted to throwing-up side shoots. Height, 2 feet 9 inches. Leaflets small, pointed, very pale green. Heads small, girth 10 inches. Hearts loose and small. A very worthless sort, and decays early.

17. *Haywood's White Queen* [syns., Stuart & Mein's Giant White, Goodall's Flat-stalked, Webster's White].—Plant of robust growth. Leaves spreading. Height, 2 feet 9 inches. Heads large, 13 inches in girth; outer leafstalks very broad (about 2 inches), much ribbed, and coarse. Hearts solid, blanching to about 14 inches. The stalks very large, broad, thick, and fleshy; but without much flavour. An excellent sort to stand the winter.

18. *Veitch's Solid White* [syn., Danesbury].—Plant of close compact growth. Height, 2 feet 6 inches. Leaflets broad, very deeply toothed or serrated, giving it quite a distinct appearance. Heads compact, girth 11 inches; outer leafstalks rather broad, deeply ribbed, pale green. Hearts very firm and solid, blanching for about 12 inches. The stalks broad, thick, crisp, and tender. A very excellent variety, and stands the winter well.

19. *Boston Market.*—Plant dwarf, from 18 to 20 inches high. Leaflets small, pointed, and sharply serrated. This variety is not used to produce a single head as the ordinary Celeries, but has the peculiarity of forming a number of side-shoots or small heads, which are blanched. It is suited for early work, and it begins to run to seed almost as soon as planted out.

20. *Frisé, Curled or Garnishing.*—Plant of loose growth. Height about 2 feet. Leaves very pale green, and deeply cut or curled almost like Parsley. It is very ornamental. The leaves may be used for garnishing, but it is of no other use. It is very tender, and runs early to seed.

21. *Turnip-rooted* [syns., Celeri navet, Rave, Rave d'Erfurt, Soup Celery].—This is quite a distinct vegetable, the plant forming a large bulb at the base of leafstalks like a Turnip. This bulb is used in soups much in the same way as Turnips, and not the leafstalks as in other Celeries, and requires no blanching. It is not much cultivated in this country. *A. F. Barron.*

THE EXOTIC FERNERY AT ROEBUCK CASTLE.

ROEBUCK CASTLE, Co. Dublin, the residence of Edward Perceval Westby, Esq., has for some years past been noted for the excellence of its horticultural products in the way of choice plants and their admirable handling, as seen at our metropolitan exhibitions, and we apprehend the elaborate and beautiful fernery which its spirited proprietor has just erected is not likely to detract from the horticultural interest which attaches to the gardens and grounds. The site of the new fernery at Roebuck Castle is near the mansion, and facing the dressed grounds in connection with it, on which side it presents a handsome frontage of

glass of some 50 feet in breadth. The roof, which is of metal, consists of three semicircular spans, double glazed. The centre span, under which the fernery is entered, is narrower than the others, being about 12 feet wide, the others being nearly double that. The space covered by the centre span and that parallel to it on the left are devoted to what is to be the cool or temperate fernery, an admirably executed curtain of rock separating these from the span on the right, which is destined for the Ferns of the tropics and their allies, as the temperate division is for those of New Zealand, &c. Ample provision is made for commanding the suitable temperatures in both departments. The tropical division is supplied with four rows of 6-inch pipes, and further with four rows of 2-inch pipes, conveyed through a capacious slate cistern, destined to afford at all times an abundant supply for watering and syringing the plants and keeping the house at a proper temperature. This cistern is ingeniously concealed from view within a mass of rockwork, and, at the same time, perfectly comeatable by the gardeners. The cool division has two rows of 6-inch pipes carried round, the pipes in each instance being ingeniously concealed from view. In fact, as far as the building and heating are concerned, all appears to be executed in the best manner by the contractor, Mr. Kenny, of Dublin.

The rockwork in the temperate division is not yet quite out of hand, but only requires a few finishing touches from the artist (for such, indeed, he is) whom Mr. Westby has employed to design and execute the rockwork. As yet, therefore, the garden artist, Mr. Bracken, has not—save standing a few Tree Ferns here and there—done anything to clothe with verdurous beauty the peaks and spurs, cavernous dips and fissures, which have cropped up under the hands of the rock artist, Mr. Francis Briggs, who has shown here what he can do with even by no means the best materials. With the exception of some grotesque and cavernous stones brought from Mr. Westby's Clare property, those immediately available on the spot were not, we apprehend, such as the rock artist would select. Nevertheless, the imitation of the typical formation selected (conchoidal limestone we believe) has been most successful and true to Nature. On entering the fernery by the centre doorway, the visitor takes in at a glance the expanse and general features of the temperate division—the tropical fernery, as remarked above, being cut off and kept out of view by a curtain of rockwork carried up to the valley of the roof, to which it also serves as a support. This curtain on both its sides affords a great amount of suitable accommodation for the growth of the plants and their tasteful distribution.

Turning from this, one notes the tastefully contrived rock arrangements, supplementary and at the same time concealing the metal pillars which support the corresponding valley of the roof. Passing under an arch on the left of the entrance, and looking forwards, a bold mass of rock meets the eye, which dropping, it is invited to peer into the *penetralia* of a dark stalactite cavern, whose dome is faintly mirrored in the waters of a shallow pool, which feeds the tiny rivulet that wends its short and murmuring course through the fernery. Whilst admiring the various imitations of the natural rock, the visitor is led by a well contrived, gentle ascent—not of steps, as we too often see in similar attempts—but by as it were a time and water worn path, which lands him almost insensibly on the summit of the mass of rock which domes the cavern, and from this stand-point he is afforded a full view of the entire of the cool fernery and its contents. The descent on the opposite side is equally natural and easy. The cavern, we fancy, will, with suitable contrivances, make an appropriate home for some of the smaller New Zealand filmy Ferns, as also the larger Todeas and our own Killarney Fern. We trust an attempt to clothe the interior with the beautiful iridescent moss of the Devonshire caves, Schizostegia pinnata, will not be omitted. When this division is furnished with companions for the noble specimen of that rare and beautiful Tree Fern, Alsophila Leichardi, which now stands on the floor, and the rockwork has its ascending peak, cavernous pocket, deep fissure, and time-worn hollows fringed and draped with the most verdurous, elegant, and refreshing forms of plant life, the effect will, no doubt, be very pleasing.

Leaving this division, the visitor passes by a side door, and under a singularly well contrived rock arch, into the tropical fernery. Here he finds the atmosphere agreeably warm and moist, and the aspect more refreshing, the rockwork being completed and the work of planting and furnishing in a very forward condition. The same arrangement as in the cool fernery pretty much obtains here, though necessarily on a somewhat smaller scale, and, moreover, there is no cavern. There is, however, a rocky ascent to a similar standpoint for a down view of the whole, the mass of rock on which the visitor stands serving in this instance to conceal the supply cistern previously alluded to. The peaks, breaks, spurs, pockets, and standing spots for plants are here also ingeniously contrived, and the brush tints are well calculated, and give the idea of age to the rocks. Even now some of the verdurous bits of living greenery which here and there light up the face of and throw the grey tints of the rock in pleasing contrast are very striking. In appropriate spots the artist has rather pleasingly introduced a couple of examples of his mimic skill as regards other than inorganic formations. Where they might not have unnaturally sprung up in recesses of the rock, he has introduced imitations of one or two rugged stumps of what appear to have been sturdy and gnarled Oaks, which the woodman's crosscut had severed. The concentric layers of the wood and the bossed and rugged surface of the bark are capitally imitated. These stumps have moreover a utilitarian object, for they form very suitable and appropriately situated rests on which to place with good effect some elegant Fern, graceful Palm, or specimen flowering plant. The arrangements and provisions for affording the plants ample depth of soil in which to grow and flourish are excellent.

Leaving the warm division, the visitor passes by another door into the cool fernery. Before making his exit, however, his attention is for a moment rather unpleasantly arrested, for the overhanging crag seems dangerously tumbledown and threatening, the apprehension not being lessened by the connection of a supporting span of adjoining rock being apparently severed by some cause. The hesitation is, of course, only feigned or momentary, for all is perfectly safe, the dangerous aspect being only a further illustration of the artist's skill in his peculiar line, and the visitor finds himself again in the cool fernery, either to dwell longer on its interesting features or, leaving it, ramble through the dressed grounds and richly stocked plant-houses; for in both, at all seasons, he will find something good, something new or rare, and not a few things to admire. Mr. Briggs, the artist employed by Mr. Westby to construct the rockwork of his fernery, hails, we believe, from Chester, and has, we understand, executed many important pieces of work in England greatly to the satisfaction of his employers. Happening to meet him on the occasion of our recent visit to Roebuck, we had a wrinkle from him with regard to the erection of these indoor ferneries; namely, doing away with the trouble and expense of walls, and contriving the rocks so as to support the roof, the latter being the concluding part of the business. He states also that the piping could in this way be more judiciously arranged, be more convenient of access, and less obtruding on the sight. We shall, perhaps, on a future occasion notice this handsome fernery, looked at in its plant aspects. For the present we only leave it with one regret; that the perspective on entering was not more distant, and this beautiful fernery home double or treble its present length. *Irish Farmers' Gazette.*

AN EXPERIMENT WITH TURNIP SEEDS.*

BY A. STEPHEN WILSON.

THE seeds used in the following experiment were those of the Swedish Turnip (Brassica campestris rutabaga), and were about two years old.

From a parcel were selected 100 of the largest seeds and 100 of the smallest. The 100 large seeds weighed 5.32 grains, or each seed weighed .0532 of a grain, or 18.8 seeds weighed 1 grain. The 100 small seeds weighed 3.16 grains, or each seed weighed .0316 of a grain, or 31.6 seeds weighed 1 grain. The large seeds stood thus to the small in the proportion of 1 to .594.

On October 27, at 12 30 P.M., the 100 large seeds were spread over wet cotton cloth on one side of a plate, and the 100 small were spread over the other side, and all were then covered with wet blotting-paper. The temperature of the room where they stood was usually about 53° Fahr.

On October 29, at 3 P.M., seven large and six small seeds began to show their roots; at 10 P.M. of the same day forty-two large and twenty seven small seeds showed their roots. On October 30, at 10 A.M., sixty-nine large and sixty-five small, in various degrees, projected their roots; at 10 P.M. of the same day ninety-one large and eighty-six small had pushed out their roots. On October 31, at 9 A.M., ninety-five large and ninety-three small had pushed out their roots and various proportions of their cotyledons; at 10 P.M. ninety-six large and ninety-seven small showed their radicles, while two large had wholly thrown off the skin from their cotyledons. On November 1, at 10 A.M., ninety-seven large and ninety-eight small had burst their covering and thrown out their radicles; and on November 2, at 10 A.M., the whole 100 of large and small seeds had vegetated. At this time the longest roots or stems of the large seeds were about .48 of an inch in length, and those of the small .32 of an inch.

It is thus seen that the first seeds vegetated in about fifty hours, and that between the vegetation of the first and last seeds, there was a period of about 80 hours, giving the most vital eighty hours of growth in advance of the least vital. The large seeds took the lead in vegetating, but the small overtook them at the end.

The plate was now set aside, and the plants duly supplied with water. The wet blotting paper was allowed to remain upon them till it was carried up by the growing stems and was then thrown off. The plants continued to grow, spreading out their cotyledonary leaves more or less for two months.

During the whole time there was a most marked difference between the group in the one side of the plate and the group in the other. The plants of the large seeds took the lead and maintained their superiority to the last. Both in height of stem and in thickness the plants of the large seeds preserved a conspicuous advantage.

When some of the stems began to fall, and it appeared that little further growth was likely to take place, the two clusters were removed from the cloth on December 27 and laid aside to dry. The average height of the large plants above the cloth in the green state was 3.65 inches, and the average height of the small 2.87 inches.

Both sets of plants were dried on a sheet of paper beside each other. When about half dry they were weighed, and the large plants bore to the small the proportion of 1 to .285. When completely dry the weight of the large was to the weight of the small as 1 to .75. It was thus shown that the tissue of the large plants contained a greater proportion of evaporable matter than the tissue of the small, and that the tissue of the small was but three-fourths the weight of that of the large.

The lesson taught by this experiment seems to be that, other things being equal, a large Turnip seed will produce a larger Turnip than a small seed.

In looking at a drill of Turnips in any field it is at once seen that scarcely any two plants in succession are of equal size. It can hardly be supposed that the soil and the amount of manure should vary in a distance of 9 inches; but since the size of the two bulbs differ, a possible cause of difference thus exists in the difference in original size of the seeds.

In a large seed the cotyledons are larger than in a small, and contain a larger store of *pabulum* for the young plants. But the young plant or embryo itself is larger in a large seed than in a small, and has been more liberally treated on the parent stock. The fleshy bulb of a Turnip is usually called the root, perhaps it might be more properly regarded as the stem, and it is seen by the present experiment that the stem, which is nourished by the cotyledons, is larger where the cotyledons are large than where they are small.

The writer proposes growing sets of Turnips to the full size, from large and small seeds, and will then be in a safer position to say whether it would be advantageous for seedsmen and farmers to sift out and throw away their small seeds or to sow them.

* Read at the January meeting of the Edinburgh Botanical Society.

DOUBLE PELARGONIUMS.

THE unexpected appearance of the first double flowers of Pelargonium (inquinans) in the botanical garden of Clermont-Ferrand formed an epoch, although the learned and regretted M. Lecoq could never discover whence they came. It is scarcely doubtful that they were the production of dimorphism, frequent examples of this phenomenon amongst Zonal Pelargoniums having recently appeared, for instance, in Madame Rose Charmeux (which is a fixed sport from Tom Thumb), Garibaldi, a fixed sport from Rose Charmeux; album plenum, sport from Madame Vaucher; Drapeau National, from Gloire de Nancy, &c. All know that this last variety was obtained from Beauté de Suresnes fertilised by a stamen from the first double flower from Clermont. What charming plants have been

produced from this stock. It is fair to say that many growers looked with a partial eye on their own productions and offered them to credulous amateurs, who filled their houses with new names only, and were fortunate if the plants were more than mediocre in appearance. In 1867 appeared Camelliæflorum, Madame Lemoine, Wilhelm Pfitzer, and Madame Rose Charmeux, varieties which long remained in favour with cultivators; 1868 furnished Marie Lemoine, Victor Lemoine, M. Frœbel, and many others of little merit, not differing materially from those we already possessed. In 1869 some English varieties were introduced; Duc de Suez and Princess of Teck were, however, obtained from French raisers. Conqueror (Bull), and Mary Elizabeth, were good plants of that year. In 1870 (year of wretched memories) the varieties Madame Gebhart, Louis Van Houtte, Victoire de Lyon, showed real progress; this last variety especially, and which we owe to the perseverance of M. Jean Sisley. These have been the source of several tints, notably *rose violacé*, *lie de vin*, *groseille*, and *ponceau*, which have since been obtained from them. To mention only those plants the merit of which has been proved, 1871 gives us M. Rollisson (Bruant), Incendie de Fontenay (Lemoine), Patriote Lorrain (Lem.), Gambetta (Lem.), Bouquet (Bull), and l'Année Terrible (Lem.); the last remains in collections. 1872 gave us Macleod (Bruant), Madame Crousse (Crousse), Charles Darwin (Sisley), Emilio Castelar (Sisley), and several others, to which prompt justice has been done. In 1873 some of M. Bertier's plants were worthy of notice. Among others we must mention Madame Dauphin, Comte de Lambertye, and Souvenir de Lyons. M. Bruant, of Poitiers, gave us President Fonteneau. We had also Madame Dellesalle (Del.), M. Crousse (Cr.), Ernest Picard (Lem.), M. Boissier (Bruant), &c. This was the same year in which seeds were obtained from the first white double Pelargonium so much wished for—Aline Sisley; also from the first salmon, Asa Gray. These two first-rate varieties were the products of the energetic M. J. Sisley, who, like other growers, was not discouraged by his first failures; in fact, it seemed for a time, after many futile attempts, impossible to cross the first double Pelargoniums (inquinans) with the Zonal. This, however, has now been done, and since 1874 we have obtained from the same raiser two lovely varieties—Georges Sand and François Pertusati—to augment the contingent. Possessing these new elements all raisers abandoned inquinans, which only produced well-known tints of colour, with umbels more or less perfect, in order to devote their attention to the Zonals, which have the undoubted merit of remaining more dwarf in growth, and possessing a less leafy habit, yet flower as abundantly as the simple ones, and above all offer a larger field for the experimenter, and the success obtained in one year is truly astonishing. In order to obtain double flowers nothing must be left to chance, and the crosses effected between all the colours produce various new and unexpected shades of colour, such as would be obtained rarely in the case of seedlings raised with a view of perfecting simple flowers, accustomed as one is to collect the seeds without preparation.

The year 1875 has enriched us with many new varieties. We cannot say all are of the first order of excellence, but we may mention the following as of merit:—Henri Lecoq (Sisley), Louis Agassiz (Sisley), E. Beaudoin (Th. et K.), Noémie (Th. et K.), Henri Beurier (Alég), Anna Montel (Alég), Comète Loggia (Délaux), Ville de Toulouse (Del.), Ferd. d'Aragon (Bertier), Marguérite Bruant (Bruant), Adélaïde Blanchon (Boucharlat), Drapeau National (Schmitt), Guillon Mangilli (Lem.), Lucie Lemoine (Lem.), Mde. Thibaut (Lem.), Le Père Secchi (Lem.), Général Saussier (Lem.) What do we desire now? Fuller flowers certainly. For 1876 surprises await us, and there exist ready to be distributed plants with colossal umbels in tints of lilac, rose, rose-purple, rose-violet, lake (yes! true lake), scarlet, purple, acajou, &c. The *début* has been deferred; now we advance *à pas de géant*, and perfection will quickly be attained. Pale violet and yellow tints are still wanting. Shall we obtain these? Who can tell? After all, why not? *V. Lemoine, in "Revue Horticole," January* 1.

BRITISH GARDENERS.—XXXIV.

MICHAEL SAUL.

MR. SAUL, whose portrait is annexed, is well known as one of our best practical gardeners, and has been for many years a contributor to the horticultural Press. He was born, he tells us, at Carey's Wood, Castlemartyr, Co. Cork, on June 29, 1817. His father was, at that time, gardener at Carey's Wood to the Dowager Countess of Shannon, who was a most enthusiastic gardener, who understood plants well, and took the liveliest interest in their cultivation. Under these auspices Mr. Saul's father was enabled to get together a choice collection of stove and greenhouse plants, also extensive collections of hardy herbaceous, alpine, and hardy and tender bulbous plants. It was a walled-in garden, the walls covered with Myrtles, Jasmine, Magnolias, Wistarias, Roses, &c. Such is the mildness of the climate of that locality that Pelargoniums require very little protection during the ordinary winters, consequently many things which require the protection of a greenhouse in the neighbourhood of London flourish in the open ground there, and this led to the constant planting out of some of the hardier greenhouse plants in the open borders, numbers of

Michael Saul

which succeeded. Camellias did well, also Fuchsias, several Acacias, and such things as Aloysia citriodora, which formed large bushes; Dracocephalum canariense, &c. In one corner of the garden grew a fine bush of Chimonanthus fragrans, in another flourished a fine specimen of Pittosporum Tobira, while Hydrangeas and many other things flourished unprotected in the open garden. In a narrow border in front of a range of three greenhouses were quantities of bulbous plants, and among them grand masses of Belladonna Lily, which formed quite a sight well worth seeing when in flower. There were also choice collections of Auriculas, Carnations, Tulips, &c., all cultivated with the greatest care. Everything was kept in the neatest order.

"Lady Shannon was exceedingly kind to my father," writes Mr. Saul; "she allowed him the use of her library, and frequently made him presents of works on gardening, among them *Miller's Gardeners' Dictionary*, by Martin, in two large volumes. As much of my spare time in summer, after school hours, was spent in the gardens, watching the different operations that were going on, and assisting, when allowed, to do little jobs, I soon got to like being among plants, and, as time passed on, I got to know the names of many of them and the proper season for doing many of the operations, and a love of plants became part of my nature. My elder brother, Andrew, and my younger brother, John, having chosen gardening for a profession, my father had other prospects in view with regard to myself, and I continued to go to school until I was eighteen years of age. Both my brothers emigrated many years ago to the United States. Andrew succeeded to the nursery business of Mr. A. J. Downing, the celebrated American horticulturist, and carried on the business until his death. John is now, and has been for nearly twenty-five years, established at Washington as nurseryman, seedsman, and florist. Another younger brother, James, is farming at Napa, in California.

"In the early part of 1836 the Earl of Shannon (son of the Dowager Countess) purchased East Cowes Castle in the Isle of Wight. He took my father there as gardener and manager of the place, and we went to reside there in May, 1836. My father lived there some seven or eight years, until the place was sold after Lord Shannon's death, when he went back to Castlemartyr and resided at the park until his death, a few years ago, at the advanced age of ninety years. My venerable and respected mother still survives him. After we went to live in the Isle of Wight I made up my mind to take to gardening as a profession, and I resolved at the time I would spare no labour, either of mind or body, to become a thorough gardener.

"In February, 1837, I went to the Durdham Down Nurseries, Bristol. After a few weeks in the grounds, I was put into the houses on the first vacancy that occurred, and after a few months of the usual routine work in the houses, I was put into the propagating houses by Mr. Mayes, as assistant to the propagator; here I learned many little things in propagating that were useful to me in after life. Mr. Mayes was a most skilful and successful hybridiser. Whilst I was in the nurseries some beautiful Amaryllids and Pelargoniums flowered. One of the Pelargoniums he raised, which in those days was thought much of in the West of England—I allude to Speculum Mundi—is even at the present time a most valuable kind both for its colour and its constant and profuse habit of flowering, since it can, with a little management, be had in flower all the year round. I had early acquired a taste, or rather a passion for reading, which has clung to me through life. There was a library in the nursery for the use of the men; I availed myself of the opportunity thus afforded me, and read much at nights during the time I was in the nurseries. I spent the autumn and winter in the propagating houses. The winter was a very severe one—January, 1838, being remarkable for the lowness of its temperature, and Murphy's prediction of the coldest day in that month was verified.

"Having hitherto been brought up among plants I felt a strong desire to learn something of fruit growing, and with this view I went in March, 1838, as foreman under Mr. Hatch, to Leigh Court, near Bristol, the seat of P. J. Miles, Esq., the father of the present Sir William Miles, Bart. Leigh Court was at that time one of the most famous forcing places about Bristol. With a desire for improvement, I had no hesitation in leaving the comparatively light work of the propagating houses for the heavy work of a large forcing establishment. Mr. Hatch was a clever gardener, and did most things well that he undertook. He was a good Grape and Pine grower, and a successful exhibitor at both the Bristol and Bath shows. He grew Pelargoniums very well. Fine plants were shown at Chiswick about the time by Messrs. Cock, Gaines, and Catleugh, which were duly reported in the *Gardeners' Chronicle* at the time. Mr. Hatch used some bone-dust from a button factory, which, being genuine and very fine, its effects were immediate, and when it was mixed with the usual compost the plants throve amazingly in it. One plant was, for the size of the pot, the largest and finest specimen I ever saw. He also used the bone-dust for Pines, pot Vines, and several other things, and all grew remarkably well in it. Whilst at Leigh Court I had opportunities of seeing the gardening about Bristol and Bath, and whilst there I continued to devote to reading and study every spare hour I had. About this time Lindley's *Theory of Horticulture* was published. I felt delighted after I had carefully read it: it threw so much light on gardening operations. I stayed four years at Leigh Court, and though it was

a heavy place I left it with regret, as I had received great kindness from Mr. Hatch.

"In February, 1842, I went as foreman (under Mr. Spencer) to Bowood, the seat of the Marquis of Lansdowne. Of Mr. Spencer and Bowood I need not say much, as both are well-known to fame. Everything was well done at Bowood. During my stay there I kept a diary of everything that was done, and threw my whole heart into my work. Pines were grown very extensively and remarkably well. Mr. Spencer was one of the earliest growers of the Cayenne variety in this country. Whilst I was at Bowood Mr. Spencer was an exhibitor of fruit at most of the Chiswick shows, and I had several times to take his exhibits to London; these journeys I always looked forward to with much pleasure. I have the liveliest recollection of my first journey. Travelling by mail train I was able to get to Turnham Green about five o'clock. I soon made my way to the round tent in which the fruit used to be exhibited in those days, and there I found Mr. Thompson with an assistant; I introduced myself to him, told him my business, and got the necessary instructions from him. Dr. Lindley was soon after on the spot, and, as this was the first time I had seen these gentlemen, I took stock of them. As I had plenty of time to stage my exhibits, I took the opportunity of looking round to see what fruit was arriving for exhibition, and three bunches of Black Hamburgh Grapes took my attention; the bunches were good, the berries large and beautifully coloured. Seeing these fine Grapes I thought probably finer still would be shown, but there was none which approached them by a long distance. When the award was made I found they were exhibited by Mr. Henderson, of Cole Orton Hall. I was much pleased with the show on the whole, though it did not come up to my expectations. Mr. Spencer was generally a successful exhibitor. I remained four years at Bowood, and worked hard and studied hard the whole time.

"In February, 1846, I went to Messrs. Knight & Perry's nursery, Chelsea, and remained there something over two years. During my stay there I generally visited the shows at Chiswick and the Botanic Garden, and I availed myself of every opportunity I had to see as much as I could of the gardening around London.

"In 1848 I was engaged by the late Lord Stourton, and I came here at the beginning of July. I found the kitchen garden little better than a wilderness, and the flower garden and pleasure grounds in a similar state. Coming in July, I was able to see at once what the fruit was like. The greater part of it was miserably poor, and of very inferior quality. My first effort was to put the gardens into something like shape, as there was nothing that could be called a walk in them. Having done this, I next turned my attention to the fruit trees. I removed at once all that were really worthless; such as were likely to bear a little fruit of any value were retained for a time until I could get others into a bearing state, but these have long since been removed. There are very few trees here now that were here in 1848. I got gradually planted a selection of the best of all the hardy fruits, both on the walls and in the open ground. Most of these trees grew well, and soon came into bearing, and have now for more than twenty years borne immense quantities of fruit. Having a considerable extent of walling, and a great number of standard, dwarf, and pyramid trees, we generally have sufficient fruit to meet the requirements of a large establishment, even in seasons when the fruit crops are light; and in seasons like the present, when the fruit crops are good, we have a superabundance. We have good collections of both Pears and Apples, which include most of the best kinds. Grapes and Pines we do well, but my object has always been to produce good useful fruit. Pines I grow in a sort of peat or vegetable mould that we have in the park; the plants root most freely in it, grow well, and produce good fruit. I have not exhibited much, except at our local shows, and not much at them of late years. The old mansion that was here in 1848, when I came, has been taken down, and the present stately one built. The terraces and flower garden have been made since, and the pleasure grounds have been entirely altered, considerably enlarged, and, excepting the timber trees, almost entirely planted. Nearly every season since 1848 we have done more or less in the planting of ornamental trees and shrubs; we have planted great numbers of the hardier kinds of Conifers; they do very well on the soil here, the only drawbacks are the violent western gales that so often visit us in winter. We have planted great numbers of the Atlas Cedars, most of which are doing well, many of them already nice trees, some of them bearing cones. In a few years these and the other Conifers will add a fine feature to this beautiful place."

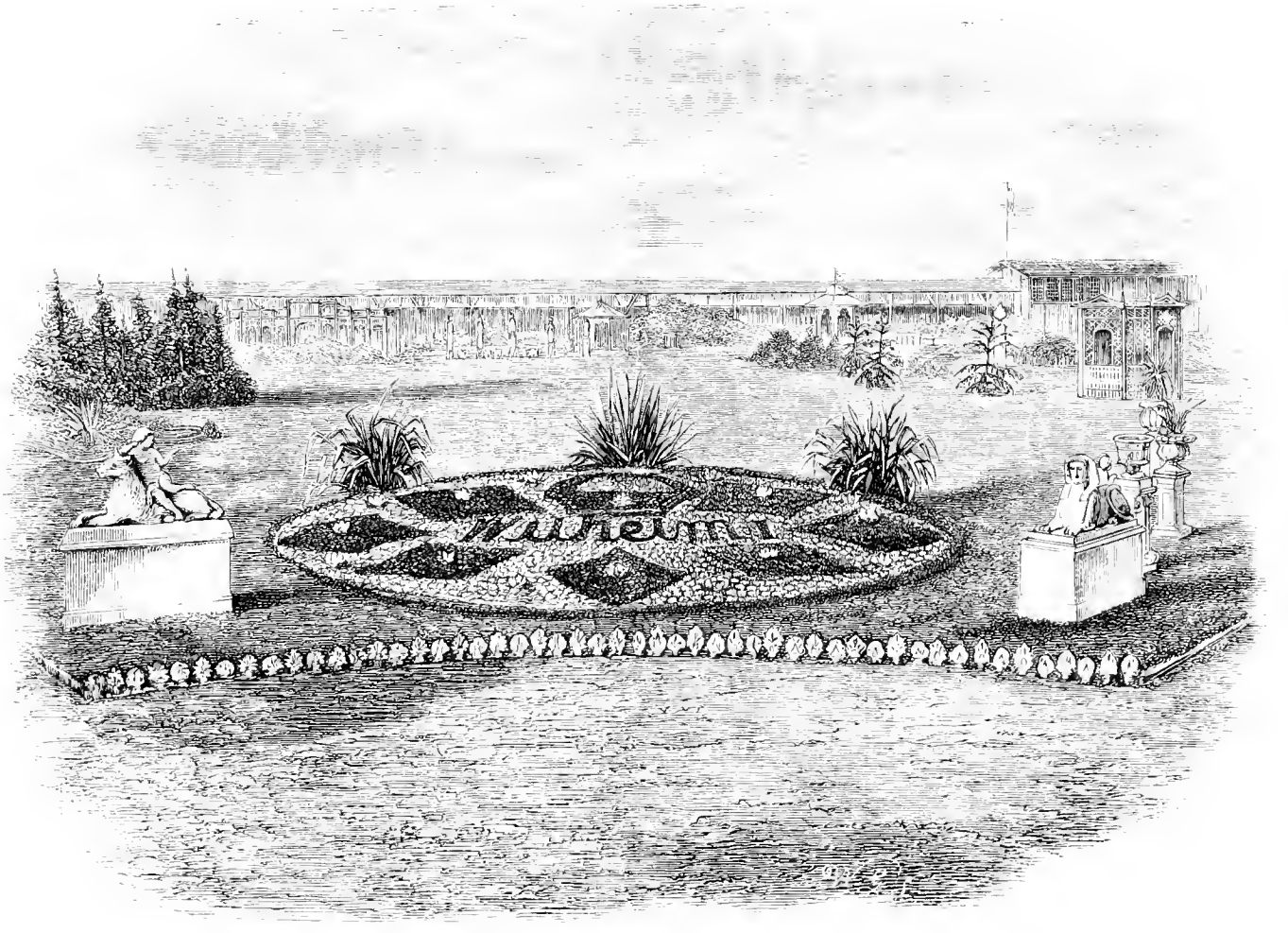


FIG. 20.—BED OF SUCCULENTS, AT THE COLOGNE EXHIBITION.

SUCCULENT BEDDING PLANTS.

SUCCULENTS exceed all other bedding plants in the possession of the merit of constancy. From the moment they are planted out in the spring, until lifted again in the late autumn, their existence is an even and uneventful one. There are no spasms of flower—momentarily gay in the sunshine, and then momentarily wretched in the rain and storm; no withered leaves and decayed flowers; no growing out of all bounds; no pegging, tying, pinching, or elaborate dressing. Indeed, no plants need simpler treatment, or to such simple treatment yield more satisfactory

results. Succulents are not without many features of beauty. All have many points of interest, and all, where deficient in gaiety of appearance, make up the deficiency in curious construction or in a boldness and originality of design that would have delighted the eyes of the ancient architects could they have seen what we now do. A designer of the old Italian school of architecture would have evolved out of some of our fine Echeverias, Sempervivums, and other kindred plants noble capitals or *bassi rilievi* that should have been worthy of the palmiest day of sculpture.

Succulents admit of a wondrous variety of design in their arrangement as bedding plants. In this respect, probably, they excel all others, being almost as ductile as the notes of the musical scale, which can be transposed into tunes *ad infinitum*. Indeed, given a good stock of material of some score or more of kinds, and the ingenuity of the gardener is the only limit to the diversity of bedding arrangements to which they may be subjected. Succulents are not bedding novelties, as they have for some time been used in connection with foliage and flowering plants, but rather as adjuncts and accessories. Only in a few cases have they played a prominent part; and rarer still are the instances where succulents alone have been permitted to form an entire bed, much less an entire bedding display. Of late years there has been a tendency towards a foliage effect as distinguished from a purely floral effect, for in garden bedding there is fashion and a love of change. The scarlet and yellow fevers have nearly exhausted themselves, and people now, proud of their superior æsthetic tastes and refined art notions, look contemptously askance at blazing masses of scarlet, rose, crimson, blue, white, and yellow. All these evince a vulgar taste, a want of perception of the mysteries of colour blending, and many other sad defects are attributable to that stock of technical knowledge which social scientists and art critics so sadly deplore. So it is that now we have nearly crept out of the Scylla of flower colouring into the Charybdis of foliage colouring, and into a taste for combinations that after all show little advance on the vulgarities of a passing generation. What is the Golden Feather but yellow, and the various kinds of Alternantheras, are they not red? And when we see bed after bed composed almost exclusively of these two plants, only dashed here with a spot of blue Lobelia, and some pale forms of edgings, and find that these plants, tortured into a score of shawl, hearth-rug or carpet patterns, every time as defined as with edging shears, and the whole as flat as a pancake, are now the pets of gardeners and the "dear loves" of an art-educated people, what are we to say after all as to the want of taste exhibited by our predecessors, or what could they not say as to ours?

Who in the interests of true art in garden bedding will at once proscribe for ever Yellow Pyrethrum—a handsome plant if left to Nature, but a frightful nuisance when pinched, dwarfed, and carpeted; and red—that is, for one month out of the summer season—miffy, tender, unreliable, Alternantheras, and with them all plants whose beauties are simply meretricious; and rely for a bedding arrangement upon plants that make no pretence to gaudiness of colour, are simple in their individuality, but very pleasing, and indeed beautiful, when carefully and artistically grouped for effect? It may be admitted that now and then during the season dashes of colour are very pleasing and attractive, but under such a clime as ours, so variable and uncertain, the beauty of these dashes is very evanescent. We don't like this unreliability, it is foreign to our insular nature. We have strong preferences for realities, and for constant and certain effects; thus, in spite of the meteoric flash of the pretty flower, here to day and gone to-morrow, that dazzles for the time, it leaves not that impression, nor is productive of that permanent joy that accrues from the frequent sight of the gradual and continuous, although slow, development of beauties that time only helps to improve, and neither that nor untoward storms decay. During the summer I saw a bedding display whilst growing up to its height of perfection. In the majority of the beds there were defects, because some expectant colours were not developed—there were flies in the pot of honey; but in the two or three beds given up entirely to succulents there was not a feature lacking except development, and that defect was being obliterated every day. Again, I saw the beds when all were at their best, and then there were still motes, caused by the weather, and failures that could not be gainsaid; still much of it was very pretty, and, being arranged with taste, produced a very charming effect, but the beds of succulents had further improved, and if less gay than some of their neighbours were not less beautiful.

Once more, and this time in the autumn, and now the flowers are nearly fled, and what are left have a draggled appearance that rather evokes pity than praise; the poor Alternantheras have taken cold, and look pale and emaciated in the autumn air. The Lobelias, that for so long were coy to the sun's wooing, have, under the influence of the late summer rains, grown bold and out of all beauty of form or hue. There is an air of languor and of decay over the whole of these floral and foliage beds. Their glories have departed, but the succulents, looking more pleasing than ever by comparison, are still as fresh and as enjoyable to gaze upon as at any time for the few months that the bedding season has lasted. Still farther, a few autumn frosts will not dim their lustre nor deface their beauties, and the tolerant gardener will be only too glad to let these remain for a couple of months longer after their tender floral fellows have been consigned to the ignominious rubbish-heap. In many large places where parterre gardening is not made a special feature, and exists only as a subsidiary adjunct to the general arrangements of the place, it is an excellent custom to find in one secluded place a Rose garden, in another a herbaceous garden, in another a floral parterre, in another a sub-tropical garden, in another a garden of annuals, and so on. Such places as these have special charms to the visitor, as here one constantly meets with some new surprise in the shape of beautiful combinations that burst suddenly on the eye without previous warning. In such places I advise the addition of a new feature in the shape of a succulent garden—not a rock garden, for on these miserable abortions succulents simply exist, but do not grow—but a genuine garden of good rich soil liberally supplied with water, where, during the summer months, the plants may be furnished with an abundance of what they like—moisture. Permanent edgings and designs should be worked out with Sedums and the hardier Sempervivums, so that, although less effective, yet even in the winter this garden should not be without its special charms, but during the summer, when all the tender forms of succulents will thrive well in the open ground the whole of the beds and borders might be filled with the highest artistic arrangement possible, and, where variety was abundant, some rare and pleasing combinations produced. Medium-sized Agaves of the different kinds are very attractive objects, especially as centre plants, so also are the large Sempervivums, such as S. phylloides, urbicum, canariense, Donkelaari, arboreum, and especially arboreum variegatum; this latter kind is so robust and so effective, because of its colouring, that it should be largely used.

Fine plants of Echeveria metallica, especially when in flower, are most effective and distinct objects, that tell with great force because of their peculiar hue; whilst of pale-coloured forms, Echeveria glauco-metallica, E. Peacockii, Cotyledon pulverulenta, Pachyphyton bracteosum, Kleinia tomentosa, and similar forms, lend an air of elegance and lightness that can hardly be realised unless seen. It is, however, when such plants as these are planted up to produce blotches of colour that their value as decorative plants is most truthfully realised. The dwarf Sedums form the very best of carpet plants, but like plenty of moisture. There is no danger that they will need the sheers to keep them even and in line. They have the excellent faculty of knowing their places and keeping them. For a dense green carpet nothing can beat Sedum lydium, and for a pale one, Sedum glaucum; Sedum corsicum is of a still more silvery hue, and forms a dense carpet of pale hue, that is a capital background for neutral-coloured plants. Sedum acre elegans is charmingly tinted with creamy white, and makes a dense bottom, and is as effective in the summer as its pretty congener, Sedum acre aureum, in the winter. Added to these are almost innumerable forms of half-hardy Echeverias, Crassulas, and other greenhouse species, and hardy kinds of Sempervivum, that are all indispensable—all forming a mass of material that can be in skilful hands made to produce bedding effects second to none in any garden in the kingdom. *A. D.* [In illustration of our correspondent's article we insert a view of a bed of succulent plants displayed at the Cologne Exhibition last autumn (fig. 20). One of the novel features of that exhibition consisted of a competition for beds of this character, several of which were dotted about the grounds, and did much to relieve the monotony of the level sandy field in which the exhibition was held. In the bed of which a figure is given, Echeverias, Crassulas and Alternantheras were employed, the tall plants in the centre being Phormiums. The bed in question was not the best in the exhibition, but the loyalty of the photographer was on a par with that of the gardener. EDS.]

Florists' Flowers.

DRESSING CARNATIONS AND PICOTEES.—No one can rejoice more than I do to see the vigour with which Mr. Dodwell has resumed his place in the floricultural world. It reminds one of nothing so much as the leap with which the clown descends into the arena with "Here we are again," and then commences with his flapper belabouring all around him. As to my being hurt by his severity, I can only say as the man did when his wife attacked him, and he was remonstrated with for allowing it, "Lor bless you, it pleases she, and it don't hurt I." When I undertook to write for the public I went through a process of thickening of the skin, and as I am in the habit of expressing my own opinions frankly enough, I can never find fault with any one who chooses to do the same. That I am "ignorant," "unintelligent," "idiosyncratic," and all sorts of other things, is, I have no doubt, perfectly true, but I must demur to any charge of wilful preversion of facts, and certainly it would be the last thing I should wish to do in reference to any that came from the pen of Mr. Jeans. I knew him better than Mr. Dodwell. He was an intimate and much-valued friend, had been a florist all his life, and when he penned the article in the *Florist* had far advanced in middle life; and my notion was, in reading the article, that until about that time he had entertained the notions that he has expressed, and I think that this would be the view of any ordinary reader.

I must confess that if it is as Mr. Dodwell states, I have been under an illusion as to the difference between northern and southern tastes, and that Mr. Dodwell was to be considered as a southern grower. I am aware that a very elaborate attempt was made in 1850 to bring together the northern and southern growers by the late John Edwards; that the line of demarcation that able florist drew was from Lynn to Swansea. Now Derby was far north of that line, and I remember that a Mr. E. S. Dodwell, an enthusiastic grower of Carnations and Picotees, then resided there; that in the competition at Slough in that year he seemed to be the champion of the northerners—exhibiting in the classes for northern flowers, but not in those for southern flowers. Was it, then, strange that I should have thought that Mr. Dodwell had northern instead of southern tastes? He says that difference does not exist. All I can say is that I have heard, even of late years, some southerners ridicule the thinness of the northern flowers, and have seen in catalogues flowers marked as suiting the northern taste.

Mr. Dodwell denies that you may take as many petals out of a Picotee or Carnation as you like without being disqualified; what, I wonder, is the number you may take? I never knew there was a limit, and do not believe there is, despite of Mr. Dodwell's statement. Mr. Dodwell thinks it strange that I should have asked Mr. Horner what the meaning of "mutilating" a flower was; but I always understood that to mutilate meant to take away from: I learn, however, that in Picotee dressing language (Mr. Horner *scripsit*) it means that you may take away from a flower, but must not add anything to it.

In maintaining my views on this subject, I know I run counter to those of most, though not all, growers of these beautiful flowers, but I still hold that there is the widest difference between the flower as grown and as exhibited, and if we are spared to the summer and there is any exhibition of them in the metropolis, I should like to bring up a flower of two or three of the leading varieties as they are grown, and place them alongside a dressed flower. I shall be content to be judged by the verdict of any one as to whether I have exaggerated, or "set down aught in malice."

In closing this little controversy, let me say that as in private life politicians of the most opposite views can meet as friends; that as the counsel for plaintiff and defendant who have been all day saying the hardest possible things against one another, can amicably hobnob at the bar mess; so when Mr. Dodwell and I meet together, nothing that he has written will prevent my meeting him as we have done before. *D., Deal.*

Garden Operations.

PLANT HOUSES.

GREENHOUSE HARD-WOODED PLANTS. — All winter tying and training should now be got on with as time can be found, so as to bring it to a close before the season for general spring work arrives. During severe weather spare hands should be employed in making a supply of sticks that will last through the summer. Labels also of different sizes that will be needed should be made, using good resinous wood for them. Crocks in their different sizes should be broken in sufficient quantities to last through the season. If enough material for these is not at hand, soft bricks similarly broken will do to supply the place. All empty pots should be thoroughly washed, steeping them for some hours beforehand, which will not only expedite the work, but admit of its being much better done. Where everything of this kind is so far as possible got on with at this time of the year, it makes a very great difference in the spring.

SOFT-WOODED GREENHOUSE PLANTS.—Cuttings of Chrysanthemums should now be put in, for although they can be grown to flower well when struck later on, it is better not to defer their propagation until spring, as unless they receive extra attention through the summer late struck plants do not usually flower so well. Few decorative things are better deserving of liberal treatment. Indeed vigorous growing, gross-feeding things like the Chrysanthemum can never possibly be produced in their wonted form unless their wants are continuously supplied with the liberal feeding indispensable to support their naturally rapid growth, not only in the later stages, when the flower-buds are growing, but all through their existence from the time the cuttings are struck. It is through the impression often entertained that the Chrysanthemum only requires strong stimulants in the later stages of its growth, that the plant is so frequently met with deficient in both the size and quantity of its flowers. Certainly during the stage when the bloom-buds are formed and swelling, the plants stand in need of the most liberal feeding, but from the time of the cuttings being potted off, the soil ought to be much richer than most things require or would bear. In selecting cuttings those should be chosen that are stout and short-jointed. It is surprising the difference in the progress that a strong cutting of any plant will make in the after stages of its growth as compared with such as are weak to commence with. They are best rooted in a temperature of from 45° to 50°; if put in a very warm place they get drawn up and considerably weakened by the time they are well rooted. *T. Baines.*

FLOWER GARDEN.

Draining, walk-making, or alterations of any kind necessitating the removal of the turf should be accomplished as soon as possible, in order that the turf may get re-established ere the drying winds of March set in. Box edgings, as soon as the soil is sufficiently dry to handle, may now be planted, and bad parts of existing edgings made good. Tree and shrub planting may also be continued as opportunity and weather permit; as a rule, all the evergreen tribe are best planted in early autumn, but deciduous trees from now to the end of February. Thorns, Lilacs, Laburnums, Syringas, Tulip-trees, Horse and Spanish Chestnuts, and other flowering trees are not planted in half such numbers as they ought to be. The rage for Conifers seems to have thrown them into the shade, and though this is a class of plants at all times worthy of admiration, the danger is that we shall soon have too much of a good thing. Herbaceous borders may now at any time be rearranged and trimmed up, dividing any kinds requiring it, and forking and manuring the grounds. Usually bulbs of many kinds are intermixed in these borders, and therefore the operator will require to use great care not to injure them: vacant spaces may be filled in with Anemones, Ranunculuses, Liliums, and Gladioli, all of which do well if planted at this season. Plant Roses as soon as possible, if a good bloom is expected next June. Deep rich alluvial loam, made rather firm, is the kind of soil in which Roses delight, but such not being always at command the best substitute is to manure freely, and especially by surface mulching. Dahlias should be occasionally looked over, and kinds requiring to be increased be at once planted in pots or boxes, and put in heat. Cannas are invaluable plants for the "subtropical" garden; old roots of these may now be divided and started in gentle heat; a single crown will make a large plant by planting time. Also propagate for the same purpose Abutilon Boule de Niege, A. Duc de Malakoff and A. Thomsoni variegata, Aralia papyrifera and A. Sieboldii, Caladium esculentum, Dracæna australis, Ficus elastica, and Phormium tenax. All the above are easy of propagation where a bottom-heat of 64° and 60° top-heat can be given. Seeds of the following can be raised with similar heat, and will, if sown now, make fine plants for putting out in the "subtropical" garden at the end of May:—Acacia lophantha, Acanthus latifolia, Amaranthus salicifolius, Chamæpeuce Casabonæ, and C. diacantha, Ferdinanda eminens, Melianthus major, Ricinus, many varieties; Solanums, ditto; Salvia argentea, Wigandia caracasana, W. macrophylla, and Zea Cuzko. *W. Wildsmith, Hatfield.*

FRUIT HOUSES.

PEACHES AND NECTARINES. — Two important matters connected with the forcing of these will at about this period require attention, namely, the disbudding of the trees and the fertilising of the flowers. In the latter case the effects of impregnation at this season, towards ensuring fructification, is of sufficient moment not to be neglected; it should be attended to when the pollen is in a dry state. Disbudding, to a certain extent, is essentially necessary in order to maintain an evenly balanced proportion of growth. In the case of early forced trees, which make growth but slowly, the practice is undoubtedly occasionally too rigidly applied; the course of treatment which we pursue in this respect is a combination of disbudding and pinching, taking away those which must of necessity be removed, and nipping off the others—not the terminals—at about the fourth leaf above the base of the shoot. The residuum of many of these form invaluable little spurs. The operation should be gradual, as being then less detrimental to the growth of the trees under their present condition. Where borders are not already mulched with about 3 or 4 inches of pure or decomposed manure, immediate attention should be given to this very important matter, as a means of promoting surface root-action. Let former directions in regard to ordinary daily treatment remain in force until the fruit is fairly set and shows signs of swelling onward. The green-fly will at times come in patches on the trees, even when every precaution has been taken for the eradication of insect pests. To remove such speedily we syringe the trees with quassia water, made as follows:—Put about 5 lb. of quassia chips into 25 gallons of cold water, let it stand a few hours, and it is fit for use. When there are several houses devoted to these fruits another should be started now, applying the same treatment as given to the early house. *G. T. Miles, Wycombe Abbey.*

VINES.—Grapes now in bloom will require a steady night temperature of 65° to 68°, keeping the atmosphere rather dry, and discontinuing the use of the syringe on the foliage. Give a little air on favourable occasions when the thermometer indicates 75°, but especially avoid cold currents of air. During this period the floors, &c., should only be damped in the morning or during the forenoon; when the berries are fairly set, thin as soon as it can be plainly seen which are likely to swell best. At this early season avoid over-thinning, and, if necessary, remove a few more at a later period. The necessary moisture of the atmosphere may now be increased by damping more frequently, and reducing the night temperature to 65° as a maximum. Where Grapes are required for the middle of June and onwards the house should be closed immediately, if not already done, so as to start gently with fire-heat by the end of the month. This applies only to the earlier ripening kinds, as Black Hamburgh, Buckland Sweetwater, &c.; Muscats and other late varieties will require considerably more time to bring them to perfection. Where late Grapes are still on the Vines, these, if required to be kept as long as possible, may now be cut with the shoot on which they are grown, pruning back to one or two buds as they are taken off, and inserting each shoot separately in a bottle of water. Where young Vines are in request buds should be got in as soon as possible; in selecting these preference should be given to moderate-sized and well-ripened rather than large and coarse wood, which is seldom so well matured: cut the buds in a slanting direction immediately over the eye and about 1½ inch horizontally below. Pot singly and firmly in 3-inch pots, in a compost of fibrous loam and leaf-soil, or well decomposed manure, to which a little clean sand should be added. It is also well to put a little sand in with the bud when inserted. When potted plunge the pots in a close pit or frame, where a bottom-heat of 75° to 80° can be maintained. The temperature of the atmosphere should be 55° to 60°, gradually increasing a few degrees as the buds commence growth. *W. Cox, Madresfield.*

CUCUMBERS.—Where houses are not efficiently heated, indeed where they are abundantly supplied with hot-water pipes, the dark cold weather which has prevailed throughout the past fortnight will have rendered extra firing necessary to maintain the minimum temperature, conditions highly favourable to the rapid spread of red-spider which must be kept in check by the application of a weak solution of Gishurst Compound, half an ounce to the gallon, to which a pinch of sulphur may be added. Frigi Domo blinds combined with a good plunging bed of fermenting leaves, assuming that the plants are grown in pots, will be found valuable economisers of dry fire-heat, and the ammonia given off by the fermenting material will greatly conduce to the health, vigour and development of foliage and fruit. A mistake which often leads to failure in the growth of winter Cucumbers, is the too liberal addition of manure to the compost at starting. If grown in good turfy loam tepid liquid manure will be found the best stimulant, as it can be applied when the plants most need assistance; and as the roots rise to the surface they should be encouraged by the frequent addition of small quantities of similar compost. A steady bottom-heat of 80° to 85°, thin training and light cropping, are items which must not be overlooked. Use the syringe sparingly until we have more light, and let external conditions be the guide in the application of heat and moisture. Where the earliest spring Cucumbers are grown in pits and frames the first bed should now be ready for the reception of the soil. Pot off young plants, keep close to the glass, and make sowings for succession. *W. Coleman, Eastnor.*

KITCHEN GARDEN.

The dry seasonable frosts that have lately prevailed have afforded an excellent opportunity for getting manure and any refuse compost wheeled on to the different vegetable quarters, borders, &c. This should be followed up by digging it in as soon as possible, as manure deteriorates much by losing the rich juices through evaporation while lying exposed to the atmosphere. Where it can possibly be avoided the different wall fruit borders should remain uncropped, and in the case of those occupied by stone fruits the less manure put into them the better, as this is often a source of much mischief, independent of the great injury done by the spade in destroying all surface roots. These sunny borders are of too much value in most places to be reserved exclusively for the use of the trees, but good substitutes for them may be formed by throwing up the ground so as to make sloping banks to the south, selecting warm sheltered situations for the purpose. Were those occupied by choice fruits left more to themselves, without the unnatural stimulus of strong manures constantly used in cropping, we should hear much less of canker and other diseases affecting such fruit trees as the Apricot, Peach, &c. A mulching to shade the roots during the summer months will in every case be found far better than disturbing the soil or allowing manure to become incorporated with it. Raspberry quarters should at once be treated in the same way as advised for fruit borders, leaving the soil entirely undisturbed, except for the purpose of removing superfluous suckers or canes. The practice of digging or forking amongst these and other bush fruit is decidedly wrong and has a bad effect. Plantations of Strawberries often suffer seriously through the severity of the weather and cold cutting winds, especially during February and March. These should now have a good mulching of half-rotten manure, which will afford protection, and enrich the beds.

The forcing department will now require most vigilant attention to keep up the necessary supplies of such things as Asparagus, Rhubarb, Seakale, &c. The old-fashioned way of forcing the latter entailed no end of labour, which was often attended with very unsatisfactory results through over or under-heating of the huge mass of fermenting material required for the purpose. The present system of digging up the roots and forcing them under cover is much to be preferred in every way, and affords both Rhubarb and Seakale of far better flavour than can be got when manure is employed. Almost any warm place may be utilised for bringing these on, such as a Mushroom-house or the top or back wall of a boiler at work, where it will come on in fine style. Besides affording Asparagus a good brisk bottom-heat, it should, if possible, be placed where it can receive the benefit of a hot-water pipe, as without top-heat at this early season, so that it can have air, it is deficient both in colour and flavour. Later on, a common hot-bed answers the purpose admirably. There is no heat so genial and suitable for the purpose of seed-raising and forcing certain crops as the old-fashioned dung frame; and plenty of sweet fermenting materials should at this season be always ready to hand, to be made up into beds as wanted. These will be necessary at once, in order to start early Carrots, Potatos, &c. Sow the former in 9 inches or so of sharp sandy soil, so as to obtain them clean in the skin. Potatos may advantageously be started in boxes of sifted leaf-soil to save frame room, unless early Radishes are wanted, in which case a crop of these may be taken from the frame before the Potatos get far advanced. To forward the Radishes steep the seed in pans containing a little water, which should stand for twelve hours in a forcing-house, after which they soon vegetate. Myatt's Prolific Ashleaf will be found the best for forcing, as it is much hardier than the old kind, and bears double the quantity. To get Capsicums and Tomatos strong and early they should be sown at once in good brisk heat, and when up placed near the glass to keep them from drawing. *J. Shepherd.*

HORTICULTURAL EXHIBITIONS, 1876.

JANUARY.

19.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.

FEBRUARY.

16.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.

MARCH.

1.—Royal Horticultural Society, South Kensington, Meeting of Fruit, Floral, and Scientific Committees.
14.—Manchester Botanical and Horticultural Society. Floral Meeting at the Town Hall.
15.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees. Spring Show.
15 and 16.—Leeds Horticultural Society. Spring Show.
22 and 23.—Bristol, West of England, and South Wales Chrysanthemum Society's Spring Show.
29.—Royal Botanic Society, Regent's Park. Spring Show.

APRIL.

5.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
5.—Royal Caledonian Horticultural Society's Spring Show.
19.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
25.—Manchester Botanical and Horticultural Society. Exhibition of Auriculas, &c., at the Town Hall.
26.—Royal Botanic Society. Second Spring Show.
27.—Royal Horticultural Society of Ireland. Spring Show.

MAY.

3.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
17.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
18.—Royal Horticultural Society of Ireland. Second Spring Show.
24.—Royal Botanic Society. Summer Exhibition.

THE

Gardeners' Chronicle.

SATURDAY, JANUARY 22, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	Jan. 25	Sale of Poultry and Pigeons, at Stevens' Rooms.
WEDNESDAY,	Jan. 26	Sale of Hardy Ornamental Trees and Shrubs, Bulbs, &c., at Stevens' Rooms.
THURSDAY,	Jan. 27	Sale of Lilies, Orchids, and North American Plants, at Stevens' Rooms.
SATURDAY,	Jan. 29	Sale of Standard Roses, Hardy Shrubs, Herbaceous Plants, &c., at Stevens' Rooms.

IF there is one part of the ROYAL HORTICULTURAL SOCIETY which is still worth preserving it is the Committees taken collectively. At the fortnightly meetings of these bodies, the best work that the Society now does, apart from the experimental trials at Chiswick, is carried on. The Committee rooms serve as the trysting places for all interested in gardening and in plants. As month by month elapses, there is always some fresh subject of interest. The meeting on the 19th was a case in point. Messrs. VEITCH sent an admirable miscellaneous collection, comprising many charming and interesting plants; Mr. GREEN, of the Botanical Nurseries, Reigate, sent a group of miniature rarities, to delight the *connoisseur* if not the general public. Lord LONDESBOROUGH sent one of the most singular Orchids that is known, and one so rare that it has not been seen in flower more than once or twice for the last thirty years. Mr. BURNLEY HUME sent the rare Masdevallia Davisii, and there were other things which are alluded to more at length in another column, and which we mention here only to illustrate the interest attaching to these meetings. As to the members of the committees, they in many instances come from a long distance, sit for hours, generally "spoil a day," and render efficient assistance without fee or reward other than a complimentary ticket of admission to the gardens. It will scarcely be believed that in pursuance of some new regulations, many of the members of these committees were on the last occasion refused admittance if they could not show their tickets.

The rule, as a rule, is a good one, and adopted with a view to stop a great abuse, but in carrying it out the Council are bound to see that they do not themselves commit a greater abuse. The rule is obviously and properly intended to exclude the drones, who have made such over-free use of the garden at Kensington, and who refuse to pay adequately for the privilege. So far good, but why exclude the bees?—and why a bridge the slender ticket privileges which they have hitherto enjoyed? Why insult men whose whole aim in coming to the Society is to do its work. Their faces must, we should think, in the majority of cases, be quite familiar to the gate-keepers, or, if not, the simple mention of their name ought to be all that is sufficient. As it was, several of the best known and longest-tried workers for the Society were refused admittance, and only got in by favour, one or more even being obliged to pay the ordinary price of admission for the day. So far also was this rule carried out that even the Society's own librarian, who came unprovided with a ticket, was turned back, to the annoyance and inconvenience of the Scientific Committee, whose secretary he is.

In former times it was an old grievance that the Council did not sufficiently estimate the value of the services rendered by the exhibitors, the members of the committees, and the gardening element generally. Two or more Councils have been overthrown mainly for that very reason. It is utterly unaccountable, then, that the present Council, which their enemies call a gardeners' Council, should have enacted so stupidly inelastic a bit of legislation as that to which we now refer. The late Council, with all its faults, never offered such an insult to the horticulturists.

It is not much to the credit of the present Council, either if, as we believe is the case, they have not only refused to allow a nurseryman a seat on the Council but have positively passed a resolution that no nurseryman shall be entitled at any time to become a member of Council; and this in the face of the ungrudging help always afforded by the leading nurserymen, and while the recollection of what they did at the last great show is still fresh in our memories.

The sooner the Society comes to an end on its present footing the better. Let all be prepared to start afresh, have everything ready, then knock away the shores and launch the new ship.

—— THE illustration, fig. 21, represents a grand old Oak, almost completely covered with Ivy, to be seen in the grounds of Wimbledon House, the residence of Sir H. W. PEEK, Bart., M.P. It is growing, or rather dying, on the banks of one of the lakes, and its trunk at 4 feet 6 inches from the ground measures 26 feet in circumference, and the spread of its branches at the widest part is 55 feet in diameter. The tree, with the exception of two small branches, is entirely clothed with Ivy, which is now covered with berries; and so thoroughly has the Ivy gained the mastery, that the Oak has for some years past been falling into decay. The only portions that retain any vitality are two small branches, which last year produced a quantity of acorns. For the photograph we are indebted to Sir HENRY'S excellent gardener, Mr. OLLERHEAD.

—— The publisher of the American *Gardeners' Monthly* has purchased the title and interest of the *Horticulturist*, published in New York city, and the two monthlies are now combined and issued under the title of the *Gardeners' Magazine and Horticulturist*. Mr. T. MEEHAN still retains the post of editor, which he has held so successfully for seventeen years.

—— The ROYAL AQUARIUM, Westminster, opens its doors this day (Saturday). We have already alluded to the splendid bid for flower-show exhibitors that the Council of the Society has made, and doubt not but that the shows will be of corresponding excellence. The planting and furnishing of the interior with plants has been entrusted to Mr. WILLS, on whom devolves, moreover, the arrangement of the shows. We may then look forward to an agreeable change from the straight lines, uniform levels, unrelieved glare of colours, and other defects which are still too prevalent in flower shows generally. In due time we hope to lay before our readers illustrations of some of Mr. WILLS' groups. The roof is very light and efficient, and has been glazed on Mr. RENDLE'S system. It seems likely to prove a great success. At present the tanks are incomplete, but a fine collection of pictures is already in place, and arrangements are made for photographic studios, musical performances, operas, flower shows, a skating rink, library, reading-room, an insectorium, "for the purpose of illustrating the transformations of insects and the exhibition of living butterflies, &c." We shall revert to the subject on another occasion.

—— The next meeting of the INSTITUTION OF SURVEYORS will be held on Monday evening, January 24, when a paper will be read by Mr. C. G. GREY, entitled "Fences Used in Agriculture." The chair to be taken at 8 o'clock.

—— The retiring members of the Council of the ROYAL HORTICULTURAL SOCIETY are Mr. Henry Little, Mr. Bonamy Dobree, and Mr. W. Burnley Hume, and the Council propose for election in their stead, Colonel R. Trevor Clarke, Lord Alfred Churchill, and Mr. P. W. S. Miles. The following gentlemen are recommended by the Council to be appointed to the offices of President, Treasurer, Secretary, Committee-men of the Expenses Committee, and auditors of the Society, at the annual meeting on February 8:—President: Right Hon. Lord Aberdare; Treasurer: Mr. Henry Webb; Secretary: Dr. Robert Hogg; Expenses Committee-men: Mr. Wm. Campion, Mr. Henry Webb, Vice-Admiral W. W. Hornby; Auditors: Mr. Conrad H. Pinches, Mr. James F. West, Mr. John Lee.

—— AVIARIES are coming more and more in vogue as adjuncts to the pleasure garden, and therefore no apology is necessary for touching upon this subject in our columns. To see birds confined in small cages, or chained up, as parrots commonly are, gives pain rather than pleasure to many people; but in a spacious aviary the conditions are so different that a bird may enjoy its life almost as much as if it had its freedom, especially if it appreciates the friendship of mankind. Mr. P. DELAMAIN of Jarnac, Charente, contributes an account of his successes in breeding parrots to the *Bulletin de la Société d'Acclimatation*, together with a description of his parrot-house. This article seems to us of so much interest that we will briefly summarise it. The house is a lean-to, consisting of a number of dwellings side by side, each looking into a shed, open only in front, and bounded by a small yard, enclosed and covered with galvanised wire netting. Each species of parrot has its separate dwelling, verandah, and yard. The birds enter their apartments by a small perch-hole, below which there is a door to give access for cleaning, &c.; and above there is a ground-glass window. It is unnecessary for us to describe the internal arrangements beyond observing that nests were placed both in the shed and in the close apartment. The bird M. DELAMAIN succeeded in breeding from is the Platycercus palliceps. This species bore 8° or 9° Fahr. of frost without injury. A pair of birds were put into one of the apartments of the aviary on January 25 last, and they roosted in the shed during the cold nights of that month, only taking to the closed apartment when laying commenced. The first egg was laid on March 12 in a wooden trough on the floor; to this one was added every second day until there were six. The young birds were hatched out from April 7 to 11; a month afterwards they were fully fledged and took to the open yard, where they passed night and day, in spite of the heavy rains, and betrayed no symptoms of bad health. In July M. DELAMAIN observed that the old cock-bird began to chase and fight them, and on entering the house was agreeably surprised to find the hen sitting again. This brood was also successfully reared. The birds were fed upon Millet in the spike, Canary-grass seed, Wheat, and oatmeal, with plenty of green stuff, especially Groundsel, of which they are extremely fond.

—— At a recent meeting of the Central Horticultural Society of France, M. A. REVIÈRE, the Director of the Botanic Garden at Hamma, Algeria, presented a number of LARGE PALMS GROWN IN VERY SMALL POTS. According to the report the plants were vigorous and healthy, although the trunks of some almost filled the openings of the pots. The experiment has been on trial for some time, smaller and smaller pots being used, until the minimum

indicate l was reache l. The object was to render the transport to distant places easier, the expense and difficulty attending the carriage of heavy pots or tubs having acted very unfavourably against the trade in large plants. Many of the pots used are not more than 8 inches high, by 4½ to 6 inches across. The secret of this metho l is that the pots are plunged into the open ground, which is constantly traversed by small rivulets or trenches of water. There are two small holes in the bottom of the pots to give the roots exit, but the pots are moved from time to time to prevent the too great development of roots in this direction. This plan was found to answer remarkably well for the Date Palm, which is a most difficult plant to remove when grown in the open ground. Musa Ensete and several other ornamental plants not of the Palm tribe succeeded in this way. Instead of placing them in a house during the winter, as was the practice formerly, and where they are almost certain to change to yellow, they are now left out-of-doors all the winter. Phœnix dactylifera, Cocos flexnosa, C. amara, Corypha australis, &c., bear this treatment without injury, although they are often subjected to the difference in temperature between 32° by night and 68° Fahr. the following day. A First-class Certificate for culture was awarded to M. RIVIÈRE'S foreman gardener.

—— One of the most useful of hardy plants for forcing into flower in early spring is the well-known SOLOMON'S SEAL (Polygonatum multiflorum.) Good, well-established roots should be lifted into 24-sized pots, and kept for a time in a cold frame, but secure from the effects of frost. As soon as they get established, and the crowns begin to swell, they may be transferred to the forcing-house to quicken their growth. Mr. BARRON finds this a very useful plant for decorating the conservatory at South Kensington in spring, and it can be forced as readily as the Lily of the Valley. When the plants have done blooming, they are slightly divided, and planted out in one of the borders at Chiswick in some good soil to become matured, when they are again forced the second year. Its elegant habit of growth lends an additional value to its floral service at all times.

—— At the January meeting of the Edinburgh Botanical Society, Mr. MCNAB laid on the table a branch of QUERCUS CONFERTA taken from a tree 15 feet high and 23 feet in circumference of branches. This tree has not yet parted with a leaf, and presents at this time (January 13) a singular effect in the landscape. Judging from the appearance of the stock on which it is grafted, the probability is that it has been worked on a Turkey Oak. With the exception of some plants composing a Beech hedge where the branches are annually cut, and some young Turkey Oaks, no other deciduous tree has leaves on just now. The Quercus conferta in question has never been subjected to cutting or pruning, notwithstanding the wood seems thoroughly ripened. The leaves in all likelihood will fall off immediately spring action commences. This individual tree has always been late of parting with its leaves, but never showed so many on during a previous winter as it does at the present time. Small plants frequently retain their leaves for a long time, but none had been known to retain them so long as the one here mentioned.

—— We gather from the recently-issued schedule of prizes offered by the ROYAL HORTICULTURAL SOCIETY, that the number of exhibitions for this year has been cut down to four, viz., spring show on March 15, great summer show on June 7 and 8, florists' flower show on July 19 and 20, and great fruit show on November 8. The amount of prize money offered by the Society is about £1115, and special prizes are offered by Mr. BULL, Messrs. VEITCH & SONS, Messrs. CARTER & CO., Messrs. SUTTON & SONS, and Mr. MONRO, to the total amount of £358 odd.

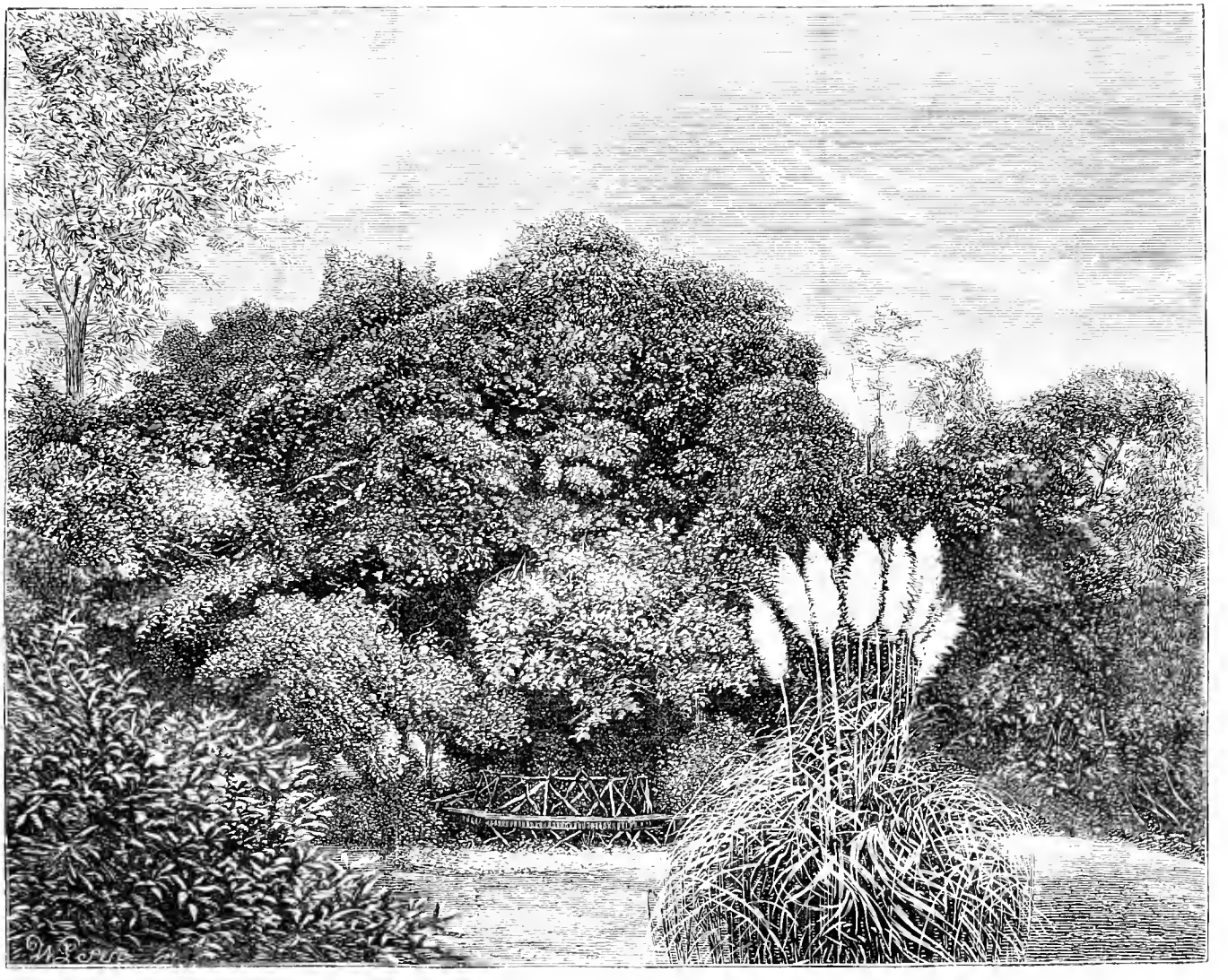


FIG. 21.—IVY-COVERED OAK AT WIMBLEDON HOUSE.

—— Since the notice which was given on the authority of information from Italy, respecting two SUPPOSED NEW DISEASES IN VINES, I have ascertained that one at least is already described by Mons. ESPRIT FABRE in the *Bulletin de la Société d'Agriculture de l'Hérault*, 1853, under the name of Broussins, and which is well known in this country. Of this a characteristic figure is given at plate 4. The other is, in all probability, the same with what he calls Anthracnose, which is figured in plates 4 and 5. *M. J. B.*

—— We learn from Professor MCNAB that the microscopical characters presented by the leaves of Picea Parsonsiana, forwarded by Mr. BARRON, of Elvaston, are the same as those of the plant known as P. Lowiana. The leaves of P. grandis, Douglas, and P. lasiocarpa, Balfour, exhibit identical characters.

With the information afforded us by Mr. BARRON, and the new aids to the determination of species suggested by Mr. BERTRAND, there seems a fair probability of some definite understanding being come to as to the nomenclature of these plants. The general principle to be acted on when once all doubts are removed, is to select the oldest duly published name.

—— The batch of plants of RICHARDIA ÆTHIOPICA which Mr. BARRON has now in such fine condition at Chiswick, serves to illustrate the great advantage derived from treating this plant in a liberal manner. Very vigorous plants, growing in 24-sized and larger pots, are now throwing up splendid flowers, and the plants, when in bloom, are sent to South Kensington for the decoration of the conservatory, and when they have answered this purpose they are returned to Chiswick, turned out of pots, and planted out in trenches, similar to those used for Celery, in a soil almost wholly manure, and kept well watered during the summer. Here they ripen their growth, and at the end of the summer they are again potted in rich soil, when they begin to start into growth, and then stood in a shady place in the open air and kept well watered. They are eventually removed to a greenhouse to flower, and kept well supplied with water to induce the greatest vigour of development. —CHRYSANTHEMUM FRUTICOSUM is a conspicuous object in one of the cold houses at Chiswick just now —large shrubby plants in pots carrying good heads of flower, and, despite the gloomy weather, not failing to yield a succession of flowers. The flowers last a long time in a cut state. It is a most useful winter-flowering plant for a cold house, and it is easily propagated by cuttings in early summer. It is also a valuable decorative plant in the open garden in summer, and is much used in this way in the Paris gardens. Well established plants in pots flower through both summer and winter.

—— Mr. W. HERRING, gr. to the Hon. W. O. STANLEY, Penrhos, Anglesea, informs us that GEASTER MICHELIANUS, found at that place in 1874, appeared again in the same spot in 1875.

—— The show day of the RICHMOND HORTICULTURAL SOCIETY is fixed for June 29.

—— In the programme of the Society of Arts we see announced for Wednesday, February 9, a paper to be read by Mr. SHIRLEY HIBBERD on THE CULTURE OF HARDY FRUITS, with especial reference to prevailing errors, and the possibility of augmenting and improving the production of hardy fruits. The paper will, we understand, be illustrated by trees, models, &c.

—— At a recent meeting of the Botanischer Verein der Provinz Brandenburg, Professor BRAUN exhibited a very large specimen of POLYPORUS SCHWEINITZII, which grew on a large tree of Pinus Strobus in the Berlin Botanic Garden. It consisted of three fruiting bodies grown together, and measured 0.64 m. by 0.44 m.—about 25 inches by 17 inches. This species is also found in the Pine forests of Germany. The same gentleman showed living specimens of a monstrous form of Chelidonium majus, in which some of the lower lobes of the leaf, which were almost reduced to the midrib, bore an inflorescence. It was supposed to have originated from the variety laciniatum. He also mentioned that Rudbeckia hirta has become naturalised in several parts of Germany. At the same meeting Mr. KNOTZ referred to a collection of plants made by Dr. SCHUR, one of the officers attached to the Transit of Venus Expedition, in the Auckland Islands. He announced the following additions to those enumerated by Dr. HOOKER in his *Handbook of the Flora of New Zealand*:—Lomaria lanceolata, Gleichenia flabellata, Lycopodium densum, and Phormium tenax.

—— The well-known gardens at Gunnersbury Park, Acton, the residence of Baron LIONEL DE ROTHSCHILD, are never without some features of interest to visitors. The long Peach-house is fast becoming an interesting sight, the trees breaking into fine bloom. Previous to commencing forcing, the trees are well washed with soft soap and water, and then every branch is painted over with a mixture of cowdung, soft soap and sulphur, or Gishurst Compound, and the addition of a little clay. This dressing holds the moisture and greatly assists the trees. The East Indian Orchids, of which a fine collection is grown at Gunnersbury, are in superb condition —green, healthy, and making a famous growth, and fully illustrates Mr. RICHARDS' qualifications as a successful cultivator. Mr. RICHARDS holds the opinion that Orchids are too frequently over-potted, and his practice is to grow his Orchids in comparatively small pots. Two examples of Odontoglossum vexillarium are making a very strong growth—a moist and rather warm atmosphere suits it well; an example of Angræcum sesquipedale is remarkable for its size and vigorous appearance. A group of Amaryllis can be seen throwing up flower-stems of enormous size, though in small pots. They are never repotted, and when they begin to make growth are treated liberally with liquid manure. Quite dwarf bushes of the common and Persian Lilacs are now laden with large spikes of flower, and their perfume quite fills a large house with a most pleasant fragrance.

—— Among the hardier Palms, KENTIA FOSTERIANA deserves especial mention, because so well adapted for culture in a cool house. Of even more elegant habit than Seaforthia elegans, it is not so subject to red-spider and thrips as the Seaforthia, and always maintains a nice green healthy character when duly attended to. Latania borbonica and Aspidistra lurida variegata deserve mention also, because so well adapted for sitting-rooms; the latter, in fact, will maintain its freshness and handsome variegation unimpaired for a long time in a dry atmosphere. The leaves require to be occasionally washed, to rid them of the dust deposit that is sure to gather on them, and the same holds good of the Latania.

—— The fine old ECHEVERIA RETUSA is now conspicuous in one of the plant-houses at Chiswick, small plants being literally loaded with flowers. It will bloom equally well in a roomy window of an ordinary living-room at this time of year, if it can enjoy the ordinary warmth of a fire and plenty of light. It is of great value for cutting from, as the flowers last a long time in a cut state.

—— M. DELEUIL, nurseryman at Marseilles, offers the following HYBRID ECHEVERIAS:—E. colossea, the issue of E. Van Celsii, impregnated by E. atropurpurea, with leaves exceeding a foot in length; E. cochlearis, a hybrid between E. linguæfolia, female, and E. atropurpurea, male parent; E. mirabilis, between E. bracteosa (Pachyphytum bracteosum) and E. Scheeri, having superb opaline leaves tinged with rose; E. retusa autumnalis, obtained from E. glauca, fertilised by E. retusa, and abundant bloomer in the autumn; E. secunifera, between E. secunda and E. macrophylla; E. spiralis, between E. decipiens and E. californica; and E. stellata, the result of a cross between E. glauca and E. navicularis.

—— *La Belgique Horticole* for November and December, 1875, contains coloured plates of Masdevallia Estradæ, Rchb. f., described in this journal, new series, vol. i., 435, and Vriesia Platzmanni, a handsome new species with purple bracts and yellow flowers, not yet in cultivation, and also an uncoloured plate of Oxycoccos macrocarpa. The printed matter includes a supplementary descriptive list of Masdevallias, a translation of R. BROWN'S *Geographical Distribution of the Coniferæ and Gnetaceæ*, and extracts from M. PLATZMANN'S *Aux der Bai von Paranagua*, &c.

—— Among the newer ZONAL PELARGONIUMS two of them deserve special mention for their fine qualities. One is Jealousy (GODBY), a most distinct variety, of a rich salmon-yellow colour and striking white eye. The other is Dazzler (PARKER), vivid vermilion-scarlet, and remarkable for its large and conspicuous white eye. Both the varieties are characterised by high-class quality, and are grand when cultivated in pots.

—— We read in the *Chronique de la Société d'Acclimatation* that the SAPADILLA PLUM, Sapota Achras, is now offered for sale in Paris, whither it is sent from Algeria. This fruit is not eaten before it is blet ripe, when it is said to possess a pleasant sweet flavour. But with the present rapid means of communication there are many far more delicious tropical fruits than this within the reach of the inhabitants of London and Paris.

Botanical Notes.

IN the *Botanische Zeitung*, Nos. 48 to 51, Dr. Kienitz-Gerloff has some new contributions on the DEVELOPMENT OF THE SPOROGONIUM OF LIVERWORTS, the species specially examined and illustrated being Preissia commutata, Grimaldia barbifrons and Sphærocarpus terrestris. Dr. Velten contributes an article "On the Development of the Cambium, and N. J. C. Müller's Ideas on this subject." The remaining space is mainly filled up with reports of the proceedings of societies and notices of books.

—— The principal article in Nos. 31 and 32 of the *Flora* is by Dr. Celakovsky, on the INTERPOLATED EPIPETALOUS STAMINAL WHORL. It is not concluded, and we, therefore, leave it for future comment. Dr. Carl Krans contributes an article on the "Genesis of Vegetable Colouring Matter," the ninth of a series on vegetable physiology. Mr. J. M. Norman reports having discovered fruiting specimens of Alectoria nigricans in western Finmark, the first observed in Europe. This lichen is frequent in Finmark, and abundant in some localities, but had hitherto only been found in a sterile state. Mr. Norman collected it last year sparingly in fruit in about 70° N. lat. The fruiting specimens were not growing on the ground itself, but upon a dead Juniper.

—— According to Von Ebermayer, in his *Die gesammte Lehre der Waldstreu*, the SIZE OF THE LEAVES OF THE BEECH decreases as the altitude above the sea-level increases. Thus 1000 leaves at Schönthal, near Aschaffenburg, at an elevation of 133 metres, presented a total surface of 3414 square metres; the same number from the Auerbacher Schloss, Odenwald, altitude 237 m., a surface of 2128 sq. m.; ditto from the Guttenberger Wald, near Würzburg, altitude 324 m., a surface of 2112; ditto from Melibocus, Odenwald, altitude 514 m., a surface of 1674 sq. m.; ditto from Hohenau, the upper limit of the Beech in the Bavarian forest, altitude 1344 m., a surface of 910 sq. m. In like manner, under the consideration of the chemical composition of the leaves, we are informed that the amount of ash from the fallen leaves is smaller as we ascend higher. The percentage of pure ash from Beech leaves taken at different altitudes varied from 4.81, at an elevation of 810 m., near Hohenau, to 9.91, at an elevation of 130 m., near Aschaffenburg. The same differences were found to exist in the leaves of the Spruce Fir. Thus at Oberammergau, 935 m., they furnished only 3 75 per cent. of ash, whilst at Aschaffenburg, 130 m., they gave 10.19 per cent. The percentage of phosphoric acid also diminishes with increasing altitude, the greatest difference obtained being from 1.85 at the highest station, to 5.85 grammes in a thousand parts of Beech leaves free from water.

—— According to Dutailly, *Bulletin de la Société Linnéenne de Paris*, the sucker-like discs on the tips of the tendrils of Ampelopsis tricuspidata are developed without contact with any foreign body, whilst in A. hederacea this is not the case.

—— Dr. Gutziet has lately published a small pamphlet on the OCCURRENCE OF ETHYL-ALCOHOL IN THE VEGETABLE KINGDOM. It appears, from his investigations, that ethyl combinations are present in the unchanged sap of the fruits of some of the Umbelliferæ, Heracleum giganteum and Pastinaca sativa, for example. But it is still doubtful whether the combinations detected were present as such in the fruits or in the form of ethers which were decomposed by distillation. The ethyl combinations disappear gradually as the fruit approaches maturity.

—— The part of the *Linnæa* completing the thirty-ninth volume contains a continuation of the enumeration of MOSSES COLLECTED IN CENTAL AFRICA by Schweinfurth, by C. Müeller; and the Compositæ of Schimper's Abyssinian collections, by Vatke, from Ethulia to Sonchus, embracing sixty-one genera and 145 species. There are no new genera, and only about a dozen new species described.

Home Correspondence.

Hardy Palms.—In your number of January 8 I was rather surprised to see an assertion by Mr. Wildsmith, Heckfield, that "Aralias, Australian Dracænas, Phormiums, and Palms, many of which are very nearly hardy, and prove perfectly so with the protection of a mat." We have a much milder climate in this locality (Anglesea) than they can possibly have in the part of Hampshire where Heckfield is situated, and a very superior soil, and with these advantages the only Palms that will do with us, and they require a little protection, are Chamærops Fortunei and C. humilis, Dracæna lineata, and D. stricta (Charlwoodia) also succeed very well. I should be greatly obliged if Mr. Wildsmith would favour us with a list of what Palms and Dracænas he has found to succeed with only the covering of a mat. General assertions like the above without proof are calculated to do serious injury to many good gardeners who have tried plants said to be hardy and have failed. *Owen Lloyd, Anglesea, January* 11, 1876.

Mistleto.—It is the Silver Fir on which it grows here: we have a grove of Acacias on which it grows in great numbers. We have another great curiosity here, "Witch Brooms" as they are called. They grow out of the horizontal branches of the Silver Fir, much in the manner of Mistleto, but are coniferous vegetables; some look like a deformation of the branch, some look like excrescences, but others look exactly as if they had their own roots growing between rind and wood, and feeding in the cambium. They have no main shoots, but look like bushes; at this season they look like large birds' nests, some as large as that of a stork. They look so because, unlike the plant on which they grow, or of which they form part, they have deciduous leaves, and seem to be a heap of dead Fir branches; their leaves are different from those of the plant on which they grow. *Max Leichtlin.* [This outgrowth is due to fungus agency. EDS.]

Psychotria cyanococca.—This quaint and interesting plant, from Chontales, Nicaragua, is very rarely met with, even where large collections of plants are grown for winter decoration. It would be difficult to find any other plant which displays, either in its fruit or flowers, such a charming ultramarine colour as is exhibited by the berries of this plant. It thrives well in a moist stove during the growing season, but a drier atmosphere is essential during the resting period. *J. W. H.*

Eupatorium Weinmannianum.—After reading Mr. Sheppard's interesting account of this very useful autumn and winter-flowering plant in the *Gardeners' Chronicle*, December 18, 1875, also a second notice of it with woodcut, January 8, 1876, I am induced to say a few words respecting it. It is all that Mr. Sheppard says of it, and cannot be too highly recommended for the purpose he speaks of. It is very pleasing to find an old acquaintance brought again into notice. It is some eighteen years since I first grew this plant in the gardens of the late W. Borrer, Esq., of Henfield, Sussex, both as a greenhouse plant and in the open garden. The plant from which the figure in *Refugium Botanicum*, tab. 155, was taken, was raised from a plant which had formed a bush of considerable size on a south border, and which had lived there unprotected three years. It would be interesting to know if it has been tried elsewhere, or that its somewhat hardy nature is generally known, and also of what part of Brazil it is a native. In addition to the various names given to this plant in gardens, and quoted in the *Gardeners' Chronicle*, January 8, 1876, I have seen it under the name of E. corymbosum. *C. Green, Botanical Nursery, Reigate.* [The locality, "Brazil," was an error; it should have been Mexico. It seems also that the earliest name of all is E. ligustrinum. EDS.]

Open-air Ice Houses.—In the face of a small hill of sand here a hole sufficiently large was excavated to hold any excess of ice after the ice-houses were filled. There being a fall in the ground below the hill, a small drain was made to receive any water from the melted ice, but the bottom of the pit being sand this drain was not of so much benefit as it would have been on hard ground. The ice in this sand hole generally kept much better and longer than in the ice-houses, and furnished the supply depended upon late in the summer and autumn months. When the hole was sufficiently filled with ice, dry Fern was stuffed in on top of the heap, so as to fill the space between the ice and sand quite full. The face of the heap was then lined with dry Fern and Oak leaves, and covered over with sand to the depth of a foot, and beaten hard to prevent rain from penetrating too much. Perhaps a piece of old tarpaulin, or a wooden shutter, would have been an improvement, to have kept rain or snow off the face of the heap, and likewise been handier for closing up the hole when taking the ice out. *William Tillery.*

Crocus veluchensis.—I do not think Crocus veluchensis can rightly be numbered among the new hardy plants of 1875. It was cultivated, drawn, and described by Dean Herbert, and figured in the *Botanical Register*, thirty years ago. It is to my mind much more akin to C. vernus than C. Sieberi (nivalis). It may always be known by the peculiar dark purple zone just below the tip of each outside petal. It is also much dwarfer in its growth than C. vernus, and the leaves are much shorter at the time of flowering. All these distinctive characteristics are beautifully delineated by Dean Herbert in his figure of this species. I have found it to be delicate and impatient of cold, and it does not increase fast. I have several times had a Crocus sent me as veluchensis which is not that species at all, but simply a variety of C. Sieberi with a conspicuous throat. *H. Harpur-Crewe, Drayton-Beauchamp Rectory, Tring, Jan.* 15.

A Worm Excluder.—Messrs. Dick Radclyffe & Co. deserve a testimonial. They know how to make us laugh. Some time since this humorous

FIG. 22.—HAPPINESS!

firm showed us a view from a back window in London as it is, and as it might be. Acting on the same principle, they now show us a Pelargonium which requires an anthelmintic (fig. 23), and one which, having been protected from the attacks of these undesirable earthworms, is firm and joyous even to the containing pot! (fig. 22). The invention is very simple,

FIG. 23.—"USELESS!"

consisting merely of a small piece of perforated zinc, which prevents ingress of worms from below, placed over the hole in the pot beneath the crocks. The cost is so small that no harm will accrue from the trial of this "registered" invention, and it is worth a good deal now-a-days to have a good laugh.

"Thrum:" "Boll."—Bacon, in his *Natural History*, says: "All moss hath here and there little stalks besides the low *thrum*." It is derived from Isl. *thraum*, the end of anything. "Boll" signifies stalk. "The Flax was bolled or stalked." "Boll" means anything that is round, and is derived from the German *bol. W. F. Radclyffe.*

Croci Changing Colour.—The correspondent of *Science Gossip* who says that he planted a quantity of blue and yellow Croci, and found that after two years they all turned yellow, has, I feel convinced, unintentionally made some mistake. The only blue and yellow Croci which can be procured in any abundance are C. vernus and C. maesiacus (luteus). The former varies in colour from blue to white and is not constant, but is never yellow. C. maesiacus (luteus) is always yellow, and does not vary at all. I believe it to be perfectly impossible for any blue Crocus to become yellow. *H. Harpur-Crewe, Drayton-Beauchamp Rectory, Tring, Jan.* 15 [We concur in our correspondent's opinion. Probably the roots of the blue one died out. EDS.]

Gumming in Peach Trees.—During the floods in October last the river overflowed and got into my Peach-houses, to the height of some 4 feet. When the water had gone down we had the trees thoroughly well sponged and cleaned, and for a time they seemed to be going on well and not ailing anything. Lately, however, they have commenced to gum, and there is scarcely a tree that is not affected, some very badly, and others only slightly. Will any of your readers kindly inform me what is best to be done to them, and if it will permanently or only temporarily injure them? *R. B.*

Camellia Buds Rotting.—Would any of your readers kindly give me a little information about Camellias? Mine seem to do very well during the budding time, but directly the buds get well set and about the size of a nut, they rot away; consequently, we have no blooms. I have three or four specimens that are perhaps some ten or twelve years' old, all affected in this manner, although they are kept in the same house with other plants that do remarkably well. We have tried repotting, &c., but all to no purpose. *R. B.* [Perhaps over-potted. EDS.]

Borage.—Having read the letter on Borage for pot culture at p. 84, allow me to say that Borage will grow very freely in pots, and yield a large supply of leaves. I have grown it for three years in succession, and it gave a large quantity of leaves. I sowed the seeds in pots early in the spring, using from 300 to 400 large size 60-pots, and sowing one seed in the centre of each pot. They were then placed in the early Peach-house, and soon afterwards we had a plentiful supply of leaves, till the weather was fine enough to turn them out, when they were planted outside, and soon threw out new branches, that gave us all we wanted through the summer and autumn months. *W. Paul, Edinburgh.*

Defoliation of Conifers.—Reading the report of Dr. Stark's paper reminds me that, although little has been written on this subject, gardeners are familiar with the fact that many of the Cupresseæ shed their ultimate branchlets. I am not sure, however, whether it had previously been put on record for the evergreen species of Thuja, &c., but I think I have read something about it before. However that may be, I expressly mention in my *Handbook of Hardy Trees, &c.*, that the deciduous Cypress, Taxodium distichum, and Glyptostrobus pendulus have deciduous branchlets. In these two trees the leaves, of the former especially, are more highly developed, and the falling off of the branchlets is the more remarkable. I do not claim the merit of being the first to mention this peculiarity; indeed I was under the impression that it was common knowledge among cultivators of this class of plants [Yes]; but this circumstance does not detract from the interest and value of Dr. Stark's observations. *W. B. Hemsley.*

Lilium neilgherrense.—As there has been an importation of the fine Indian Lily, L. neilgherrense, it may, perhaps, interest some of your readers to know that this Lily appears to be much easier of cultivation than L. polyphyllum. Some few bulbs I had last year, and grew in a cold orchard-house, showed on being re-potted in autumn to be strong and healthy. The bulbs I have lately seen have arrived in very good condition. *George F. Wilson.*

Sports Occurring in the Pelargonium.—In your journal of the 8th inst. you extract from the *Revue Horticole* a notice of a double Pelargonium, producing two coloured flowers from the branches of the opposite side of the plant, although there is but one stem to the plant up to a certain height. The notice does not state whether this sport occurred on a seedling, or whether the plant was the result of a cutting. I should like information upon this point, as I have a seedling plant which exhibits, not so striking a difference of colour as the one quoted, but which produces flowers with sufficient difference in their shades of colour to be sent out as distinct varieties. The plant grew up a single stem to the height of 9 inches, then, instead of going on straight, as is mostly the case with seedlings until they flower, it forked into two branches, and when it flowered the colour of the flowers produced were of a lilac pink on the one side, and rose-pink on the other. The cuttings that have been taken off these branches have been kept under different numbers, none of which have, as yet, flowered; so it remains to be seen if they will retain their distinctive colours. There is a slight difference in the habit of growth, the rose pink side being the most robust grower, and in this the cuttings exhibit the character of the parent branch. I see no

reason why seedling plants should not produce flowers of different colour from the opposite sides of the stem, as well as is commonly the case as regards the foliage. Not only does it frequently occur that in seedlings bred for tricoloured foliage, one side of the stem sends forth green and the other variegated foliaged branches, but I once saw a seedling plant which produced golden tricoloured foliage on the one side and silver tricoloured foliage on the other. It would be well to watch and note whether this tendency of the Pelargonium to sport as regards the colour of its flowers at the present time is occurring generally. It seems also to be sporting in England and on the Continent into doubleness also. At the time Mr. Grieve raised his first tricoloured foliage varieties the Pelargonium showed symptoms of sporting (quite independent of those bred from the variegated parents) into variegation both in England and on the Continent at the same time. These facts, as regards the changes occurring in plants, or trees, are worthy of record, because it is just possible they may throw some light upon the formation, not merely of new varieties, but of what are termed species, both in the vegetable and animal kingdoms, for I think it probable that each of these sports, if they were not impregnated by single varieties, and perpetuated from seed, but were left to themselves (I am alluding now to the sports into doubles) a given number of years, would refuse to breed with the single varieties from which they sported, and would then be said to be of a distinct species. The watching the course and noting these physiological facts as they occur, unimportant as they appear at first sight, might lead on to the solving of some of the conjectures mooted of late as to the origin of all species. *John Denny.*

The Weather at Inverary Castle, 1875.—Although the rainfall here for the year 1875 was much less than usual, it will be considered large in comparison with more southern districts, even with the excess they have been subject to; but notwithstanding the actual dissimilarity which exists, the distribution of rain in this locality was such that during the summer months vegetation of all kinds continued growing uninterruptedly to the close of its growth. Sunshine and shower prevailed alternately during the summer months, with north wind occasionally intervening. Vegetables in the kitchen garden, which in our ordinary seasons are uncertain crops, this year turned out well; for example, French Beans, Vegetable Marrows, Peas, and Carrots. Fruits on the walls were also abundant and good in quality. Of Pears I may mention a few—Althorp Crassane, Jargonelle, Autumn Bergamot, Beurré Rance, Broom Park, Colmar, Winter Nelis, Hessle, Uvedale's St. Germain (but only fit for cooking purposes), Passe Colmar, Williams' Bon Chrétien, Moorfowl Egg (the latter most valued here), Brown Beurré; but in the open quarters in the kitchen garden Pears do not come to maturity, and even on the walls the branches must be kept wide apart, and the spurs well thinned out too. Plums on the walls, such as Coe's Golden Drop, Kirke's Jefferson, Magnum Bonum, Royale Hâtive, and Orleans; the Victoria does very well in the open quarter, but many of the other hardy Plums are liable to burst after wet weather. Such Apples as the Red Streak, Keswick Codlin, Tower of Glamis, Cellini, and others, succeed well here in good seasons. The intervals of warm, dry weather between the showers was all that could be desired for the flower garden, and imparted a beauty to it the like of which I have not seen since I came here.

Rainfall at Inverary Castle in 1875.

	Inches.		Inches.
January	6	July	1.50
February	2	August	6
March	2.50	September	7
April	2	October	5
May	4	November	4
June	5	December	11

John Cale, Inverary Gardens.

BUNCHES v. TENDRILS.

THE remarks which follow are designed to show the possibility of the convertibility of Vine tendrils into fruit-bearing branches by mechanical means, and the effect of weight in preventing the fruiting branches of the Grape Vine from degenerating into mere tendrils.

These are points that seem to have escaped the attention of Mr. Darwin in his charming and instructive work on climbing plants. I shall, with your permission, preface my remarks with extracts from this work on the natural order Vitaceæ. These will prove most instructive in themselves, and throw much light upon the additional facts which I intend to adduce in relation to the possible modification of structure and formation by mere weight or pressure. On p. 137 of Mr. Darwin's work we find the Vine tendril of the usual type, a figure of which is appended (1).

The author describes the tendril with his usual lucidity thus:—"It is thick and of great length; one from a Vine growing out-of-doors, and that vigorously, was 16 inches long. It consists of a peduncle (A) bearing two branches which diverge equally from it. One of the branches (B) has a scale at its base; it is always, as far as I have seen, longer than the other, and often bifurcates." This is but one example of thousands of the care and penetrating observation of the author. I venture to affirm that there are hundreds of Grape growers who never noticed any scale, and thousands who failed to notice that it was a signal of difference between the two branches of a tendril. I hope the hint may be taken by our rising gardeners that nothing is too small to be noted; more, that it is in the regions of the smallest structural or other differences that great principles are seen in course of evolution and important truths discovered. "The branches when rubbed become curved, and subsequently straighten themselves. After a tendril has clasped any object it contracts spirally, but this does not occur where no object has been seized. The tendrils move spontaneously from side to side; and on a very hot day, one made two elliptical revolutions at an average rate of 2 hours 15 min. During these movements a coloured line painted along the convex surface appeared after a time on one side, then on the concave side, and, lastly, again on the convex side. The two branches of the same tendril have independent movements. After a tendril has spontaneously revolved for a time it bends from the light towards the dark. Mohl says that in a Vine planted against a wall the tendrils point toward it, and in a vineyard generally more or less to the north."

It will also be necessary to give the author's illustration of a flower-stalk and tendril from p. 139, showing that the tendrils of the Vine are modified flower peduncles. The woodcut, fig. 2, is a representation of a bunch of Grapes with spur, its accompanying tendril. "It consists of the common peduncle A and of the flower tendril B, which is represented as having caught a twig, and of the sub-peduncle C bearing the flower-buds. The whole moves spontaneously like a true tendril, but in a less degree; the movement, however, is greater when the sub-peduncle C does not bear many flower-buds. The common peduncle A has not the power of clasping a support, nor has the corresponding part of a true tendril. The flower tendril B is always larger than the sub-peduncle C, and has a scale at its base; it sometimes bifurcates, and therefore corresponds in every detail with the larger scale-bearing branch B, fig. 1, of the true tendril. It is, however, inclined backwards from the sub-peduncle C, or stands at right angles with it, and is thus prepared to aid it in carrying the future bunch of Grapes. The lower and naked part of the sub-peduncle C is slightly sensitive to a rub, and I have seen it bent round a stick and even partly round a leaf with which it had come in contact." I have often met with cases of this sort, one of which I reproduce in fig. 3. Vines in certain conditions and localities frequently show this tendency of the flower-branches to run into tendrils, a tendency that is confirmed if the sub-peduncle C is allowed to remain twisted as in fig. 3. Mr. Darwin continues: "That a sub-peduncle has the same nature as the corresponding branch of an ordinary tendril is well shown when it bears only a few flowers, for in this case it becomes less branched, increases in length, and gains both in sensitiveness and in the power of spontaneous movement. I have twice seen sub-peduncles which bore from thirty to forty flower-buds, and which had become considerably elongated and were completely wound round sticks, exactly like true tendrils. The whole length of another sub-peduncle, bearing only eleven flower-buds, quickly became curved when slightly rubbed; but even this scanty number of flowers rendered the stalk less sensitive than the other branch that is the flower-tendril, for the latter after a lighter rub became curved more quickly and in a greater degree. I have seen a sub-peduncle thickly covered with flower-buds with one of its higher lateral branchlets bearing from some cause only two buds, and this one branchlet had become much elongated, and had spontaneously caught hold of an adjoining twig, in fact it formed a little sub-tendril."

The gradations, as the author triumphantly shows (p. 141), from the ordinary state of a flower-stalk, as represented in the woodcut (fig. 2), to that of a true tendril (fig. 1), are complete. The common sub-peduncle sometimes partially assumes all the characteristics of a true tendril, and a true tendril sometimes carries on its extremities a single flower-bud, which I have ventured to represent on the end of the common tendril (fig. 1, A). Hence, there can be no doubt that the tendril of the Grape Vine is a modified flower peduncle. Large branched bunches of Grapes or double clusters are the product of the conversion of tendrils into fruiting branches, and on this hypothesis the huge masses recently shown at Edinburgh as single bunches may be accepted as weighty arguments in favour of the transition, variation, or modification of structure, or the higher development of inferior parts or species. So far as I am aware, my dear and gifted late brother, Robert Fish, was the first to discover the effects of pressure or weight as a modifying or transforming force in this matter. Having the charge of a large vinery at the Messrs. Tattersalls', Hyde Park Corner, London, between thirty and forty years ago, he found that though he could command good shows of Grapes by means of the genial atmosphere provided by a stock of fermenting manure within the house; hardly had the flower peduncles grown to anything like their full length when, probably in sympathy with dormant and diseased roots, they began to twist round any branch or twig they came in contact with, and to run into tendrils, as shown in fig. 3. He soon found that when the twists were removed the tendency to run into tendrils was arrested. This was one step gained. Partly to better the lesson thus learned, and with a view of confirming the dependent position, small weights were attached to the bunches, as shown in fig. 4. The result was as gratifying as it was at first unexpected. The untwisting and the weight together soon checked the formation of tendrils, and forced the sub-peduncle into its proper character of a bunch of Grapes. When I lived with my brother at Putteridge Bury, there was an old vinery with the roots in a bad state, or very deep. The Grapes in this were always in danger of bolting off into mere tendrils, unless weighted into fruit bearing, and we used to weight each with small pebbles as soon as they fairly showed. If any were missed, or if the pebble or other weight slipped its tie, these bunches ran off into tendrils, while I do not remember an instance of one sufficiently weighted doing likewise. Since then, during more than twenty years' practice, I have weighted many suspicious-looking bunches, and always with the result of checking the degeneration of a fruit branch into a mere tendril. In this reversion or degradation of parts there is often a great variety of structure. The flower-stalks, soon after they are formed, often branch off into a number of hooked semi-tendrils, resulting, of course, in a fruitless state; on the other hand, true tendrils that show flowers on the extremities or other parts—for these flowers are by no means confined to the extremities—set and swell their fruit better if also weighted.

It is well also to note that the weighting of the sub-peduncles is not nearly so effectual, unless the twist at C, fig. 3, is carefully undone. There can be no doubt that that single revolution dominates to a large extent the character of the entire branch beyond, and confirms in a powerful manner its tendrilward tendencies; in fact, unless that circle is undone, it is comparatively useless to attempt to lure back the runaway bunch into fruitfulness. I have even seen such sub-peduncles weighted above the twist suddenly snap off and the remaining portions run off into true tendrils. More wonderful still, perhaps, as showing something akin to a sympathy of parts, and like dominating like, the success of weighting is enhanced by removing the tendril B, as shown in fig. 4. I have also noticed that the tendency of the sub-peduncle to form a tendril is increased in proportion to the strength and length of the tendril B, and would, therefore, strongly recommend the removal of all tendrils at the earliest possible moment.

Another point of great practical interest remains. The transition of the sub-peduncles of the flower-stalks of the Vine into tendrils in any considerable number is a sign that something is wrong with the roots. It is thus a curious example of the law of the compensation of force. Vital force, from some cause or other, is lowered, and is unable to carry a heavy load of Grapes. Structural modification of parts comes to its relief, and transforms the heavy and exhausting load of Grapes into a series of climbing tendrils, that help the Vine to mount higher, grow further, and perhaps re-establish its health. Hence the weighting of runaway Grapes brings with it other duties—those, for instance, of renovation and replenishing; otherwise we may gain a crop at the

expense of the health and strength of the Vine; for there can be no doubt that the weighting, in so far as it is successful in the arrestment of the degeneration of the fruiting branches into tendrils, thwarts the intention of Nature, which was to carry through that season little or no fruit.

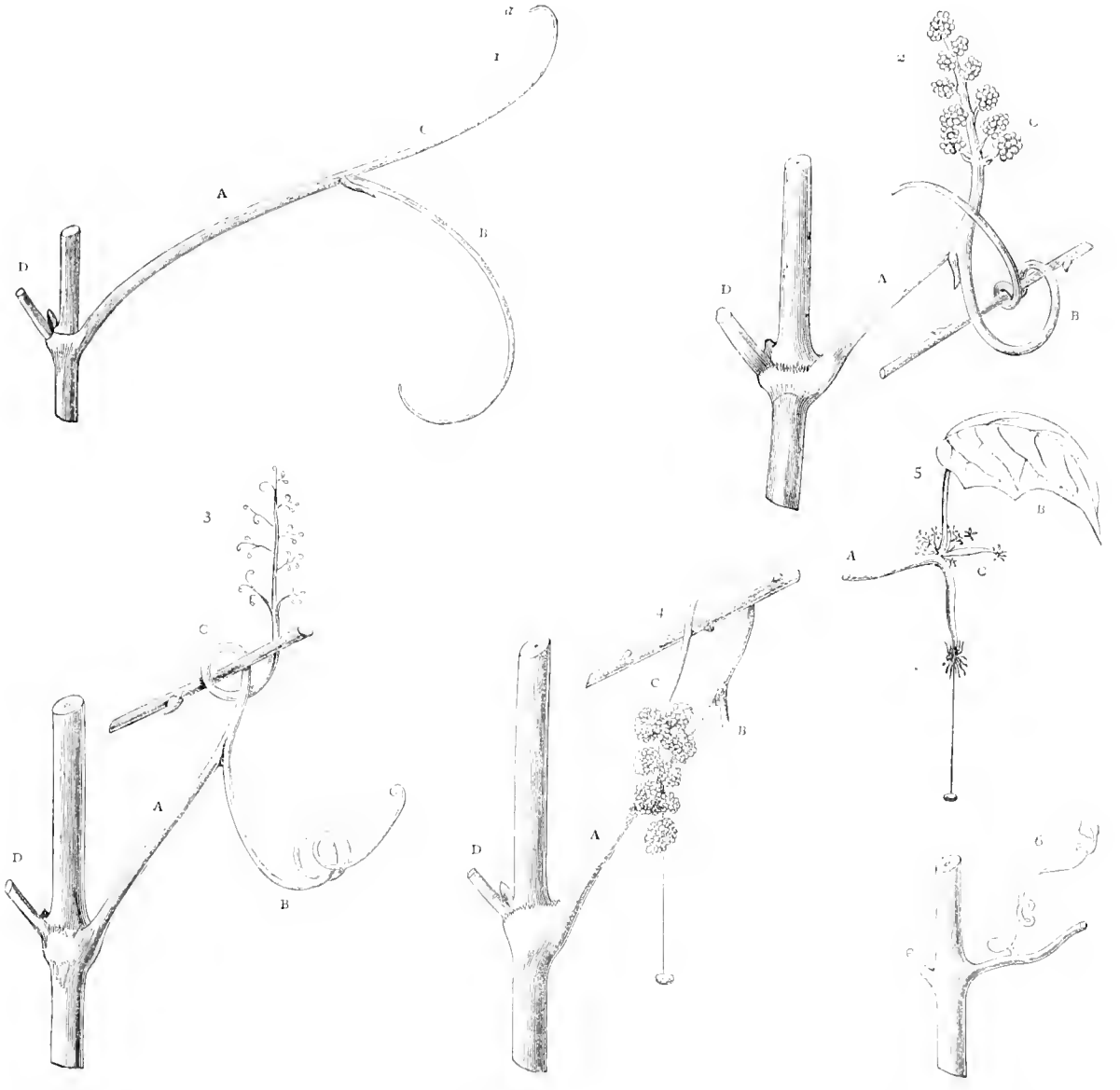
The effect of weight in promoting fruitfulness is further seen in the fact, that as soon as any fruit sets and begins to swell on the sub-peduncle, the formation of tendrils ceases. The natural weight of the berries brings back the wayward branch, as it were, to its proper business—that of fruit bearing. So strong is this check that I have seen tendrils on the fruit bearing branch attempt to form flowers after the berries began to swell. The same fact is strikingly illustrated by the second flower on Muscat Grapes. I never remember to have seen one of these sub-peduncles run into a tendril; on the contrary the tendril is often wanting, or changed into a part of the bunch, thus converting it into a "cluster." Another singular fact has often been observed in regard to these, and that is, that however imperfectly the first crop may have set or swelled off, the second or third successional crops invariably set and swell well. It would be interesting to prove what effect the weight of the first crop had on the freer setting and more rapid swelling of the second.

Or are plants, the Vine especially, subject to the laws of habit, carrying each succeeding crop more easily after every essay at fruit-bearing—like the example of its second attempt the same season? I know this interesting fact may be explained by other causes, but is it not probable that the weight of the first crop is a factor of some weight in the production of the second? It seems pretty certain at least that fertility reproduces itself, unless absolute exhaustion puts an end to its continuity, the mere weight of the produce may be the key that partially unlocks the mystery. That it has something to do with it is almost demonstrated, else how can the facts already advanced be explained?—or the additional one that by weighting the blossoms of Cucumbers and Melons, as shown in fig. 5, we promote the setting, and stimulate the swelling of the fruit? I have adopted this course hundreds of times, and always with uniform success.

The woodcut (fig. 5) shows a small branch with a cluster of small fruits, and one weighted. Now, in almost every case the weighted fruit only will swell, and if some of the others attempt to follow its lead it will nevertheless outstrip them all. Pressure is as potential as a weight suspended, and I have often covered over shy setting Melons with an inch or two of warm soil at the period of fecundation, and the progress they have made has been quite astonishing and not to be accounted for on the increase of heat or humidity, to which the buried fruits were subjected. The stimulus to growth was so great, that if the fruits were carefully exposed to the light afterwards, they received such a stimulus as to ripen a week or even a fortnight in advance of those not covered over; while sorts that were difficult to set by the usual treatment, set freely by weighting or covering.

Neither is there so much mystery about the *rationale* of this matter, in view of the numerous facts adduced by Mr. Darwin of the extreme sensitiveness of tendrils to a touch, or to the pressure of a single thread of almost gossamer weight, compared with those of which I am writing. If tendrils are modified flower peduncles, it follows that flower peduncles—and if these, why not flowers and young fruit also?—are subject to the self-same laws. And if a touch is sufficient to bend or cause spiral revolutions, may not a steady weight be equally or more potential in causing a powerful stimulus to growth, a rapid development of size, or a modification of structure? Just as the muscles of the right arm of a blacksmith are enlarged by exercise, so may fruit be made to swel faster by being weighted.

I also believe in the more than magic power of a touch. It was assuredly not in vain that the ministry of bees and other insects is thus employed in fecundation and hybridisation. Doubtless by a series of the most marvellous adaptations of means to ends, as Mr. Darwin has so ably shown in his most profound work on the fertilisation of Orchids, they carry the pollen to where it is wanted. But they do much more than that probably. Their mechanical weight and contact with the most vital organs of plants probably quicken them into a higher sensitiveness, and so



VINE TENDRILS (SEE TEXT).

concentrate the energies of life in the parts touched as to hasten and perfect the great processes of Nature.

One more fact about Vine tendrils is worthy of notice. At p. 138 Mr. Darwin remarks that Vine tendrils bend from the light towards the dark. He also quotes Mohl to the effect that with a Vine planted against a wall the tendrils will point towards it. I quite believe this, and more, I have found Vine tendrils at the top of a vinery, not only pointing towards the wall, but pressing so firmly against it that their sides and extremities were enlarged into something akin to the adhesive discs that distinguish the tendrils of the Ampelopsis hederacea, and they have in a few instances actually seemed to adhere. In structure they might have passed very well for those of the Virginian Creeper, fig. 6. Can it be that Vine tendrils were once of this character, and that their pointing towards a wall, and from the light, is a hereditary legacy handed down in their constitution from the remote times when they climbed by adhesive discs, and probably manufactured their own cement to make them cling the easier to the primitive rocks as the Virginian Creeper and Ficus repens still continue to do? It is at least certain that Vine tendrils are considerably altered in structure, and perhaps in function, by being violently compressed against walls, or when they run into crevices in search of holdfasts and perhaps other things. *D. T. Fish.*

Foreign Correspondence.

AKELE COUNTRY, WEST AFRICA.—I have just received a letter from a correspondent and friend of mine, the Rev. M. Nassau, of the American Gaboon Mission, who occupies the extreme outlying picket of that society's station far in the interior in the Akele country (200 miles up the Ogove, and 150 miles from the sea), to the north and east of the Gaboon River. As this is new ground to the naturalist, I have thought that perhaps your readers might like to see a few extracts from his letter where he incidentally touches on the products of the country, and accordingly enclose them. *Andrew Murray.*

"I went down to the sea in the last of June walking across country north-west, until I struck the Rembue, an affluent of the Gaboon, about 70 or 80 miles from Baraka, our mission station at Gaboon. I returned here in August, and have built a small Bamboo house on ground which I purchased from the natives last June, and just as the natives, and of the same materials—thatch made of leaves of the Bamboo Palm, ingeniously fastened together side by side until each piece of thatch is about 5 feet long and 2 feet wide. These are tied over saplings some 2 or 3 inches in diameter stuck into the ground about 1 foot apart, on the outline of the house; and over them are tied horizontally, 2 to 6 inches apart, split fronds of the same Palm. These pieces of thatch are laid on the roof, just as shingles are with us. My house is, as you may suppose, a small one; but the natives consider it very large, because its walls are 7 feet high, and the ridge pole 10 feet from the ground. The roof extends 3 feet over the side walls, so as to protect the walls from the dashing rains. Bamboo soon decays when exposed to wet. I am sitting in my bed-room, by the gable window. I have a chair, but no table; there is no room for a table, even if I had one. My boxes of clothing, provisions, and goods, such as cloth, knives, crockery, &c., for buying food and for paying *employés*, crowd the sides of the room, and serve as seats and table. I have fowls and goats and fresh fish for meat, and for vegetables Plantains, Yams, and Sweet Potatos. When there happen to be none of these I fall back on my little supply of canned meats and vegetables (beef and mutton, beans and peas). I have flour, but my cook does not know how to make bread, but he makes something like pancakes of flour, sugar, eggs, and water.

There are a great many Ferns and Orchids here; there is one vine here which I suppose to be an Orchid, I think it one of the most attractive Orchids I have seen. Its root is in the earth, very thin, not as thick as a Wheat-stalk; it climbs the tree by which it grows, and throws out roots into the bark; the vine increases in thickness, 4 yards from its root it is three times as thick, very fleshy, leaves obovate and very fleshy. It is now in profuse bloom, flowers creamy white, of a singular shape, somewhat papilionaceous, and the vine has long—a yard or two—air rootlets with a fleshy skin covering a woody core, from which core are made the strings of the native harps of which Du Chaillu speaks.

"You must be becoming disheartened about the prospects of receiving any bugs from me, and I confess I am a little so in the effort to collect. Collection is not difficult, or even if it were so it can readily be done for a friend; but I have been very unfortunate in my movings about, and narrow places for keeping things, in saving either bugs or bottles, so I asked a fellow missionary last month to forward you from Gaboon one bottle only partly filled, and not to wait lest the few specimens in it should by some accident be spilled. It contained what I suppose to be a Mygale spider. It was caught on these premises while I was cleaning here last June. One of the boys in pursuing it struck it and smashed its body. I was exceedingly disappointed at its mutilation; but the head is complete. I was amazed at the amount of blood that flowed from it. The dragon-flies and other few bugs are also from these premises. *R. H. Nassau.*"

Note.—Dr. Nassau's information as to blood flowing from a Mygale is of interest, as proving that the Mygale does feed on small vertebrate animals. We know that the story of its spinning webs strong enough to catch birds in is a fable. It does not spin webs as snares, if it spins at all, and the correction of that error has driven opinion into the opposite belief, that it does not catch vertebrate animals, but lives upon locusts, beetles, and other large insects. Here there can be no doubt, for the blood spoken of by Dr. Nassau could not be that of the spider (whose blood is colourless), and must have been that of a vertebrate animal—more probably a mouse than a bird—but still a red-blooded animal. *A. M.*

Reports of Societies.

Royal Horticultural: *Jan.* 19.—The 3 o'clock meeting was very thinly attended. The President, Lord Aberdare, opened the proceedings, and shortly afterwards resigned the chair to Mr. David Wooster. Dr. Masters announced the awards made by the Fruit and Floral Committees, and commented on the objects exhibited, in the absence, through illness, of the Rev. M. J. Berkeley; and the meeting adjourned until February 16.

SCIENTIFIC COMMITTEE: Dr. J. D. Hooker, C.B., Pres. R.S., in the chair.

Malformed Potato.—Dr. Masters exhibited, on behalf of Mr. Taylor, gr. to Hon. H. T. Wyndham, a Potato bearing buds or new tubers in the interior. These new growths had been developed from the interior entirely at the expense of the old tuber. Similar instances have been figured occasionally in our columns, and they serve to show that under special circumstances buds or eyes may be formed from any portion of the plant. The question is of the more interest as relevant to the enormous crop of Potatos produced by fostering the development of adventitious buds in the case of some of the American Potatos recently shown at the Society.

Hypertrophied Jasmine Shoot.—Mr. A. W. Bennett forwarded a specimen of a Jasmine shoot exhibiting a swelling on the stem, consisting probably of hypertrophied woody tissue, such as is sometimes seen on the Vine generally as a result of constriction or other injury.

Damage by Insects.—Mr. A. Murray revelled to this subject (see *ante*, p. 780, vol. iv.), and a recommendation was sent up to the Council supporting Mr. Murray's proposal for founding a joint committee from various societies for the purpose of collecting statistical details as to the nature and amount of damage to growing crops effected by insects.

Banana Disease.—Dr. Hooker alluded to the disease in the Banana observed in Queensland, and remarked that in the opinion of the secretary of the Acclimatisation Society there was no specific disease in these cases, but that the rotting observed was a result of bad cultivation.

Diseased Vines.—A letter from Mr. Berkeley was read, in which he stated that the two diseases alluded to by him in a recent number of the *Gardeners' Chronicle* were described by M. Esprit Fabre in the *Bulletin de la Société d'Agriculture d'Herault*, 1853, (see p. 113).

Fertilisation of Coryanthes.—A letter to Dr. Hooker from Mr. Prestoe, of Trinidad, was read, in which the writer threw out the suggestion that the large bag-like lip of this plant, in which many insects get drowned, might possibly have a digestive faculty, as in the case of Drosera and other so-called carnivorous plants. The flowers of the Coryanthes are visited by a small bee of a beautiful shining metallic-green colour, of which specimens were laid before the meeting, and which were considered to be allied to a species of leaf-cutter bee found in Brazil. The lip of the Coryanthes is persistent on the matured seed vessel and becomes thickened, hence Mr. Prestoe suggests that the drowned insects may possibly contribute to the nourishment of the ovules.

Sensitiveness of Plants.—Mr. Prestoe, in the letter just cited, alludes to this as a much more common phenomenon than is usually thought. Various species of Maranta raise their leaves during bright sunshine, and lower or spread them as evening comes on.

Peronospora Violæ.—Dr. M. C. Cooke announced the discovery of this fungus on Viola leaves in Wales for the first time in this country.

Uredo alliorum.—Dr. Cooke alluded to an instance wherein a grower of Leeks brought an action against some manufacturer to recover damages done to his Leeks by the smoke of his factory. On examination, however, the Leeks were found to be affected with Uredo alliorum, and not to have been directly injured by the smoke.

FLORAL COMMITTEE.—R. B. Postans, Esq., in the chair. The labours of the committee were not very heavily taxed to-day, though the Council-room was by no means destitute of gay flowers, Messrs. James Veitch & Sons contributing a very fine group, which included a charming lot of Orchids and a batch of Cyclamens of very superior merit. Amongst the latter we particularly noticed one or two of very rich colours, and one of the purest and best-formed whites we have ever seen; and Cyclamen persicum grandiflorum "Model," a strong grower, with fine white flowers on long stout footstalks, and which much resembles the variety "giganteum" sent out by Mr. B. S. Williams. Amongst the Orchids the most striking were Masdevallia tovarensis, Angræcum sesquipedale, Odontoglossum Rossii major, Oncidium cheirophorum, Sophronites grandiflora, two or three varieties of Odontoglossum Roezlii, and Pleione humilis, Tillandsia Lindeni, bright blue; and T. Zahnii, lemon-yellow; and several hybrid Amaryllis were also exhibited in the group. A vote of thanks was passed, and the committee recommended the award of a Davis Medal, which it is intended in future to grant to collections of plants of especial interest brought forward at the fortnightly meetings. Mr. Denning, gr. to Lord Londesborough, exhibited a grandly flowered plant of the old and very curious Dendrobium teretifolium, which gained a First-class Certificate. The flowers are very small, white, with narrow sepals and petals, and the leaves long, terete, and cylindrical, not unlike the pods of Vanilla at first sight. The plant is a native of the vicinity of Port Jackson, and was defined and published by Mr. Brown in 1810, but it does not seem to have flowered in this country until 1839, when Messrs. Loddiges had it in bloom, the fact being recorded in the *Botanical Register* of that year. Another plant, sent to Kew by Mr. Moore, of the Sydney Botanic Garden, flowered soon after, and was figured in the *Botanical Magazine*, tab. 4711. Sir William Marriott, Bart., Down House, Blandford, showed a more than usually fine plant of Cattleya bulbosa, with fifteen beautiful flowers, and received a Cultural Commendation. W. Burnley Hume, Esq., The Hill House, Winterton, Yarmouth, sent a fine plant of the new Masdevallia Davisii, with nine large, very bright, canary-yellow flowers. Messrs. Stuart & Mein, Kelso, sent a large, well-flowered plant of the old Brazilian Rhipsalis pachyptera. Mr. Charles Green, the Botanical Nursery, Holmesdale Road, Reigate, received a Botanical Commendation for the singular Mesembryanthemum truncatellum. A vote of thanks was also accorded to Mr. Green for a group of small but very interesting plants, which included the small, greenish-white flowered Masdevallia melanopus, and a prettier, white-spotted variety of the same species; also a variety of Masdevallia polysticta, as pretty as it was small, greenish-white suffused with rose, and a little spotted.

FRUIT COMMITTEE.—H. Webb, Esq., in the chair.—But few subjects came under the notice of the committee to-day. The most important was a sample of "Whitloef," a sort of Chicory which has been used by the Belgians and Dutch as a salad from time immemorial. The leaves were nicely blanched, and the flavour particularly good, so that the introduction of the plant into English gardens may be welcomed as a boon. The wonder is that this has not been done before. Messrs. James Carter & Co. were the exhibitors, and a First-class Certificate was awarded. A special prize was offered by Messrs. William Paul & Son for the best bunch of their new Waltham Cross White Grape, and this was easily won by Mr. Douglas, gr. to F. Whitbourn, Esq., Loxford Hall, Ilford, who had a well-preserved bunch of very fine berries, the flavour of which was exceedingly good. Messrs. Stuart & Mein, Kelso, received a vote of thanks for some fine examples of proliferous Borecole, and eight varieties of Chilian Beet, fine in growth and beautifully coloured. Mr. J. Chambers, Westlake Nursery, Spring Grove, Isleworth, also received a vote of thanks for some very fine examples of the Blenheim Orange Apple. From the Society's gardens, Chiswick, came nine varieties of winter Pears; and Mr. Taylor, gr. to the Marquis of Bath, Longleat, sent some well-ripened fruits of the Orangefield Tomato.

Glasgow and West of Scotland Horticultural: *Jan.* 4 *and* 5.—This was a winter flower show, and was held in the Corporation Galleries, Sauchiehall Street. The new directorate proposes to hold three great shows, of which this was the first; to be

followed by an exhibition in the Crystal Palace in the summer, and a floral *fête* to take place during the meeting of the British Association in Glasgow in the autumn—these exhibitions to be on a larger scale than in former years. On this occasion the collections were arranged on tables in three of the lower halls of the building, the Sauchiehall Street entrance being beautifully ornamented with plants from the Botanic Gardens.

Messrs. J. & R. Thyne had a collection comprising some exceptionally fine ornamental and foliage plants, with a few beautiful flowering specimens, and the whole was surrounded by a fringe of grasses which added greatly to the effect. The stove and greenhouse plants sent by A. B. Stewart, Esq., of Rawcliffe, were of the usual superior description—Palms, Orchids, Ferns, and Azaleas being specially fine; one plant especially attracted notice for its rarity—the Thrinax Stewarti, which obtained a First-class Certificate at Dublin, and was stated to be the only Palm of the kind in the country; this collection also contained some good Phalænopsis grandiflora, and that charmingly beautiful Orchid Limatodes rosea, with five racemes, as well as Azalea amœna, which was a complete sheet of bloom. Messrs. Robertson & Galloway showed a fine assortment of Ivies, succulents, Ferns, and Coniferæ, alongside which were two large Pine-apples sent by Colonel Campbell, of Blythswood, and two baskets of Mushrooms from Colonel Buchanan, of Drumpellier. Mr. Peter M'Kenzie had a first-rate display of Heaths, Hyacinths, and Tulips; his lot of Hyacinth La Tour d'Auvergne was well grown and highly attractive. In Messrs. Austin & McAslan's collection, Rhododendrons, Heaths, and Ferns were prominent; also some specimens of golden Retinospora. A fine specimen of Lycaste Skinneri was shown by Dr. Paterson, Bridge of Allan. Mr. Anderson, Uddingston, showed a miscellaneous collection, including some choice Palms, Ferns, Orchids, and Camellias; amongst the rarer plants of the collection were a beautiful specimen of the Urceolina pendula, a fiery-coloured Masdevallia, and a few large-leaved Maidenhair Ferns. Mr. Thomas Hill, Marylee, Cathcart, showed an Orange tree richly laden with fruit, and a fine specimen of Cypripedium with over thirty blooms; both plants were much admired. J. C. Wakefield, Esq., Eastwood Park, had a miscellaneous collection, including some rare Agaves, a few specimens of the New Zealand Flax, Yuccas, &c.; and Mr. William Paterson, Buchanan Street, displayed a fine lot of Palms, Hyacinths, Tulips, and other plants suitable for table decoration. Messrs. Smith & Simons' display comprised Rhododendrons, Ericas, Palms, &c.—all in a high state of cultivation. Mr. Bullen made a good display from the Botanic Garden. He exhibited a few specimens of the Christmas Rose, some choice Orchids, and what is probably one of the finest examples of the Saccolabium giganteum in cultivation, a very excellent plant indeed.

General regret was expressed at the loss to horticulture sustained by the death of Mr. Goldie, Langside, who has been one of the best contributors to the Society for years in specimen Heaths and other plants.

The financial success of the two days' exhibition was not what was anticipated, the public generally evidently being satiated with the numerous attractions generally offered to them during the New Year holidays.

Forestry.

ONE very important branch of forestry is the management of what are termed ornamental and shelter belts, which consist of various descriptions of belts and many varieties of plants, some not over 6 yards broad, and composed of numerous species of shrubs, medium size and common forest trees; while others are over 100 yards broad, and consist of only common timber trees of one or two species. The narrower the belts and the greater the variety of plants the more difficult they are to manage. Some belts are designed exclusively to form screens or shades to conceal unsightly objects, some to afford shelter and protection during winter and cold weather, while others are chiefly designed to produce shade and protection from the scorching rays of the meridian sun. For this, as for any other branch of forestry, no special rule can be laid down, and only general principles can with safety be given, whereby those of limited experience may be enabled to act with confidence in themselves and satisfaction to those for whom they act, if otherwise intelligent and practically acquainted with the ordinary operations of forestry in other departments. The narrower the belt, the lower and bushier must the trees and shrubs always be kept, and in order to attain this they must, of necessity, be early and frequently thinned. One well-grown, bushy, spreading tree or shrub of whatever species will produce more shade, shelter, or protection than a dozen bare pole-like trees or other growth will, standing upon the same area of ground.

I have just finished the operation of thinning and pruning a belt 10 yards wide, extending along the east side of an important carriage drive, screening from view patches of arable land, with the usual appendages of straw stacks, dung-heaps, scarecrows, &c. The timber trees in the belt are too hopelessly tall and void of branch to conduce in any important way to the formation of a screen, and, therefore, the undergrowth alone has to be relied upon for the purpose. The undergrowth consists chiefly of Beech, Elm, Lime, Oak, and Sycamore, together with a few Hollies and Bay Laurels. About ten years ago the undergrowth was cut over at heights from the ground varying from 2 to 4 feet. At that period, however, the trees were less tall, and the undergrowth closer than now, so that the effects of cutting over the undergrowth were less seriously felt.

In order to avoid undue exposure of the background, already described, I divided the belt longitudinally into two equal halves, and cut over the one-half, leaving the other uncut till the cut portion grows up a considerable height, which it will do in three or four years, after which the other will be cut; and this practice, with a few unimportant variations, will probably continue through all time coming. If the belt had been 30 yards broad instead of 10 only, I would have divided it into three divisions instead of two, and cut over one division of 10 yards every second or third year, thus renewing the whole crop in six or nine years. Whether the success is to be great or small, will depend very considerably upon the manner of executing the work. If the operation is done in a slovenly manner, and the whole left in a rude, distasteful condition, the effect will be offensive to the eye and displeasing to acknowledged good taste; while, on the other hand, if every cut is done cleanly, every wound inflicted done with a master-stroke, and the whole performed so that nothing offends the eye, the operation will be pronounced a success. All cuts should be smoothly dressed and painted, so that the whole surface is of one natural colour, namely, the colour of the bark. In cutting over undergrowths great care and discrimination are required, so that each species and description of plant may be induced to spring up and reproduce or renew itself. Some plants grow best when closely cut by the surface of the ground, while others do better when cut at 6 inches, or even higher. The age as well as species of plant has to be well considered in cutting over, and not only so but the time of the year in which it should be done is to be consulted. Old plants, with bark thick and corky, should not be cut over till the sap has raised the bark a little, and is in a state readily to separate from the wood; in such condition the plant will reproduce itself readily, other things being equally favourable, while, on the other hand, if similar plants are cut over while the sap is inert, as in winter, they seldom produce shoots at all, or at least so readily and vigorously, as in the manner recommended.

Strict attention is necessary, either in thinning or cutting over underwood in such narrow belts, in order not to produce gaps or openings, which are very apt to occur, and to be discovered only when too late. This description of work requires to be done under the special direction of a responsible person, and never entrusted to ordinary woodmen. I usually walk backwards and forwards along the lines when such work is in hand, and take every possible precaution not to produce large openings through which offensive objects can be seen beyond.

When the trees have grown up to a height beyond that of providing shelter, no attempt should be made to pollard or in any way mutilate them, but rather allow them to remain as they are, or thin some of them out and operate only upon the undergrowth.

Holly, Portugal or Bay Laurel make the best or, at least, the most beautiful undergrowth, and when such undergrowth of evergreens is cut, so as to preserve the line clear and distinct amongst majestic timber trees, especially upon a moderately sloping bank, the effect is splendid beyond description. *C. F. Michie, Cullen House, Cullen.*

Obituary.

AT the West Coates Nursery, Edinburgh, on the 12th inst., Mr. ARCHIBALD M'KEITH, for twenty-five years the faithful and valued servant of Messrs. Downie & Laird. By the death of Mr. M'Keith the Edinburgh firm, in whose service he passed so many of the active years of his life has lost the services of a man who possessed a wide range of knowledge, and a thorough acquaintance with his profession as a nursery foreman, combined with great energy and a most amiable disposition. Born, as it were, to be a gardener, in the parish of Kilmichael, Argyllshire, Mr. M'Keith commenced work, we believe, in the gardens at Skipness Castle, at the early age of nine years. Subsequently he entered the service of Messrs. Dicksons & Co., Leith Walk, Edinburgh, and left there for Caprington Castle, Kilmarnock, where he had charge of the flower garden for two years. He seems then to have returned to Messrs. Dicksons & Co.'s nursery, which he left to take charge of Mr. John Carstairs' nursery at Warriston, which post he filled for three years and a-half. From the Warriston Nursery, he went as foreman to Messrs. Dickson & Turnbull's, at Perth, for one year, and then became foreman for Messrs. Downie & Laird, in whose service he remained until he died on the 12th inst., deeply regretted by his employers and a wide circle of friends. He was buried on Saturday last, the last sad rites being performed in the presence of over 200 friends whose respect and esteem he had gained.

Law Notes.

SUPREME COURT OF JUDICATURE, *Jan.* 18: COURT OF APPEAL.—(*Sittings at Westminster on Errors or Appeals from the Common Law Divisions, before Lord Coleridge, Lord Justices James, Mellish, and Baggallay, and Baron Cleasby*).—*Howell* v. *Copland.*—This case raised a curious and important question as to failure to complete a contract in consequence of some disturbance of Nature. The defendant, a farmer at Whaplode, in Lincolnshire, in March, 1872, agreed to sell to the plaintiff, a Potato merchant at Holbeach, 200 tons of Regent Potatos, grown on his land at Whaplode, at a certain price, to be paid on delivery in the autumn. At that time the farmer, the defendant, had 25 acres actually sown with Potatos and 43 acres ready for sowing. The 43 acres were afterwards sown, and the whole together were amply sufficient in ordinary circumstances to produce 200 tons. In August a great part of the crop was injured by disease, and the farmer could only deliver 80 tons. The plaintiff sued for non-completion of the contract to deliver 200 tons, and at the trial before the late Chief Justice Bovill at the Lincoln Spring Assizes in 1873, it appeared that in July the plaintiff selected two of the defendant's fields in Whaplode from which to take the 200 tons. In August heavy rains occurred, accompanied by thunder-storms, which produced a disease among the Potatos, and, among others, the defendant's Potatos were attacked. The plaintiff took the whole of the marketable Potatos produced upon the defendant's fields at Whaplode, and the defendant also allowed him to take the Potatos produced on his land in Holbeach, with some exceptions, but the whole of the Potatos received did not exceed 80 tons. The jury found for the plaintiff for £432 damages, the price per ton being £3 12*s.* 6*d.* The Court of Queen's Bench, on appeal, constituted of three judges—Mr. Justice Blackburn, Mr. Justice Quain, and Mr. Justice Archibald—were of opinion that the defendant (the farmer) was excused from the complete performance of the contract by *vis major*, or the act of God. The contract, said one of the learned Judges, "is subject to the condition that a sufficient quantity of Potatos shall be produced on the land, and, if from some cause which comes within the description of *vis major*, or the act of God, the Potatos are not produced in time to satisfy the contract, the defendant is not liable;" and so the Court gave judgment for the defendant. From that judgment the plaintiff appealed.

Mr. Digby Seymour, Q.C., and Mr. Waddy, Q.C., appeared for the plaintiff in support of the appeal; Mr. Herschell, Q.C., and Mr. Beasley appeared for the defendant in support of the judgment appealed from. After hearing the counsel for the plaintiff fully, the Court consulted together for a few minutes, and without calling on the counsel for the defendant proceeded to give judgment in his favour, affirming the judgment of the Court below.

Lord Coleridge, in giving judgment, said the contract was for Potatos to be grown on certain lands of the defendant, either actually sown or about to be sown, and amply sufficient under ordinary circumstances to supply the quantity contracted for. The Potato disease, which no skill or care could guard against, attacked the crop in the autumn and destroyed the greatest part of it, and it was too late to produce

another. The Court below decided that the defendant was excused on the ground that it was an understood condition that the Potatos should exist to be delivered. They had existed, but were destroyed by causes over which the defendant had no control, so that it was impossible for him to deliver them, and that was the true ground of the decision. There was not an absolule contract to deliver 200 tons of Potatos, but only to deliver them if they should be produced on the plaintiff's land, and this judgment was quite correct.

Lord Justice James concurred. It was a question of the construction of the contract, and it was a contract not with a warranty that the quantity should be produced, but to deliver that quantity if they should be produced.

Lord Justice Mellish concurred. There was no warranty that the Potatos should be produced. If there was a contract to deliver a specific article, and it was destroyed by the act of God, the contractor was excused. Such would be the law clearly if the Potatos had existed at the time of the contract, and it could make no difference that they were only sown or about to be sown.

Lord Justice Baggallay also concurred, as the contract only related to the produce of particular land.

Baron Cleasby likewise concurred, observing that he preferred to put the decision rather on the construction of the contract than on the doctrine of the "act of God" rendering performance impossible. He doubted whether the "act of God" would afford a defence if the contract was absolute; but here it was not so, and both parties understood that it was conditional on the Potatos being produced on the particular land of the plaintiff.—*Times*.

Natural History.

HYBERNATING BUTTERFLIES.—One of your correspondents tells us of the lively pranks of a Peacock butterfly in mid-winter, and asks whether any other British butterflies can be induced to do likewise? All the British butterflies belonging to the genus Vanessa—viz., the large and small Tortoiseshells, the Admiral, Peacock, Camberwell Beauty, and Painted Lady; V. polychloros, Urticæ, Atalanta, Io, Antiopa, and Cynthia Cardui, hybernate; so does the Brimstone butterfly, Gonopteryx Rhamni. They emerge from the chrysalis about August, fly about for a few weeks, and then hide up, and become dormant till the spring, when they come out, lay their eggs, and in a short time die. An unusually hot day in winter generally tempts a few of them out. They frequently lie up in the curtains, cornices, chinks and corners of houses, and if a fire is lighted in the room which contains their sleeping-place it brings them out as brisk as bees. *H. Harpur-Crewe, Drayton-Beauchamp Rectory, Tring, Jan.* 15.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, JAN. 19, 1876.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Jan.	In.	In.	°	°	°	°	°	°			In.
13	30.13	+0.40	33.7	28.1	5.6	39.8	−5.6	25.6	80	ENE: NE.	0.00
14	30.31	+0.59	34.7	29.8	4.9	32.7	−3.7	28.2	83	ENE: NNE	0.00
15	30.44	+0.72	34.3	29.8	4.5	32.3	−4.2	28.2	85	E.: ESE.	0.00
16	30.33	+0.60	34.8	25.2	9.6	29.4	−7.2	26.9	90	NE.	0.00
17	30.07	+0.34	46.0	34.8	11.2	39.5	+2.8	38.3	96	SW: WSW	0.05
18	29.99	+0.26	49.3	39.5	9.8	45.2	+8.4	38.9	79	W: WNW	0.00
19	29.95	+0.21	47.2	38.3	8.9	42.8	+5.8	37.8	87	SW.: S.S.W.	0.00
Mean	30.17	+0.45	42.0	32.2	7.8	37.1	−0.5	32.0	86	NE.: SW.	sum 0.05

Jan. 13.—A dull day. Strong wind. Fine between noon and 2 P.M.
— 14.—Overcast, dull day. Strong wind. Slight thaw.
— 15.—Overcast, dull and cold throughout.
— 16.—A fine cloudy day. Very cold. Temperature at 9 A.M., 25°.2, and increased to 27 by noon, to 29°.8 by 3 P.M., and 31.8 by midnight, which was the highest reading during the day.
— 17.—A dull day, occasional thin rain. The temperature rose from 37°.8 at 9 A.M., was 42° at 3 P.M., and increased to 46° by midnight, which was the highest reading in the day.
— 18.—A very fine day. Very mild; the temperature at 9 A.M. was 47°, and the maximum, 49.3, was reached at about 1 P.M.
— 19.—A fine mild day. Cloudy, and occasional thin rain in evening.

—— During the week ending Saturday, January 15, in the vicinity of the metropolis, the reading of the barometer at the level of the sea increased from 30.10 inches at the beginning of the week to 30.34 inches by the afternoon of the 10th, decreased to 30.16 inches by about noon on the 11th, increased to 30.29 inches by the evening of the same day, decreased to 30 10 inches by the evening of the 12th, and increased to 30.64 inches by the end of the week. The mean reading for the week was 30.32 inches, being 0.08 inch above that of the preceding week, and 0.41 inch above the average.

The highest temperatures of the air ranged from 34¾° on the 14th to 32° on the 12th; the mean for the week was 33½°. The lowest temperatures of the air ranged between 21¼° on the 12th and 29¾° on the 14th and 15th; the mean value for the week was 27°. The mean daily range of temperature in the week was 6½°, the greatest range in the day being 10¾°, on the 12th, and the least 4½°, on the 15th. The mean daily temperatures of the air were as follows:—9th, 29°.5; 10th, 31°.6; 11th, 30°.3; 12th, 26°.2; 13th, 30°.8; 14th, 32°.7; 15th, 32°.3; and the departures in defect of their respective averages were 6°.8, 4°.6, 6°, 10°.1, 5°.6, 3°.7, and 4°.2. The mean temperature of the air for the week was 30°.5, being 5°.9 below the average of sixty years' observations.

The highest reading of a thermometer, with blackened bulb in vacuo, in sun's rays, was 61° on the 12th. The lowest reading of a thermometer on grass, with its bulb exposed to the sky, was 17¾° on the 12th; the mean for the seven low readings was 25¼°.

The direction of the wind was N. and N.E., and gentle in motion. The weather during the week was dull, very cold, and the sky generally overcast. Snow fell on the 11th and 12th inst.

The amount of rain or melted snow measured during the week was 0.15 inch.

In England the highest temperature of the air observed by day was 45° at Truro. At about London 34¾° was the highest temperature in the week; the mean from all stations was 37¼°. The lowest temperatures of the air observed by night was 16½° at Leicester; at Norwich and Sunderland the lowest temperature in the week was about 25°; the mean value from all stations was 21½°. The range of temperature in the week was the greatest at Truro, 23°, and the least at Norwich, 11¼°. The mean range from all stations was 16¼° The mean of the seven high day temperatures was the largest at Truro, 39¾°, and the smallest at Brighton, 33¼°. The general mean from all stations was 35½°. The mean of the seven low night temperatures was the largest at Leeds, 31°, and the smallest at Eccles and Newcastle-on-Tyne, both 25¾°. The general average from all stations was 27¾°. The mean daily range of temperature in the week was the greatest at Newcastle-on-Tyne, 13½°, and the least at Norwich and Leeds, both 5½°; the mean daily range from all stations was 8°; the mean temperature of the air for the week from all stations was 31½°, being 14° lower than the value for the corresponding week in 1875. The highest occurred at Truro, 34°, and the lowest at Leicester, Cambridge, Wolverhampton, Nottingham and Brighton—all about 30°.

Rain or melted snow fell to the amount of fourtenths of an inch at Leeds and Newcastle-on-Tyne; at Truro, Norwich, Liverpool and Hull, one-tenth only was recorded; the average fall over the country was two-tenths of an inch. The weather during the week was dull, cold, and the sky overcast. Snow fell generally over the country on the evening of the 12th inst.

In Scotland the highest temperatures of the air ranged from 45° at Aberdeen to 39° at Paisley, the general average being 42¼°. The lowest temperatures of the air varied between 25° at Greenock and 20° at Glasgow; the mean value from all stations was 22½°. The mean range of temperature in the week was 19¾°.

The mean temperature of the air for the week from all stations was 32¾°, being 10½° lower than the value for the corresponding week in 1875. The highest happened at Leith, 33¾°, and the lowest at Paisley, 31°.

The amount of rain or melted snow measured at Leith was 1 inch nearly; at Glasgow two-tenths of an inch were recorded; at Dundee and Paisley none was measured; the average amount over the country was three-tenths of an inch.

At Dublin, the highest temperature in the week was 44½°, the lowest 23°, the range 21½°, the mean 34°, and the amount of rain or melted snow measured was 0.04 inch.

JAMES GLAISHER.

Answers to Correspondents.

AUCUBA: *A Constant Reader.* We cannot tell you the reason why, but recommend you to keep the seeds where they are.

CALCEOLARIA: *W. Dixon.* Write to Messrs. E. G. Henderson & Son, Wellington Road, St. John's Wood, N.W.

CATTLE CONDIMENT: *T. J.* We cannot assist you in the matter.

CHILIAN BEET: *W. W. H.* In answer to "T. J.," p. 56, I beg to say that it will keep the same as the ordinary garden Beet, and will withstand as much or more frost; but if planted again in spring it will, like that kind, immediately run to seed: it is therefore useless for decorative purposes a second year.

CYCLAMEN: *E. Morgan.* Not an improvement as a decorative plant, but it will lead to the production of something still more curious, as it will doubtless vary from seed.

HEATING GREENHOUSES: *C. P.* We have no experience of oil lamps; the safest and easiest plan would be by hot-water pipes heated by gas, the burner being fixed in an exterior furnace.

NAMES OF FRUIT: *Clark Brothers.* Your Apple is named the Sheep's Nose.

NAMES OF PLANTS: *A Subscriber.* The greenhouse plant is Tradescantia zebrina, and the other Cryptomeria elegans.—*A. J. M.* 1, Siphocampylus Humboldtianus; 2, Bryophyllum calycinum; 3, Begonia maculata, commonly known as B. argyrostigma.—*Old Subscriber.* Brassavola nodosa.—*T. W., Windsor.* The Orchid is Zygopetalum Mackayi. The other two we cannot name unless good flowering specimens are sent.

SAP: *J. M. M.* For a *resumé* of the latest information on this subject, see our pages for 1874, vol. i., through the young wood; 2, if the liber be entirely destroyed, and no covering be applied, death is the all but universal result; 3, yes, ultimately.

COMMUNICATIONS RECEIVED.—E. Morgan.—T. S. S.—H. C.—J. R. J.—Dr. G. B. (many thanks).—W. T. T.—J. F. McE.—W. P. R.—J. O.—C. G.—S. F.—J. B. K.—A. E. R.—J. R.—H. R.—W. Miller (thanks).—W. W.

*** IMPORTANT NOTICE.—*The* AGRICULTURAL GAZETTE *is now* PUBLISHED *on* MONDAYS, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, January 20.

There has been a more healthy tone about the market during the last week, and clearances have been effected at previous prices. The supply of hothouse Grapes is fully equal to the demand, Lady Downe's and Alicante being the ruling varieties. Pears are almost entirely confined to Ne Plus Meuris, Easter Beurré, and Beurré Rance, but a few Glou Morçeau may still be had. *Jas. Webber, Wholesale Apple Market.*

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per doz.	42	0–60	Hyacinths, per doz.	0	0–18
Begonias, per doz.	6	0–12	Hyacinths, Rom., do.	12	0–30
Bouvardias, do.	12	0–18	Mignonette, do.	6	0–9
Cyclamen, do.	12	0–24	Myrtles, do.	3	0–9
Cyperus, do.	6	0–12	Pelargoniums, scarlet, per doz.	6	0–9
Dracæna terminalis	30	0–60	Poinsettias, per doz.	15	0–24
— viridis, per doz.	18	0–24	Primula sinensis, do.	6	0–12
Epiphyllums, do.	18	0–42	Solanums, do.	6	0–24
Euphorbia jacquiniæfolia, per doz.	9	0–18	Tulips, do.	9	0–18
Ficus elastica	2	6–15	Veronica, do.	4	0–12
Heaths, in var., doz.	12	0–30			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Azaleas, 12 sprays	1	0–3	Pelargoniums, 12 spr.	2	0–4
Camellias	4	0–12	— Zonal do.	1	6–3
Carnations, 12 blooms	2	0–4	Poinsettia, per doz.	4	0–12
Cyclamen, 12 blooms	0	3–0	Primula, dbl., p. bun.	1	0–1
Epiphyllum, p. doz.	1	0–3	Roman Hyacinths, 12 sprays	3	0–6
Eucharis, per doz.	6	0–18	Roses, indoor, p. doz.	3	0–9
Euphorbia, 12 spr.	4	0–9	Spiræa, 12 sprays	2	0–4
Gardenia, per doz.	12	0–18	Stephanotis, 12 sprays	9	0–18
Heliotropes, 12 spr.	0	6–1	Tuberoses, per doz.	4	0–9
Mignonette, 12 bun.	6	0–9	Violets, 12 bunches	2	6–4
Narcissus, per dozen	3	0–6			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz.	8	0–	Mint, green, bunch	1	6–
— Jerusalem, p. lb.	0	3–	Mushrooms, per pott.	1	0–2
Asparagus (English), per bundle	8	0–10	Onions, young, bun.	0	4–6
Beans, French, p. 100	5	0–	Parsley, per bunch	0	4–
Beet, per doz.	1	0–2	Peas, green, per lb.	1	6–
Brussels Sprouts, lb.	0	4–	Potatos (new), baskt.	1	0–
Cabbages, per doz.	1	0–2	— new Jersey, p. lb.	2	6–
Carrots, per bunch	0	6–	— Sweet, per lb.	0	6–
Cauliflowers, p. doz.	2	0–4	Radishes, per bunch.	0	2–4
Celery, per bundle	1	6–2	— Spanish, doz.	1	0–
Cucumbers, each	2	0–3	— French	0	6–
Endive, per doz.	1	0–2	Rhubarb, per bundle	1	3–1
— Batavian, p. doz.	2	0–3	Salsafy, per bundle	0	9–
Herbs, per bunch	0	2–4	Seakale, per punnet	1	0–2
Horse Radish, p. bun.	3	0–5	Shallots, per lb.	0	3–
Leeks, per bunch	0	2–4	Tomatos, per doz.	1	0–2
Lettuces, per score	2	0–	Turnips, per bundle	0	4–

Potatos—Rocks, £5; Regents, £7 to £8; Kidneys, £7 to £8 per ton.

FRUIT.

	s. d. s. d.		s. d. s. d.
Apples, per ½-sieve	1 0– 2 6	Melons, each	.. 2 0– 4 0
Cobs and Filbts., lb.	0 6– 0 0	Oranges, per 100	.. 6 0–12 0
Grapes, per lb	.. 2 0– 6 0	Pears, per doz.	.. 1 6– 6 0
Lemons, per 100	.. 6 0–10 0	Pine-apples, p. lb.	.. 2 0– 5 0

SEEDS.

LONDON: *Jan.* 19.—An extensive business is now passing in agricultural seeds, at full, and in some cases increased rates. A small quantity of American Clover has this day arrived in London, but the high prices now ruling in New York will probably prevent our receiving any considerable shipments thence. Of French Red the supply continues fair; samples, as they come to hand, are readily placed on former terms. A few parcels of home-grown seed have appeared, which are held for long figures. Of Trefoil large quantities are being placed at a sharp advance in value; the quality of English is this year very poor. Alsike has just made a great bound upwards, white Clover is also on the rise. Imported Italian must be noted 2*s.* per cwt. dearer on the week. There is a brisk inquiry for this article, and also for perennial grasses. Konigsberg spring Tares now move off very freely at recent currencies. A continuance of the present demand must soon exhaust the small stock remaining unsold. Hemp and Millet are without change. Canary seed is in diminshed request, without being quotably cheaper. Rape and Linseed keep firm. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, E.C.*

CORN.

At Mark Lane on Monday the tone of business was flat, and to effect sales of English Wheat factors had to submit to some reduction. Foreign Wheat fairly maintained previous quotations. Barley was slow to move, especially malting, and prices in all cases favoured the buyer. Malt was without material alteration. Oats were less easy to dispose of. There was a decline of fully 6*d.* per quarter in the value of new corn; Maize was somewhat cheaper; Beans and Peas when pressed for sale were lower; and the quotations for flour had a downward tendency.—Trade on Wednesday was very dull. The chief business effected in Wheat was at some reduction from Monday, choice dry samples alone being equally as dear as on that day. Barley was offered on somewhat easier terms, and the prices for malt, Maize, Beans, Peas, and new Oats were decidedly weak. Sound old Oats were steady, and there was no great alteration in the value of flour.—Average prices of corn for the week ending Jan. 15:—Wheat, 44*s.* 7*d.*; Barley, 34*s.* 3*d.*; Oats, 23*s.* 10*d.* For the corresponding week last year:—Wheat, 44*s.* 6*d.*; Barley, 45*s.* 6*d.*; Oats, 29*s.* 1*d.*

CATTLE.

At the Metropolitan Market on Monday there was a very slow trade in beasts, and prices were lower than on the previous Monday. Trade was very dull for all kinds of sheep, and prices were much reduced. An oversupply of dead meat and changeable weather were the principal causes of depression. Choice calves were scarce and dear. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.* 4*d.*, and 5*s.* 6*d.* to 6*s.* 2*d.*; calves, 5*s.* 4*d.* to 7*s.*; sheep, 5*s.* 4*d.* to 6*s.*, and 6*s.* 6*d.* to 7*s.*; pigs, 4*s.* 6*d.* to 5*s.* 8*d.*—The demand for beasts on Thursday was dull, the quotations ranging between 3*s.* 8*d.* and 6*s.* Sheep met with little demand, and the rates favoured buyers. Calves met a ready sale, and suitable descriptions brought a higher figure than on Monday.

HAY.

On Wednesday Whitechapel Market was well supplied with all classes of fodder, and while business was very quiet there was no material alteration in prices. Prime Clover, 100*s.* to 147*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 134*s.*; inferior, 55*s.* to 75*s.*; and straw, 35*s.* to 47*s.* per load.—On Thursday supplies were heavy, particularly of hay stuffs. Quotations:—Clover, best, 117*s.* to 147*s.*; inferior, 80*s.* to 90*s.*; hay, best, 114*s.* to 134*s.*; inferior, 60*s.* to 80*s.*; straw, 30*s.* to 47*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 130*s.* to 147*s.*; inferior, 88*s.* to 115*s.*; superior Clover, 130*s.* to 150*s.*; inferior, 100*s.* to 112*s.*; and straw, 48*s.* to 52*s.* per load.

POTATOS.

At the Borough and Spitalfields markets on Monday, the better descriptions of Potatos were in rather short supply, and firm in price; but inferior kinds were in excess of the demand, and somewhat irregular. Kent Regents, 120*s.* to 140*s.* per ton; Essex ditto, 110*s.* to 130*s.*; rocks, 90*s.* to 110*s.*; Victorias, 120*s.* to 150*s.*; flukes, 150*s.* to 170*s.*; kidneys, 110*s.* to 140*s.* On Tuesday, the demand being somewhat increased by the milder weather in town, prices showed increased firmness. Quotations:—English Regents, best, 160*s.* to 180*s.*; secondary sorts, 120*s.* to 140*s.*; French seedlings, 105*s.* to 110*s.*; ditto ware, 80*s.* to 90*s.* per ton; Dutch rocks, 4*s.* 3*d.* to 4*s.* 9*d.*, and Belgian kidneys, 5*s.* 6*d.* to 6*s.* per bag.—On Thursday the supplies were moderate, and the trade steady at Tuesday's prices.—The imports of foreign Potatos into London last week were made up of 1 barrel, 400 sacks, 839 tons, and 15,629 bags.

COALS.

Monday's market was a heavy one, owing to the change in the weather, and house coals gave way 2*s.* per ton. Wednesday's business was steady, at the reduction.

WORCESTER PEARMAIN APPLE.

Awarded a First-class Certificate by the Royal Horticultural Society, October 6, 1875.

Fruit 2¾ inches wide, and same in height, conical; skin smooth, brilliant red, with minute fawn-coloured dots; flesh very tender, crisp, juicy, and sweet, with a very pleasant flavour, perhaps the most valuable of all for market. The tree is as productive as Lord Suffield Apple, and one of the handsomest fruits in cultivation. Ripe end of August, and will keep till Christmas.

Maiden Trees, 10s. 6d. each; Pyramid or Trained Trees, 21s. each. Coloured Plates, 6d. each.

RED HAWTHORNDEN APPLE.—Dr. Hogg describes this as large, oblate, and angular; skin smooth, greenish yellow, with a red blush next the sun; flesh white, tender and juicy, with a sprightly and agreeable acidity. A very early and valuable culinary Apple; ripe August and September. Maiden trees, 7*s.* 6*d.* each; Pyramid or trained trees, 10*s.* 6*d.*

YORKSHIRE BEAUTY APPLE.—Dr. Hogg, in his *Manual*, says this fruit is 3½ inches wide and 3 inches high, roundish, flattened, and angular; skin bright yellow, with a bright red blush on the sunny side; flesh tender and juicy, with an agreeable acidity. A first-rate culinary Apple for August and September; the great size and excellent quality ought to commend it as a good orchard fruit for the market. Maiden trees, 5*s.* each; Pyramid or trained trees, 7*s.* 6*d.*

NEW GOLDEN LABURNUM.—Unquestionably the finest hardy golden-leaved tree known, of immense value for park and garden scenery; it will take a foremost position among pictorial and garden trees; the foliage is a brighter golden-yellow than the flower of the ordinary Laburnum. First-class Certificate awarded by the Royal Horticultural Society, August 4, 1875. Price 10*s.* 6*d.* each; Standard and extra strong trees, 21*s.* Coloured plates, 6*d.* each.

OTHERA JAPONICA.—A new and beautiful evergreen shrub. One of the most distinguished Japanese travellers says this is perhaps the prettiest evergreen they have in Japan; it grows about 20 feet high, has dark green leaves and a profusion of bright red fruit; it is very effective and perfectly hardy. Price 10*s.* 6*d.* each; extra strong, 21*s.*

TWELVE ACRES OF ROSES,

Standards and Dwarfs, all the popular sorts; 80,000 choicest Tea-scented and Noisette Roses, in pots. Extra strong Hybrid Perpetual Roses, in pots for immediate forcing.
Climbing Roses in great variety. *See Descriptive Price List.*

FIFTY ACRES OF FRUIT TREES.

Standard and Dwarf-trained PEACHES, NECTARINES, APRICOTS, PLUMS, CHERRIES, PEARS and APPLES, very fine trees for walls.
Standard, Pyramid, Dwarf, Bush, and Cordon APPLES, PEARS, PLUMS, and CHERRIES.

VINES, Planting Canes, 3*s.* 6*d.* to 5*s.* each; Extra Strong Fruiting Canes, 7*s.* 6*d.* to 10*s.* 6*d.* each.
All the above of superior quality, perfect in form, roots, and health, and true to name.
See Descriptive Price List.

COLLECTION OF TWELVE STANDARD ORNAMENTAL TREES, THE MOST BEAUTIFUL FOR GROUPING, 24*s.*, viz.:—Almond, Acer Negundo variegata, Double Scarlet Thorn, Elm elegantissima, Purple Beech, Silver Variegated Cornus, Silver-leaved Poplar, Scarlet Horse Chestnut, Scarlet Mountain Ash, Tulip Tree, Variegated Mahaleb, Weeping Silver Birch.

COLLECTION OF TWELVE OF THE MOST DISTINCT AND BEAUTIFUL HARDY CREEPERS and WALL SHRUBS for 15*s.*, viz.:—Akebia quinata, Berberidopsis corallina, Bignonia grandiflora, Clematis Jackmanni, Ceanothus Veitchii, Cydonia japonica, Escallonia macrantha, Jasminum revolutum, Lonicera aureo-reticulata, Magnolia grandiflora, Passiflora Colvillii, Wistaria sinensis.

COLLECTION OF TWELVE MOST EFFECTIVE AND ORNAMENTAL IVIES, the most useful of all Evergreens for Walls, Trellises, &c., 12*s.*

DECIDUOUS FLOWERING SHRUBS in Fifty beautiful varieties, 30*s.* per 100.

BEAUTIFUL HERBACEOUS AND ALPINE FLOWERING PLANTS, give no trouble, and are permanent in adorning Garden Beds, Borders, and Rockeries; 30*s.* per 100 varieties.

JUNIPERUS CHINENSIS.—One of the hardiest and most ornamental Shrubs in cultivation, and especially valuable to the landscape gardener. In spring it is quite golden with its numerous flowers, which, when shaken with the wind, give off a cloud of yellow dust; and if the plant be kept closely pruned, the young growth becomes so luxuriant and leafy that it gives an entirely different but equally pleasing effect in its silvery tinge and rigid outline. When left to its own growth it forms a noble green pillar, highly suitable to stand in pairs by a garden walk. Eight to 9 feet, 10*s.* each; £4 4*s.* per dozen.

PICEA PINSAPO.—A very handsome, densely branched tree. The branches are very thickly placed in whorls and spread horizontally, thus giving a singularly beautiful appearance. It is one of the most distinct and desirable trees for ornamental planting, especially for a lawn. Its perfect symmetry of form is so striking that it should have a place in every collection. Eight to 10 feet, 25*s.* each; £12 per dozen.

ABIES DOUGLASII.—This, the most noble of Evergreen Firs, is of rapid growth, hardy, produces valuable Timber, close, heavy, and free from knots, of the colour of Yew wood. It is a native of California, where it grows upwards of 300 feet high, with a trunk 10 feet through. The flagstaff at Kew is of this tree, and was, when growing, 309 feet high. There is at Dropmore (Bucks) a specimen measuring at the present time 100 feet high, and 90 feet through the branches, with a trunk 9 feet in circumference at 4 feet above the base. It was raised from seed sown by Mr. Frost, the present gardener, in 1828, and is now a model of beauty. 12 to 15 feet, 12*s.* 6*d.* each, £5 per doz.

THE SILVER CEDAR of MOUNT ATLAS.—Now is the time to plant this eminently beautiful tree, unsurpassed for majestic grace and picturesque grandeur even by the Cedar of Lebanon, which it much resembles; and many consider it a variety, but its leaf is more silvery, it grows twice as fast, and its timber is very valuable. Noble trees, 10 to 12 feet, 25*s.* each, £12 per dozen.

AVENUE AND ORNAMENTAL TREES,
For planting singly or in groups, of all forms and sizes; with many other large Evergreens for single specimens or screens.

RICHARD SMITH,
NURSERYMAN and SEED MERCHANT, WORCESTER.

COCOA-NUT FIBRE REFUSE (newly made), 20 bushels, 6s. 8d.; 20s. per 100 bushels, 45s. per 300 bushels. Larger quantities contracted for.
J. STEVENS, Fibre Works, High Street, Battersea, S.E.

COCOA-NUT FIBRE REFUSE, (H. Wright's pure).—Invaluable for Forcing, Plunging, and all Gardening purposes; sure protection against Frost. As supplied to 1000 Nurserymen and Gardeners. Twenty bushels, 6s. 8d.; 50 bushels, 12s. 6d.; truck load, 45s. Delivered free on to rail or within 6 miles.
THOS. HODGES AND CO., Eagle Steam Fibre Works, Hatcham Road, Old Kent Road, S.E.; and 81, Bishopsgate Street Without, London, E.C.

ODAMS' MANURES FOR ALL CROPS.
Manufactured by the NITRO-PHOSPHATE and ODAMS' CHEMICAL MANURE COMPANY (LIMITED), consisting of Tenant-Farmers occupying upwards of 150,000 Acres of Land.
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GISHURST COMPOUND.—Used by many of the leading Gardeners since 1850, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.
Sold Retail by Seedsmen, in boxes, 1s., 3s., and 10s. 6d. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

BELL'S MILDEW COMPOSITION, as used by them for the last twenty-five years at their "HORTICULTURAL ESTABLISHMENT, BRACONDALE," their "NURSERIES, LAKENHAM," and "VINERIES, THORPE HAMLET," consisting of over 30,000 feet of glass. Retail, 1s. 6d. and 2s. 6d. per bottle, of the Sole Manufacturers,
BELL AND SON, 10 and 11, Exchange Street, Norwich.

BEST TOBACCO PAPER, CLOTH, and CORD.
Wholesale and Retail Price (low) on application to
J. GEORGE, Putney Heath, London, S.W.

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FIFTEEN THOUSAND, bright colour, ex "Aristocrat;" best parcel this season. Prices, &c., on application to
WILLIAM PETERS, 44, Tenter Street South, and Warehouses, Well Street, London Docks, E.

RUSSIA MATS, for Covering Garden Frames.—ANDERSON'S TAGANROG MATS are the cheapest and most durable. Price List, which gives the size of every class of Mat, forwarded post free on application.
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RUSSIA MATS.—A large stock of Archangel and Petersburg, for Covering and Packing. Second sized Archangel, 100s.; Petersburg, 60s. and 80s.; superior close Mat. 45s., 50s., and 55s.; packing Mats, 20s., 30s., and 35s. per 100; and every other description of Mat at equally low prices, at
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Russia Mat Merchants.
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E. T. ARCHER'S "FRIGI DOMO."—Patronised by Her Majesty the Queen for Windsor Castle and Frogmore Gardens, the late Sir Joseph Paxton, and the late Professor Lindley, &c.
MADE of PREPARED HAIR and WOOL.
A perfect non-conductor of heat or cold, keeping a fixed temperature where it is applied. A good covering for Pits and Forcing Frames.
PROTECTION from COLD WINDS and MORNING FROSTS.
"FRIGI DOMO" NETTING, 2 yards wide, 1s. 4d. and 1s. 10d. per yard.
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2 yards wide .. .. 1s. 10d. per yard run.
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ELISHA T. ARCHER, only Maker of "Frigi Domo," Stanstead and Brockley Roads, Forest Hill, London, S.E.; and of all Florists and Seedsmen. All goods carriage paid to London.
NOTICE.—REMOVED from 3, CANNON STREET, CITY.

SEED CLEANING and DRESSING MACHINES for 1876, of the best workmanship, from the simplest Portable Blower up to the most perfect machine, with a power of separating carried to a point of perfection never attained before; working with one, two, three, and four sieves at a time, with stationary and vibrating seed regalator, rubbing appliance, improved blast regulator, thorough blasting and sifting arrangement, self-cleaning sieve for light, long, small, big, or heavy seeds, fresh grown or old stock, mixed or deteriorated seeds; rubbing, separating nuites, blowing, sifting, lubricating, and shaking such as Turnip seeds by one operation.
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Labels—Secure Tree and Plant Labels.
PARCHMENT or CLOTH LABELS, TREE or PLANT LABELS. Punched Parchment, 4 inches long, 3s. 6d. per 1000, or 30s. per 10,000; if eyeleted, 4s. per 1000. Vellum Cartridge, 4 inches long, 3s. per 1000 for 10,000. Sample Labels sent on receipt of postage stamp. Orders delivered free in London.
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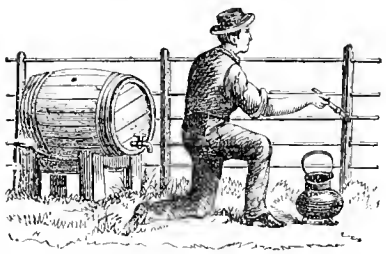

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Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon carriage paid to any Station in the Kingdom.
UNSOLICITED TESTIMONIAL.
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Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley; and 128, Queen Victoria Street, London, E.C., from whom only it can be obtained.
CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would specially draw attention to the fact that every cask of their Varnish is legibly marked with their name and address, without which none is genuine.

Rosher's Garden Edging Tiles.

THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.

GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.
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Agents for LOOKER'S PATENT "ACME FRAMES," PLANT COVERS and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.
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ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3s. per square yard upwards. Pattern Sheets, of plain or more elaborate designs, with prices, sent for selection.
WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds, Roofing Tiles in great variety, Slates, Cements, &c.
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SILVER SAND, fine or coarse grain as desired. Prices by Post per Ton or Truck Load, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.
FLINTS and BRICK BURRS for Rockeries or Ferneries.
KENT PEATS or LOAM supplied at lowest rates in any quantities.
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A liberal Discount to the Trade.

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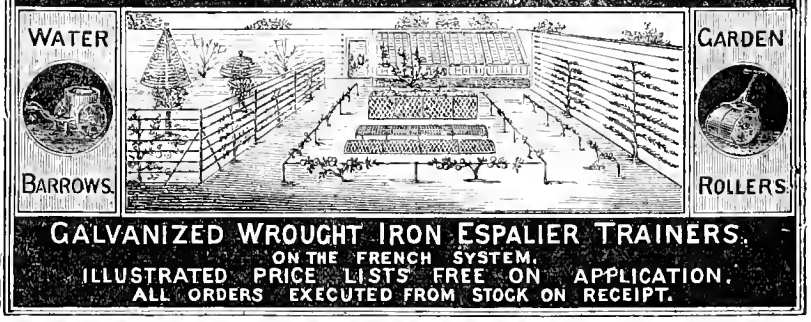

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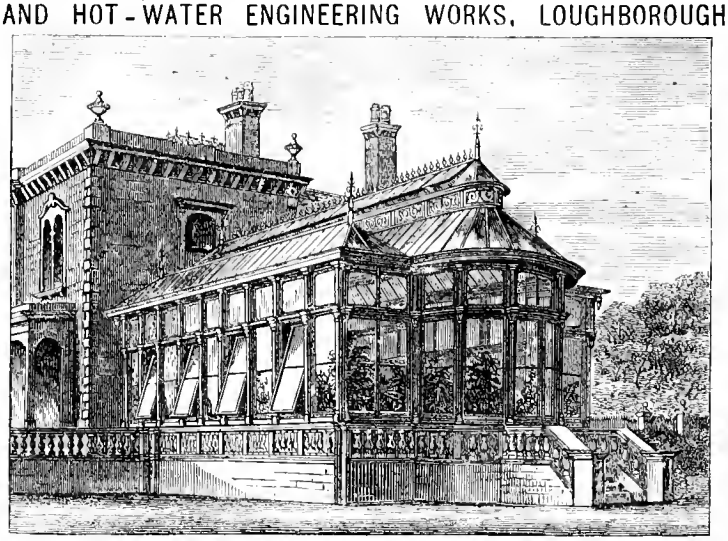

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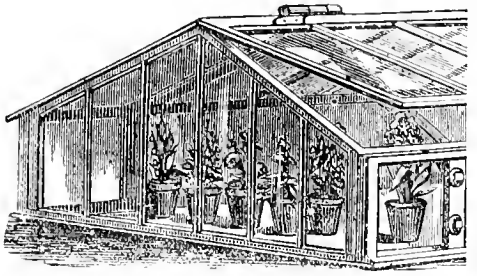

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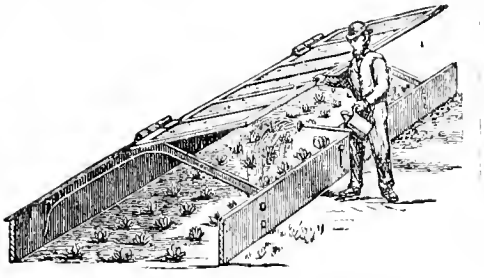

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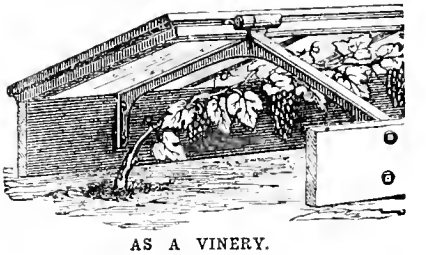

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The Judges at the Royal Horticultural Society's Great Meeting lately held at Birmingham, pronounced these Patent Plant Preservers and Ground Vineries to be by far the best and most useful articles of the kind they ever saw, and awarded them the ONLY PRIZE.

Instead of having to remove or slide loose glass every time it is necessary to attend to the plants, we attach the glazed lights (21-oz.) with hinges to the frame of each light, thereby doing away with continual breakage of glass and loss of time. Two men can instantly remove a complete length, 12 ft. by 4 ft. wide; thus proving them to be really portable. They are made in the following sizes. One pair of ends is sufficient for any number of lengths, if set in a continuous row.

Cash Prices carriage paid to any Station in England on Orders amounting to 40s. and upwards.

	Price.	Ends per pair extra.
6 feet long by 2 feet wide	£1 5 0	5s. 0d.
12 feet long by 2 feet wide	2 10 0	5s. 0d.
6 feet long by 3 feet wide	1 15 0	7s. 0d.
12 feet long by 3 feet wide	3 5 0	7s. 0d.
6 feet long by 4 feet wide	£2 6 0	8s. 6d.
12 feet long by 4 feet wide	4 4 0	8s. 6d.
12 feet long by 5 feet wide	5 10 0	10s. 6d.
12 feet long by 6 feet wide	7 0 0	12s. 0d.

Lawn Conservatories, with Glass sides and ends, 12 feet long by 4 feet wide, £7 5s.; 12 feet long by 5 feet wide, £8 15s.; 12 feet long by 6 feet wide, £10.

PATENT UNIVERSAL PLANT PRESERVERS, Large Sizes to Build on Brick Walls, for use as Span-roof Pits, suitable for Forcing, Propagating, Growing Cucumbers, Melons, and a variety of other things too numerous to mention. Write for New Illustrated List post free.

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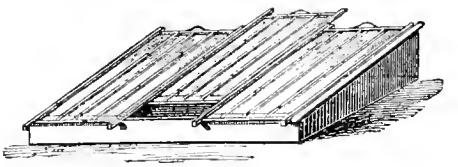
MELON OR CUCUMBER FRAMES.

All sizes (glazed with 21-oz.) ready for immediate delivery.

Height at back, 24 inches at front, 13 inches; sides, 1¼ inch thick; lights, 2 inches thick. All made of very best red deal. Painted three coats. Every pane of glass is nailed as well as puttied in. Each light is provided with an iron strengthening rod and handle.

Glazed with 21-ounce.



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4 feet long by 6 feet wide, 1 light	£1 17 6
8 feet long by 6 feet wide, 2 lights	3 5 0
12 feet long by 6 feet wide, 3 lights	4 17 6
16 feet long by 6 feet wide, 4 lights	6 7 6
20 feet long by 6 feet wide, 5 lights	7 17 6
24 feet long by 6 feet wide, 6 lights	9 7 6

One half allowed for Packing Materials when returned free to our Works. Cash or reference respectfully requested with transmission of all first orders.

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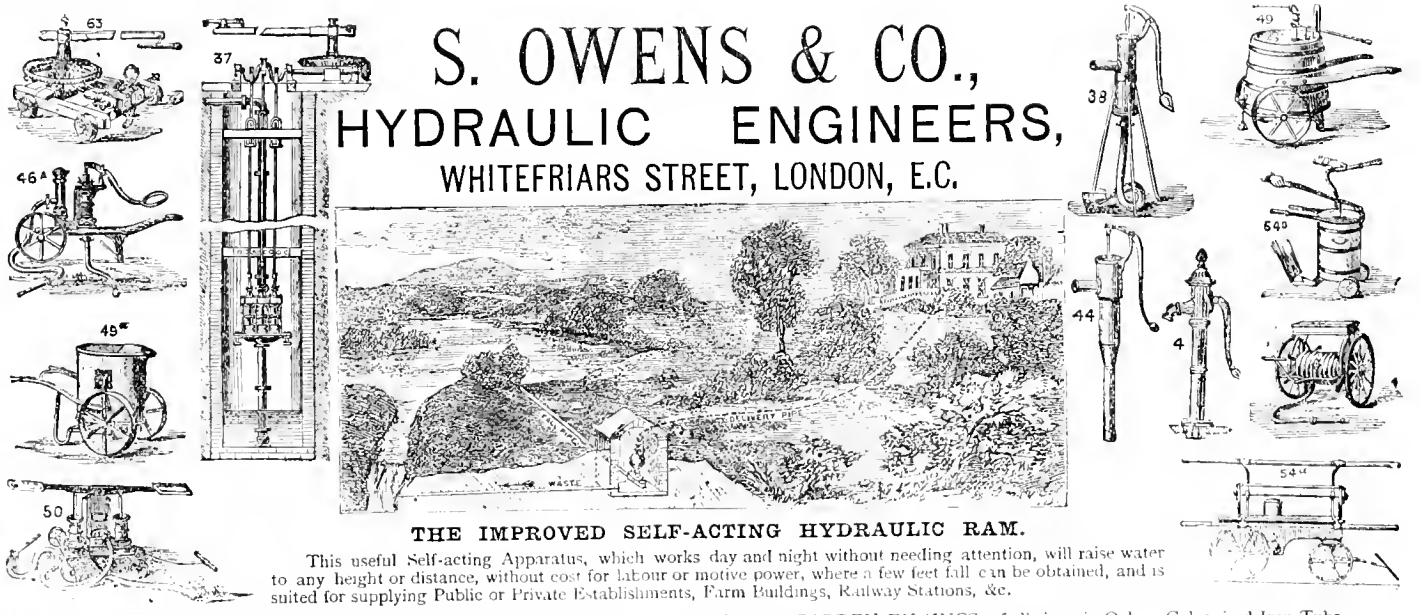
HYDRAULIC ENGINEERS,

WHITEFRIARS STREET, LONDON, E.C.



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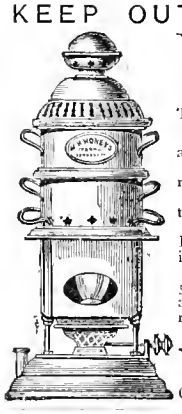

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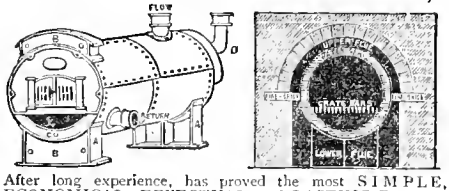

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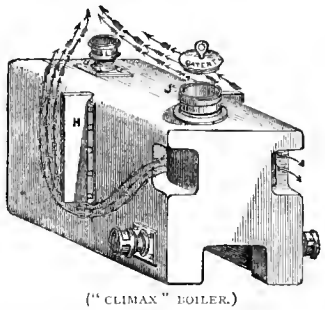

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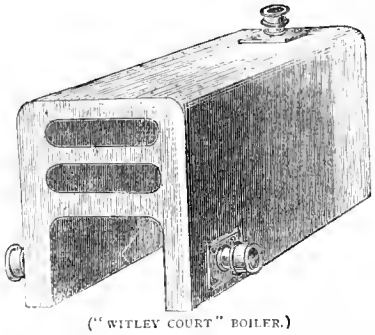

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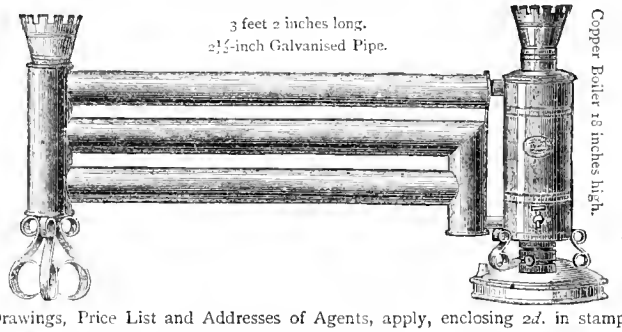

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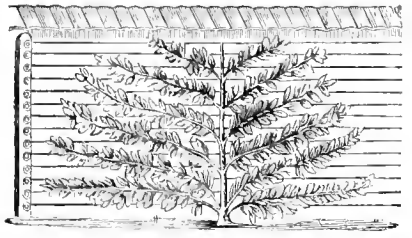

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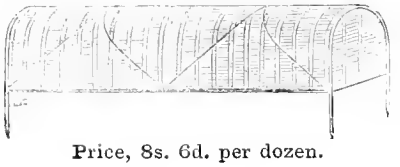

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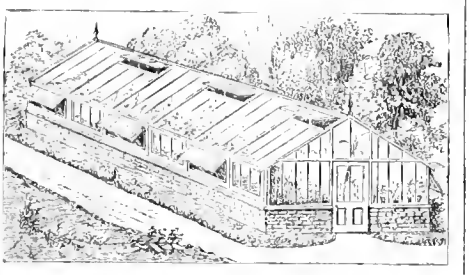

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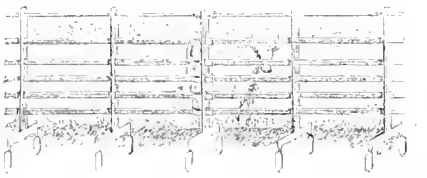

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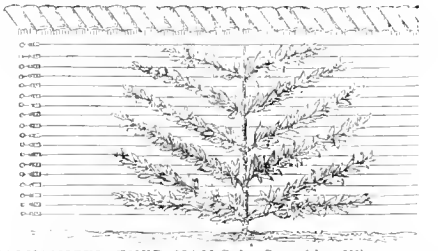

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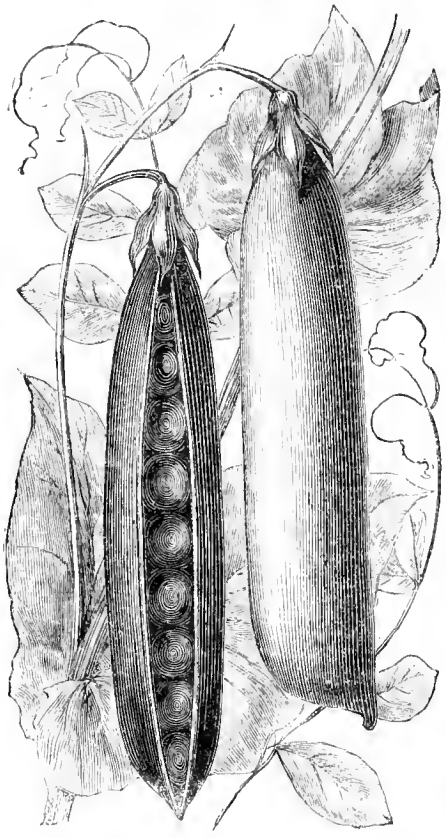

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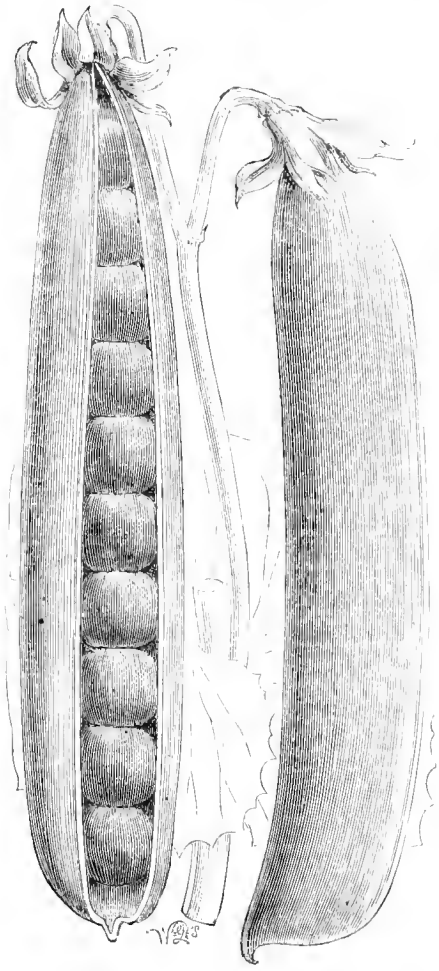

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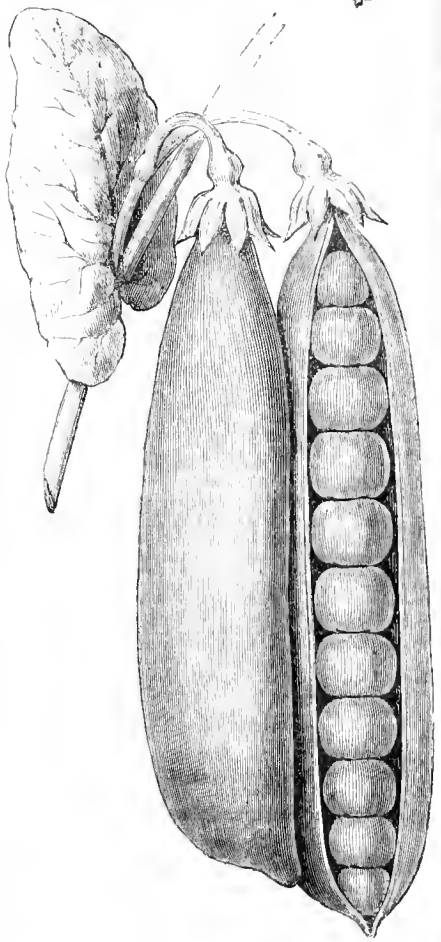

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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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Subscribers who wish to have "The Gardeners' Chronicle" forwarded DIRECT FROM THE OFFICE are respectfully informed that payment MUST BE MADE IN ADVANCE.

ROYAL HORTICULTURAL SOCIETY, South Kensington, W.
The ANNUAL GENERAL MEETING of the ROYAL HORTICULTURAL SOCIETY will be held in the Council Room, South Kensington, W., on TUESDAY, February 8. The Chair will be taken at 3 o'Clock, P.M.

GRAND SPRING FLOWER SHOW, MARCH 15 and 16, in the Large Hall, Leeds Horticultural Gardens Company (Limited). Schedules on application. Office, 103, Hyde Park Road. G. FORBES, Secretary.

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WANTED, a few hundreds of good strong FOREST TREES, from 8 to 10 feet, clean stems, well furnished trees. Send Price, &c., to
GEO. BRADFORD, Nurseryman, Hendon Valley Road, Sunderland.

HAZEL.—Wanted, 20,000 good stout transplanted, 2 to 4 feet; also, SPRUCE, well furnished, 2 to 3 feet. EWING AND CO., Norwich.

Important to the Trade.

LILIUM AURATUM.
Bulbs are now arriving from Japan in fine condition, and being Sold Weekly at very low prices, at
STEVENS' ROOMS, 38, King Street, Covent Garden, London, W.C. Catalogues on application.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Genuine Garden Seeds.

JAMES DICKSON AND SONS beg to draw attention to their large and Superior Stock of VEGETABLE and FLOWER SEEDS, and will be happy to send Priced Descriptive CATALOGUE post free on application.
108, Eastgate Street, Chester.

Genuine Seeds Only.

GEORGE EDWARDS begs to call attention to his Tenth Annual CATALOGUE, now ready. Comparison of Prices with other houses is invited.
Balham Nursery, London, S.W.

Genuine Seeds.

J. LAING'S CATALOGUE of KITCHEN GARDEN, FLOWER and AGRICULTURAL SEEDS, IMPLEMENTS, GARDEN REQUISITES, &c., is now ready, and can be had free on application.
Stanstead Park, Forest Hill, S.E.

LARGE SPECIMENS.—For Sale, four large ORANGES in tubs, and one large LEMON in tub. Will be sold a bargain. For price and other particulars, apply to
WM. PRITCHARD, Nurseryman, Shrewsbury.

Green Screens, for Shutting Out Unsightly Objects.

LOMBARDY POPLARS, fine large, 20 to 30 feet high, 3s. to 5s. each. Delivered on Rail.
T. JACKSON AND SON, Nurseries, Kingston, Surrey.

LARCH, and other FOREST TREES, extra fine Seedling and transplanted. Prices on application.
JAMES DICKSON AND SONS, Newton Nurseries, Chester.

LARCH, fine 2-yr. seedlings, cheap.
H. JACKSON, Nursery, near Kidderminster.

HOLLY AND YEWS for Hedges, 1 to 1½ foot, 20s. per 100.
H. JACKSON, Nursery, near Kidderminster.

YEWS for SALE.—About 2000, 3½ to 4½ feet high, well rooted, and grown for Hedges or Ornamental Trees, all in first-rate condition for planting or moving, at 90s. per 100
JOSH. SPOONER, Goldworth, Woking, Surrey.

PORTUGAL LAURELS, 3 feet; common do., 6 feet, very bushy, cheap.
H. JACKSON, Nursery, near Kidderminster.

RHODODENDRONS.
2-yr. seedlings. | 4 to 8 inches, transplanted.
3-yr. seedlings. | 6 to 10 inches, transplanted.
8 to 12 inches, transplanted.
For Prices and Samples apply to
HENRY FARNSWORTH, Matlock Bank, Derbyshire.

EUCALYPTUS GLOBULUS (Blue Gum of Australia).—A supply of Seed always kept on hand from the establishment of Messrs. Thomas Lang & Co., Melbourne.
JOHN WILSON, Seedsman, Whitehaven.

Orchard-House Trees in Pots.

H. LANE AND SON have a very fine lot of PEACHES, NECTARINES, and APRICOTS, well set with fruit-buds, at 5s. each.
The Nurseries, Great Berkhamsted, Herts.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

FRUIT TREES.—One of the largest stocks in the county, consisting of Standard and Pyramid CHERRIES, APPLES, PEARS, and PLUMS, from 70s. per 100. Also a large quantity of extra strong Standard and Espalier GREEN GAGES. Catalogues of
T. EVES, Gravesend Nurseries.

CURRANTS and GOOSEBERRIES.—A large surplus stock of 3-yr. to 5-yr. Red Currants, 50s. per 1000; Black Currants, 70s. per 1000; Gooseberries, 100s. per 1000. T. EVES, Gravesend Nurseries.

For Sale.

VEITCH'S IMPROVED ASHLEAF KIDNEY POTATOS, 100 bushels at 6s. per bushel.
G. STEVENS, St. John's Nursery, Putney, S.W.

Apple and Pear Scions for Spring Grafting.

A. M. C. JONGKINDT CONINCK offers the above at low prices. A List of the sorts and prices on application.
Tottenham Nurseries, near Zwolle, Netherlands.

FOR SALE, about FOUR ACRES of good TURF, at Clapham. To be cleared within a month.
J. POUSTY, 97, Fleet Street, E.C.

SALES BY AUCTION.

Auction Mart.

For UNRESERVED SALE, an important consignment of 6000 unusually fine LILIUM AURATUM, in splendid condition; and a variety of choice JAPANESE MANUFACTURES and CURIOS from Japan; also 800 choice double CAMELLIAS, Indian and Ghent AZALEAS from Belgium, well set with bloom-buds.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the Mart, Tokenhouse Yard, near the Bank, E.C., on MONDAY, January 31, at 11 for half-past 11 o'Clock precisely.

On view morning of Sale. Catalogues had at the Mart, and of the Auctioneers, 98, Gracechurch Street, E.C.

Exeter.

IMPORTANT and totally UNRESERVED four days' SALE of an unrivalled collection of specimen EVERGREENS and CONIFERÆ, also thousands of SMALLER STOCK, extending over 100 acres, particularly worthy the attention of Noblemen and Gentlemen improving their estates, and also of the Trade and others largely employed in planting.

MESSRS. PROTHEROE AND MORRIS have been favoured with instructions from Messrs. Lucombe, Pince & Co., to SELL the above by AUCTION at the Exeter Nurseries, Exeter, on TUESDAY, February 8, and three successive days, at 10 for 11 o'Clock each day. The stock may be viewed at any time prior to the Sale.

1876.—Preliminary Notice of

FORTHCOMING SALES, by PROTHEROE AND MORRIS, Nursery, Market Garden, and Estate Auctioneers, Surveyors and Valuers.

FEBRUARY 14 to 18.—HEATHERSIDE NURSERY. Five days' sale.—The first portion of this noted healthy and choice Nursery Stock, ranging over the extensive Freehold Building Estate, now in the hands of the Auctioneers, for sale by private treaty.

FEBRUARY 22.—The EXOTIC NURSERY, Tooting, S.W. By order of Mr R. Parker. Selected assortment of well-grown Nursery Stock.

FEBRUARY 23 and 24.—WINDLESHAM, near Bagshot, Surrey. By order of the Mortgagee, with the concurrence of the Executors of the late Mr. George Baker, deceased. Choice and principally Thriving Young Nursery Stock.

Catalogues of the above may be had (when ready) of the Auctioneers, &c., 98, Gracechurch Street, E.C.

Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, January 31, at half-past 12 o'Clock precisely, an importation of the new and beautiful ODONTOGLOSSUM CIRRHOSUM, just received from South America in good condition. This superb new Odontoglossum is a much more handsome species than the still rare O. nævium, somewhat resembling it in colour and character, but infinitely superior. It produces fine strong branched spikes of blossom, each flower 3 to 4 inches across, white, marked, and spotted in the way of O. nævium, exceedingly chaste and beautiful. Also a large importation, in the finest possible condition, just received from Ecuador, of ODONTOGLOSSUM HALLII, many of them in huge masses, the largest and finest ever imported, with from 20 and 30 to 40 bulbs each. This rare Odontoglossum is one of the most magnificent of the family. At the same time will be sold an importation from South America of a new Oncidium, ONCIDIUM PENTADACTYLON. Plants of this Oncidium have not before reached this country alive. Also a few plants from Ecuador of a Masdevallia, most likely an entirely new species. At the same time will also be sold an importation of plants in good condition, just received from India, of the true and exceedingly rare white-flowering DENDROBIUM BARBATULUM; and from Brazil a quantity of the attractive SOPHRONITES GRANDIFLORA.

On view the morning of Sale, and Catalogues had.

Periodical Sale of Poultry and Pigeons.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, February 1, at half-past 12 o'Clock precisely, first-class CREVECŒURS, from Mr. J. J. Malder, comprising Birds that have won Cups at the principal shows in England; SPANISH, from Mr. Crisp; imported HOUDANS and GREY DORKINGS, from the Marquis of Blandford; prize JACOBINS, from Mr. A. A Vander Meersch; and a great variety of other choice POULTRY and PIGEONS from the yards and lofts of well-known breeders and exhibitors.

On view the morning of Sale, and Catalogues had.

Plants and Bulbs.—Sale No. 4633.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, February 2, at half-past 12 o'Clock precisely, 2000 First-class Standard and Dwarf ROSES, from well-known French Nurseries; CAMELLIAS and other Greenhouse Plants from Ghent; Specimen CONIFERS, and Hardy Ornamental and Deciduous TREES and SHRUBS, FRUIT TREES, Herbaceous PLANTS, and an Importation of GLADIOLI, ANEMONES, RANUNCULI, LILIUMS, &c., for present planting.

On view the morning of Sale, and Catalogues had.

Rare Lilies and Other Roots.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY, February 3, at half-past 12 o'Clock precisely, RARE LILIES and other ROOTS, including the following and other genera in many species and varieties, with descriptive notes:—Achimenes, Alstrœmeria, Amaryllis, Antholyza, Adiantum pedatum, Babiana, Begonia, Bobartia, Brunsvigia, Caladium, Chlidanthus, Coburgia, Colchicum, Crinum, Crocosmia, Curcuma, Cyclamen, Cypripedium spectabile, Cyrtanthus, Erythrinæ, Erythronium, Eucharis, Eurycles, Epigea repens, Fritillaria, Gastronema, Gesnera, Griffinia, Gentiana Andrewsi, Habranthus, Hæmanthus, Helleborus, Hippeastrum, Iris, Ismene, Ixia, Nerine, Nymphæa, Oxalis, Pæonia, Pancratium, Pardanthus, Pogonia Ophioglossoides, Scilla, Sparaxis, Sternbergia, Sarracenia purpurea, Triteleia, Tropæolum, Tulipa Greigii, Urceolina, Vaccinium macrocarpon, the large American Cranberry, Watsonia, Xerophyllum asphodeloides, Zephyranthes; also an importation of 10,000 splendid Bulbs of LILIUM AURATUM, from Japan, in fi condition, and a quantity of NEW JAPANESE LILIES.

On view the morning of Sale, and Catalogues had.

Imported Orchids, Lilies, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, February 7, at half-past 12 o'Clock precisely, an Importation of ODONTOGLOSSUMS, principally crispum, from New Grenada, in good condition; also a quantity of other imported ORCHIDS; and an importation of 10,000 very fine bulbs of LILIUM AURATUM in splendid condition, and a variety of other LILIES, GLADIOLI, ANEMONES, &c.

On view the morning of Sale, and Catalogues had.

Preliminary.—Sale of a very Valuable Collection of Specimen and Half-specimen STOVE and GREENHOUSE PLANTS, the whole of which have been exhibited.

ARTINGSTALL AND HIND (the surviving Partners of the late Firm of CAPES, DUNN & Co.) beg to announce that they have received instructions from Messrs. E. Cole & Sons to SELL by AUCTION, about the middle of April, at their Nurseries, Withington, near Manchester, the valuable Collection of EXHIBITION PLANTS.

Catalogues will be prepared in due course, and further information may be had by applying to the Auctioneers, 5, Princess Street, Manchester.

TO BE LET, GRASS LANDS in WIMBLEDON PARK, eight miles from the City and West End, and near three stations on the South-Western Railway. Entry at Lady-day. No valuations. Apply to Mr. ALFRED W. OBORNE, Resident Agent's Office, Wimbledon Park, S.W.

Choice Novelties in Vegetables, Flowers, and POTATOS.—See

SUTTONS' AMATEUR'S GUIDE, Post-free for fourteen stamps.

SUTTONS' SHORT SELECT SEED LIST, gratis and post-free.
SUTTON AND SONS, The Queen's Seedsmen, Reading.

BOX EDGING.—10,000 yards, splendid quality. Sample and price from J. B. YOUNG, Landscape Gardener, Bridge of Allan.

BEDFORDSHIRE SUPERIOR SEEDS. SEED POTATOS, CABBAGE PLANTS, &c. Large buyers (stating quantity required) liberally treated with. Special prices, &c., on application to FREDERICK GEE, Seed Grower, &c., Biggleswade, Beds.

G. CHORLEY, Midhurst, has to offer:—CHESTNUT, Spanish, 100,000, 2 to 3 feet; 200,000, 18 inches to 2 feet; Seedling ditto, 100,000; ASH, 200,000; ALDER, 50,000; THORN, Quick, 50,000. All stout, well rooted, transplanted.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application. Mr. WEBB, Calcot, Reading.

Lilium auratum—Orchids.

W. F. BOFF offers magnificent Bulbs of LILIUM AURATUM, at 6s., 9s., and 12s. per dozen; one of each size post free for 36 stamps. W. F. B. also offers ORCHIDS, good sorts, nice plants, at 21s., 30s., and 42s. per dozen.

203, Upper Street, Islington, N.

LILIUM AURATUM (great Japanese Lily.—Remarkably fine flowering Bulbs from 1s. 6d. to 7s. 6d. each.
SUTTON AND SONS, Royal Berks Seed Establishment, Reading.

To the Trade.

DWARF ROSES, fine stuff on Manetti, of all the leading varieties, 35s. per 100, £15 per 1000. List of sorts on application.
GEO. COOLING, Nurseryman, Bath.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy,
The Ottershaw Nursery, Chertsey.

PEAS.—10 bushels of MACLEAN'S LITTLE GEM and 12 bushels of MACLEAN'S ADVANCER—good seed and samples—to be sold at moderate prices.—Apply to
Mr. LOCKE, 7, Borough Market, London, S.E.

Fruiting Vines.

H. LANE AND SON have still some fine Fruiting Canes to offer, of their usual excellent quality. H. L. AND SON have always taken the First Prize for Vines in Pots at all the leading exhibitions. The Vine eyes, being taken from our own Vineries, may be depended on as true to name.
The Nurseries, Great Berkhamsted, Herts.

To the Seed Trade.

THE TRADE PRICE CURRENT for GARDEN and FARM SEEDS for 1876 is now ready, and will be sent Free by Post upon application.
THE LAWSON SEED AND NURSERY COMPANY (LIMITED),
1, George IV. Bridge, Edinburgh, and 54, Bishopsgate Street Within, London, E.C.

CALCEOLARIAS (Spotted).—London Exhibition Strain, splendid little Plants just ready for potting, 1s. 6d. per doz., post-free. Nice plants, established in pots, 2s. 6d. Price per 100 and 1000 on application, package free. "Seventeen Acres of Flowers," Swanley, Kent.

Seed Potatos
MYATT'S ASHLEAF KIDNEY (TRUE).

H. CANNELL has about 1½ ton to offer; they came off cloggy soil, and would, therefore, produce a fine crop on light land
Swanley, Kent.

For 1876. CARTER'S NEW SEED CATALOGUE has been forwarded to all customers: should any have failed to reach their destination we shall be glad to be informed, when a duplicate copy will be immediately despatched.
CARTER'S, the Queen's Seedsmen, 237 and 238, High Holborn, London, W.C.

RICHARD SMITH'S FRUIT LIST contains a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c. Free by post for one stamp.
RICHARD SMITH, Nurseryman and Seed Merchant Worcester.

Standard and Dwarf Roses.
WHOLESALE and RETAIL.

H. LANE AND SON have a large stock to Dispose of. Special offer for quantities.
The Nurseries, Great Berkhamsted, Herts.

NOTICE.—Our NEW VEGETABLE and FLOWER SEED CATALOGUE has been posted to all our customers ten days ago; should any of our friends not have received a copy we shall be glad to send another.
DICKSON, BROWN, AND TAIT, Seed Merchants, 43 and 45, Corporation Street, Manchester.

SEED POTATOS.—We can supply by the Cwt., Sack, or Ton, fine samples of the following, at very moderate prices:—Mona's Pride, Myatt's Prolific, Rivers' Royal Ashleaf, Suttons' Racehorse, Lapstone, King of the Flukes, American Early Rose, and other Kidney varieties. Prices on application.
J. AND G. MCHATTIE, Seed Merchants, Chester.

To the Trade.

CHARLES SHARPE AND CO.'S Wholesale CATALOGUE of Home-Grown Seeds, Agricultural Seeds, Kitchen Garden Seeds, Flower Seeds, Seed Potatos, is now ready, and will be forwarded post-free on application.
CHARLES SHARPE AND CO., Seed Growers and Merchants, Sleaford; and at 31, Seed Market, Mark Lane, E.C.

Enormous Reduction.

LILIUM AURATUM.—Magnificent Bulbs of these exceedingly beautiful Lilies, just arrived from Japan in the finest possible condition—sizes Nos. 1 to 4, at 4s., 6s., 8s., and 12s. per dozen. Single samples sent post-free on receipt of two extra stamps to the Importer (with whom samples may be seen)—
WM. GORDON, 10, Cullum Street, E.C.

The Best Celery is

LEICESTER RED—1s. per packet.
The best SAVOY is KING KOFFEE, 1s. per packet; with many other choice stocks of Seeds. TRADE PRICED LIST on application.
HARRISON AND SONS, Seed Growers, Leicester.

Seeds, Seeds, Seeds.

THE HEATHERSIDE NURSERIES CO.'S Illustrated CATALOGUE of GARDEN, FARM, and FLOWER SEEDS is now ready, and will be sent, post paid, on application.
59, Queen Victoria Street, London, E.C.

TAPLIN'S BANBURY IMPROVED WHITE SPANISH ONION SEED, 1s. 6d. per packet.
Taplin's Treatise, "HOW TO GROW ONIONS," 6d.
J. A. TAPLIN, 22, Parson's Street, Banbury.

To Noblemen, Gentlemen, and the Trade.
LARCH FIRS—LARCH FIRS.

JOHN PERKINS AND SON beg to offer fine transplanted LARCH FIR, 1½ to 2 and 2 to 3 feet. Samples and price on application to
52, Market Square, Northampton.

Special Culture of Fruit Trees and Roses.

THE DESCRIPTIVE and ILLUSTRATED CATALOGUE of FRUITS (by THOMAS RIVERS) is now ready; also CATALOGUE of Select ROSES. Post-free on application.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

Sow Now.

TANTON'S RELIANCE CUCUMBER, the best Black-spine known, very Hardy and Prolific, for House or Frame. Grown extensively for the London Fish Salesmen. Twelve seeds 1s. 7d., post-free.
RANSLEY TANTON, Seed Merchant, Borough End, London Bridge, S.E.

SEEDS, SEEDS.—Samples of 1875 Harvest now on view; 5 per cent. discount on all orders of £1 and upwards.
Will be ready in a few days, the best Descriptive CATALOGUE extant.
RANSLEY TANTON, Seed Merchant, Borough End, London Bridge, S.E.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—At the Annual General Meeting of the Members, held on January 20, for the ELECTION OF FOUR PENSIONERS, the following was the result of the Ballot:—

CANDIDATES.

Name.	Age.	Votes.
THOMAS HOPKINS	68	728
HENRY BUTCHER	71	300
GEORGE DYER	68	855
JOHN BLACKSHAW	62	158
JOSHUA LANCASTER	50	1037
MARY ANN ADDISCOTT ..	63	306
HENRY ASHTON	68	133
WILLIAM BLACK	50	270
JAMES GOSTLING	71	505
FRANCES HERROD	63	1076
STEPHEN WEST	73	195
WILLIAM TRUSTY	67	374

The Meeting then declared FRANCES HERROD, JOSHUA LANCASTER, GEORGE DYER, and THOMAS HOPKINS, as having the greatest number of Votes, duly ELECTED PENSIONERS of this Society.—By order,
EDW. R. CUTLER, Secretary
14, Tavistock Row, W.C.—January 22, 1876.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

RENDLE'S PATENT SYSTEM OF GLAZING,

WINTER GARDENS, PATENT PLANT HOUSES, CONSERVATORIES,

AND ORCHARD HOUSES.

UNDER THE PATRONAGE OF

His Royal Highness the Prince of Wales
His Royal Highness Prince Christian
His Highness the Maharajah Dhulep Singh
Her Majesty's Commissioners for Parks and Gardens
His Grace the Duke of Rutland
His Grace the Duke of Portland
His Grace the Duke of Sutherland
His Grace the Duke of Devonshire
The Most Noble the Marchioness of Anglesey
The Right Honourable the Earl of Stamford and Warrington
The Right Honourable the Earl of Macclesfield
The Right Honourable the Earl of Portsmouth
The Right Honourable the Earl of Dartmouth
The Right Honourable Lord Portman
The Dowager Countess of Aylesford
The Right Honourable Lord Ebury
The Right Honourable Lord Vernon
The Right Honourable the Earl of Carnarvon
The Right Honourable Lord Aberdare
The Right Honourable Lord Alfred Churchil
The Right Honourable the Earl of Bradford
The Right Honourable the Earl De la Warr
The Right Honourable Sir W. G. Hayter, Bart.
The Honourable Mrs. Talbot
The Right Honourable Lady Rayleigh
The Right Honourable Lord Charles Russell
The Viscountess Galway
The Right Honourable Lord Berkeley Paget
The Right Honourable Lord Bolton
The Right Honourable Lord De l'Isle and Dudley
The Lord Bishop of Bath and Wells
The Honourable Arthur Kinnaird, M.P.
The Honourable Martin Sackville West
The Honourable Ashley Ponsonby
The Honourable Slingsby Bethell
The Very Reverend the Dean of Canterbury
Sir Daniel Gooch, Bart., M.P.
Count Heinrich Zichy, Vienna
The Baron Amphlett
The Royal Aquarium and Winter Garden Society, Westminster
The Royal Horticultural Society, South Kensington
The Royal Gardens, Kew
The Botanic Gardens, Chelsea
The Great Western Railway Company [Kingdom.
And One Thousand of the leading County Families in the United

The highest Testimonials can be obtained on application, and references given to Noblemen and Gentlemen in every County in England.

RAILWAY STATIONS, WINTER GARDENS, EXHIBITION BUILDINGS, SKATING RINKS, RAILWAY SHEDS, AND MARKETS, PUBLIC BUILDINGS, &c.

The new System of Glazing will speedily be introduced for the above: and Architects, Surveyors, Builders, and Contractors are especially recommended to adopt it.

On some Railways the expense of repairing and renovating of Glass Roofs is very large; and an enormous saving will be effected when the new system of Glazing is introduced.

The Patentee has already received instructions from the Great Western Railway Company to cover several of their new Stations on the system.

Architects, Surveyors, Builders, and Contractors are requested to see the great Circular Roofs of the Royal Aquarium and Winter Garden in Westminster.

On the old putty system the intense heat of the sun in the summer months cracks the putty, then the heavy autumnal and winter rains get in the crevices, the putty perishes, and in a short time the bars are rotten and decayed. On the new system there are no sash-bars, no putty, or paint to destroy. All perishable materials are completely covered by the Glass from the damaging influences of the weather, and the system may therefore fairly be called Indestructible.

PUBLIC AND PRIVATE SKATING RINKS.

Estimates will be forwarded on application for the formation of Public and Private Skating Rinks.

The floors can be constructed of best Diamond Cement, Asphalte, or Pine Wood.

Ornamental Designs for Skating Rinks will be furnished.

ADVANTAGES OF RENDLE'S NEW PATENT SYSTEM OF BUILDING AND GLAZING

Orchard Houses, Plant Houses, Greenhouses, Pavilions, and Winter Gardens.

1. *The glass is placed in horizontal metal grooves, and fixed on wooden or iron rafters.*
2. *The woodwork and ironwork is entirely and completely covered by the metal and the glass, so that it is not exposed to the action of the atmosphere.*
3. *The glass moves freely in the metal grooves, and can be easily removed.*
4. *The most complete ventilation can be given, and whole rows of glass can be removed for the Summer season, when abundance of air is required for plant life.*
5. *If a pane of glass is broken, it can easily be replaced without the aid of the glazier.*
6. *No paint is exposed to the damaging action of the atmosphere.*
7. *No putty or any other perishable cement is required.*
8. *It is the most economical system ever introduced.*
9. *It is portable in the truest sense of the word. The carriage of a Span-roofed House, 40 feet long, for a distance of 250 miles, is not more than £5.*
10. *The Patentee has received many orders from America and the Colonies, as they are so portable and can be packed in so small a compass: indeed, for exportation it is the only system that can be adopted, except at an enormous outlay for freight and carriage.*
11. *All the Houses on this system are tenant's fixtures, and can be easily taken down and fixed again.*
12. *It is light, elegant, and durable, and the system is perfect. A Protector can be put up 6 feet long, or a Winter Garden can be erected to cover several acres of ground.*
13. *The Patent Grooves not only carry off the water outside, but they are so made that they will carry off all water from the condensed steam inside, so that the Grooves carry off all water outside and inside. This is of material consequence in Stoves and Orchid Houses, where much water is generated from condensed steam, as all the drip is positively carried off by the inner groove.*
14. *The Roof can be Glazed in one-fourth of the time of the old plan.*
15. *The Roofs will have a grand effect, as only a narrow strip of zinc will be seen, and the whole will look like one Grand Square of Glass.*
16. *The formation of the Roof is of the strongest character—the whole being tied together by Cross Bars of great durability.*
17. *As all the perishable materials are completely covered by the glass, the system may fairly be described as Indestructible.*

RENDLE'S PATENT SYSTEM OF GLAZING.

THE GREAT CIRCULAR ROOFS OF THE ROYAL AQUARIUM AND SUMMER AND WINTER GARDEN ARE GLAZED ON THIS SYSTEM.

Estimates given for Glazing the Roofs of Winter Gardens, Exhibition Buildings, Skating Rinks, Railway Stations, Public Buildings, as well a Conservatories, Plant Houses, Orchard Houses, Greenhouses, &c.

Illustrated Catalogues and Books of Design, with 100 Engravings, can be obtained from the Patentee and Inventor,

WM. EDGCUMBE RENDLE, 3, WESTMINSTER CHAMBERS, VICTORIA ST., LONDON, W.

CUCUMBER and MELON SEED

DUKE OF EDINBURGH CUCUMBER (Daniels'). saved from seed had direct from the Raiser. Per packet, 1s.
TELEGRAPH CUCUMBER (true), per packet, 1s.
DUKE OF EDINBURGH MELON (Suttons'), new Scarlet-flesh. Per packet, 1s
LITTLE HEATH (Monro's). Per packet, 1s.
The four varieties for 3s Stamps with orders.
WILLIAM BRYANT, The Nursery, Rugby.

JOSEPH SMITH, SEN., Tansley and Scotland Nurseries, near Matlock, Derbyshire, has for Sale:—
RHODODENDRON PONTICUM, 4-yr. old seedlings, not grown on bog, but on heath soil, with fine roots; stiff healthy plants, 3 to 4 inches high, 5s per 1000. Also Hybrid Catawbiense, named sorts, 7s. 6d. per 1000; with transplanted, from 1 to 1½ foot up to 3 and 4 feet, at very low prices, which can be had on application.
OAKS, large quantity, 3 to 4 and 4 to 5 feet.
With a GENERAL NURSERY STOCK. Prices on application.

To the Trade.

ISAAC DAVIES, NURSERYMAN, Ormskirk, Lancashire, can supply CUPRESSUS LAWSONIANA, 9 feet, 30s.; 6 feet, 12s.; 5 feet, 9s.; and 4 feet, 6s. per dozen, transplanted last April. CEDRUS ATLANTICA, 7 feet, 36s.; and 6 feet, 30s. per dozen. SKIMMIA JAPONICA, 1 foot, with berries, 6s. per dozen; 9 inches, 21s. per 100. VIRGINIAN CREEPERS, strong extra transplanted, 16s. per 100. CLIMBING ROSES, of sorts, fine plants, 4s. 6d. per dozen. DAPHNE CNEORUM, fine bushes, 6s. per dozen; ditto MAJOR, ditto, 7s. per dozen. INDIAN AZALEAS, good plants, 9s. per dozen; large flowering plants, 12s. to 18s. p. doz.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of
WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WVKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURV SWEDES, &c.

DR. MACLEAN PEA.

"I cannot withhold my meed of approval of Mr. Turner for not hurriedly sending out his new Pea, 'Dr. Maclean,' but reserving it until his stock has become sufficient to distribute it at a reasonable price. I do not speak without knowledge of this variety when I say it is one of the most important acquisitions of recent years."—*Journal of Horticulture*, Jan. 13, 1876.

"There does not remain room to doubt that this is the finest Pea in the world."—*The Garden Oracle*, January, 1876.

CHARLES TURNER is now executing orders for this fine Pea, 7s. 6d. per quart, 4s. per pint; for full description see SEED CATALOGUE, now ready, and which may be had free on application.

The Royal Nurseries, Slough.

New Cucumber for 1876.

LEE'S ALTRINCHAM DEFIANCE.—This Cucumber is quite a novelty, and is very distinct from anything hitherto offered to the public; it is a smooth variety, very dark green, a great cropper, and is quite unequalled in quality. Its average length is from 15 to 20 inches. The seed, which is now ready, will be sent out in sealed packets only, price 2s. 6d. per packet of five seeds. Usual allowance to the Trade.

From the Altrincham and Bowdon United Horticultural Benefit and Provident Society:—"Having seen Mr. Lee's Cucumber growing, as well as a brace before us, and taking into consideration the good qualities of it, we consider it to be one of the best ever offered to the public. We therefore name it Lee's Altrincham Defiance. (Signed) J. WALKER, Sec.

H. LEE, Florist and Landscape Gardener, Peel Causeway, Altrincham, Cheshire

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To the Trade Only.

JOHN BESTER, White Hart Lane, Tottenham, offers the following:—
PELARGONIUMS, Queen Victoria, 10s. per dozen; Trlomphe de St. Maude, the finest crimson-red market kind, 10s. per dozen; packing included.
BALSAM SEED, a few ounces of the very finest, in nine colours, 10s. per oz.
CUCUMBER, Beauty of St Albans, 7s. per 100.
LOBELIA PUMILA MAGNIFICA, from store pots, at per 100 or 1000. Price on application.
All orders prepaid.

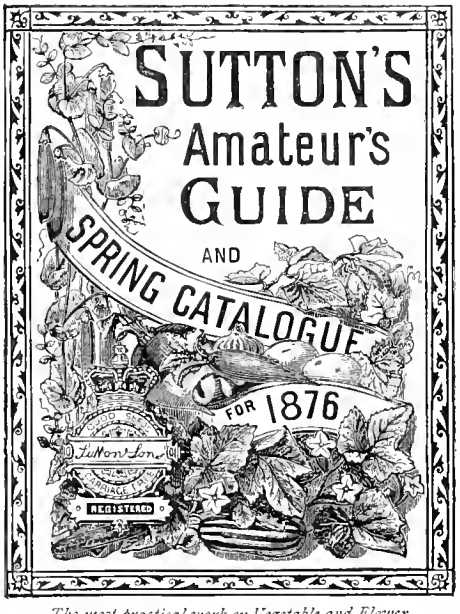
WM. PAUL AND SON
HAVE TO OFFER:—
SPECIMEN ROSES,
2 to 5 feet, 5s. to 105s. each, loaded with incipient flower-buds, suitable for exhibiting this year.
*** Thousands of young plants, Standards and Dwarfs, at the customary nursery prices.
SPECIMEN CAMELLIAS,
3 to 10 feet, 21s. to 30 guineas each; handsome trees, with bloom.
*** Thousands of young plants of all the best sorts, with bloom, at the ordinary nursery prices.
SPECIMEN FRUIT TREES.
Apples, Pears, Cherries, Plums, &c., pyramids, well set with fruiting buds, will bear a crop this year; 3 to 8 feet high, well balanced trees, 30s. to 60s. per dozen.
*** Thousands of young trees of every kind at the usual Nursery prices.
SPECIMEN EVERGREENS and SHRUBS
of all the best sorts; acres to select from; 1000 species and varieties; individual prices on application.
SPECIMEN LIMES, 12 to 14 feet, 36s. to 48s. per dozen.
,, PLANES, 12 to 18 feet, 7s. 6d. to 15s. each.
,, ELMS, 12 to 14 feet, 24s. per dozen.
,, TURKEY OAKS, 12 to 14 feet, 36s. per dozen.
*** A large collection of Avenue, Roadside, and Park trees, &c.
Priced descriptive CATALOGUES post-free on application.
IMPORTANT.—Observe the Christian Name—
WM. PAUL AND SON, Paul's Nurseries, Waltham Cross, Herts.

This Collection is specially suitable for a "Moderate-sized Garden," and contains:—

Peas, best sorts	20 *pts.*	Leek, best varieties	1 *pkt.*
Beans do.	8 ,,	Lettuce, do.	3 ,,
French Beans, do.	3 ,,	Mustard, do.	1 *pt.*
Beet, Suttons' and other best sorts	2 ,,	Melon, do.	2 *pkt.*
Borecole, do.	3 ,,	Onion, do.	5 *oz.*
Brussels Sprouts, do.	1 *pkt*	Parsley, do.	1 ,,
Broccoli, best sorts	5 *pkt.*	Parsnip, do.	3 ,,
Cabbage, do.	5 ,,	Radish, do.	7 ,,
Savoy, do.	2 ,,	Spinach, do.	1½ *pts.*
Carrot, do.	7 *oz.*	Salsify, do.	1 *pkt.*
Cauliflower, do.	2 *pkt.*	Scorzonera, do.	1 ,,
Celery, do.	2 ,,	Turnip, do.	6 *oz.*
Couve Tronchuda	1 ,,	Vegetable Marrow, do.	1 *pkt.*
Cress, best sorts, 8 *oz.* &	2 ,,	Sweet and Pot Herbs, best sorts	4 ,,
Cucumber, do.	3 ,,	Tomato, best sorts	1 ,,
Endive, do.	2 ,,	Rampion	1 ,,
Capsicum	1 ,,	Corn Salad	1 ,,
Orache	1 ,,		

All of the best and most productive kinds.

ALL WHO HAVE A GARDEN
AND WISH TO GROW
THE BEST VEGETABLES, THE BEST FLOWERS, THE BEST POTATOS,
SHOULD SEND FOR



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Is beautifully illustrated with three handsome Coloured Plates (representing twenty-eight subjects) and nearly 500 Engravings of the best varieties of Vegetables, Flowers and Potatos. It contains complete instructions for the successful cultivation of everything connected with the Vegetable and Flower Gardens.

Price 1s. *Post-free for fourteen stamps, or gratis to Customers.*

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THE QUEEN'S SEEDSMEN, READING.

THE PLANTING SEASON.
CHEAP OFFER.

LAURELS, 2 feet, 80s. per 1000; transplanted last spring, 2 to 3 feet, bushy, 100s. per 1000; fine plants, 3 to 5 feet, 25s. per 100; Portugal do., specimens, all transplanted last spring, 2 to 3 feet, 60s. per 100; 3 to 3½ feet, 100s per 100; TREE BOX, fine, 2 to 3 feet, 30s. per 100; Variegated do., 2 to 3 feet, 40s. per 100; CEDRUS DEODARA, fine specimens, 3 to 4 feet, 30s. per dozen; 4 to 5 feet, 42s. per dozen; OAKS, English, 4 to 6 feet, very strong, 60s. per 1000; CHESTNUTS, Horse, strong, 3 to 4 feet, 50s. per 1000; 4 to 6 feet, very strong, 80s. per 1000 Put on rail for cash by
R. TUCKER, The Nurseries, Faringdon, Berks.
A Priced CATALOGUE of General Nursery Stock on application.

Vines, Vines—Dwarf Roses.

PLANTING and FRUITING CANES of Black Hamburgh, Black Alicante, Lady Downe's, Muscat of Alexandria, White Lady Downe's, Madresfield Court, Gros Colman, Mrs. Pince, Trentham Black, Buckland Sweetwater, Foster's Seedling, Dr. Hogg, Muscat Hamburgh, Royal Muscadine, and West's St. Peter's, 2s. 6d. to 5s. each; Waltham Cross, 5s. to 7s. 6d. each; Pearson's Golden Queen, 21s. to 31s. 6d. each.
DWARF ROSES, extra strong, 6s. per dozen.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

Extra Strong Vines in Pots.

DICKSON, BROWN, AND TAIT, SEED MERCHANTS, 43 and 45, Corporation Street, Manchester, can supply several hundred extra strong, well-ripened, short-jointed CANES, for Fruiting in pots or Planting, of the following varieties:—Black Alicante, Bowood Muscat, Buckland Sweetwater, Foster's Seedling, Gros Colman, Black Hamburgh, Lady Downe's, Madresfield Court, Mrs. Pince, Muscat of Alexandria, &c. Prices on application.

New and Genuine Seeds Only.
Now ready, gratis and post-free,

BRUNNING AND CO.'S New Illustrated and DESCRIPTIVE CATALOGUE of the above for the present season, containing a selection of the choicest novelties, together with the most approved older varieties, profusely Illustrated, and contains a splendid Coloured Plate representing a group of choice Hybrid Gladioli, for the growth of which their Nurseries are noted. Forwarded post-free to all applicants.
ISAAC BRUNNING AND CO., The Yarmouth Seed Establishment, 1, Market Place, Great Yarmouth.

Abies excelsa aurea (the Golden Spruce).

MESSRS. J. AND C. LEE beg to announce that they now intend to send out this magnificent tree. When planted in the full sunlight the whole tree is suffused with the richest gold. First-class Certificate from the Floral Committee of the Royal Horticultural Society. Well-established plants, 21s. each. A few of extra sizes, 31s. 6d. and 42s. each. The usual allowance to the Trade.
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W. AND J. BROWN have the following to offer:—
LAURELS, common, from 100 to 1000, 4 to 5 feet, very strong, 40s. to 50s. per 100.
YEWS, English, 50 to 300 fine bushy, 4 to 5 feet, 18s. to 24s. per dozen.
AUCUBA JAPONICA, 50 to 200 fine bushy, 2½ feet, 18s. to 21s. per dozen.
PEACHES and NECTARINES, dwarf, 2-yr., trained, 21s. to 24s. per dozen.
PLUMS, Victoria, dwarf, 3-yr., trained, 18s. to 21s. per dozen.
Samples can be had at the above prices.
Stamford and Oakham Nurseries.

JAMES BIRD, of the American Nurseries, Downham, offers the undermentioned, in fine healthy condition—price on application:—
BIRCH, Common, 6 to 8 feet.
CHESTNUT, Horse, 8 to 10 and 12 feet.
ELM, Chichester, 10 to 12 and 14 feet.
OAK, Levant, 8 to 10 and 12 feet.
THORNS, Standard, named.
CHERRIES, Standard, named.
ABIES DOUGLASII, 8 to 10 feet.
CEDRUS ATLANTICA, 1 to 2 feet.
RETINOSPORA PISIFERA, 2 to 3 feet.
THUJA LOBBII, 3 to 4 feet.
BOX, Tree, 1½ to 2 and 2 to 3 feet.
CEDAR, Red, 2 to 3 feet.
CHESTNUT, Horse, 1 to 1½ foot.
,, Spanish, 1 to 1½ foot.
,, ,, 1-yr. seedlings.
ACER NEGUNDO, 1-yr. seedlings.
LAUREL, Common, 1-yr.
VIRGINIAN CREEPER, fine stuff.

To the Trade.

SPECIAL OFFER of SURPLUS STOCK of FOREST and ORNAMENTAL TREES, SHRUBS, &c.; all transplanted, clean, and well grown.
LIMES, fine Standards, 50s. to 60s. per 100.
MOUNTAIN ASH, fine Standards, 30s. per 100.
CHESTNUTS, Horse, fine Standards, 40s. to 50s. per 100.
MAPLE, Norway, fine Standards, 30s. per 100.
OAKS, English, fine Standards, 50s. to 80s. per 100.
THORNS, Paul's Crimson and Double Pink, feathered trees, 30s. per 100.
HORNBEAM, 3 to 4 feet, 20s. per 1000.
LARCH FIR, 1 to 1½ foot, 10s. per 1000.
SNOWBERRIES, 3 to 4 feet, 20s. per 1000. [per 1000.
PRIVET, best Evergreen, 2 to 3 and 3 to 4 feet, 10s. to 15s.
PINES, Austrian, 2 to 3 feet, 40s. per 1000.
SPRUCE FIR, 1 to 1½ foot, 14s. per 1000.
,, ,, 2-yr. bedded, 6s. per 1000.
BLACKTHORN, fine transplanted, 10s. to 15s. per 1000.
WHITETHORN QUICKS, 6s., 8s., and 10s. per 1000.
MAHONIA AQUIFOLIA, 6 to 12 inches, 12s. per 1000; 12 to 18 inches, 18s. per 1000.
LAURELS, 1 to 2 feet, 40s. per 1000.
RED CEDARS, 2 to 3 feet, 20s. per 100.
CEDRUS DEODARA, 1 to 1½ foot, very fine, 50s. per 100; 1½ to 2 feet, very fine, 60s. per 100; 2 to 2½ feet, very fine, 100s. per 100.
LAURELS, Portugal, 1 to 1½ foot, 80s. per 1000; 1½ to 2 feet, 20s. per 100, £7 10s. per 1000.
HANDSWORTH BOX, 9 to 15 inches, 60s. per 1000; 1½ to 2 feet, 15s. per 100.
GOOSEBERRIES, 10s. per 100.
LIST of General Nursery Stock on application to
THOMAS PERKINS, 42, Drapery, Northampton.

To Market Gardeners and Others.

SUTTON AND SONS can offer

Suttons' Ringleader Peas	Veitch's Perfection Peas
Suttons' Racehorse Peas	Scimitar Peas
Little Gem Peas	Bedman's Imperial Peas
Fortyfold Peas	Harrison's Glory Peas

Suttons' Improved Early Champion Peas,
Of true stocks, at moderate prices for large quantities.
Reading, Berks.

To the Trade.—Seed Potatos.

H. AND F. SHARPE are prepared to make Special Offers of SEED POTATOS grown on their own Farms from the finest selected stocks. Their List this season comprises all the English and American varieties worthy of cultivation. The prices will be found very moderate.
Seed-growing Establishment, Wisbech.

DAHLIAS, German, French, and Belgian; NEW GLADIOLI; LILIUM GIGANTEUM. Splendid seed, per 1000, 17*s.*, 500, 10*s.*, 100, 2*s.* 6*d.*, free by post.
Our AUTUMN LIST will be sent, post-free, to all applicants.
ANT. ROOZEN AND SON, Overveen, near Haarlem, Holland.

NOVELTIES.—More beautiful and choice than any that have been offered to the public for many years. Sweet-scented free-blooming hybrid RHODODENDRONS, AZALEAS, &c., which have received First-class Certificates of Merit
DESCRIPTIVE PRICED LIST free on application to ISAAC DAVIES, Nurseryman, Ormskirk, Lancashire.

HARDY AZALEAS for POTTING and FORCING.—Choice Belgic, American, and other hardy Azaleas, together with RHODODENDRON FRAGRANS and AZALEA AMŒNA are offered in nice compact plants, well set with bloom-buds, at 18*s.* and 21*s.* per dozen. Few plants are more acceptable for furnishing Cut Flowers or decorating the Conservatory throughout the early spring.
WM. MAULE AND SONS, The Nurseries, Bristol.

LILIUM AURATUM and all known Lilies, in superb Bulbs, at low prices.
DIOSPYROS KAKI—the grand new hardy Fruit. [&c.
HYPERICUM PATULUM—grand hardy Flowering Shrub;
See our advertisements in *Gardeners' Chronicle*, Nov. 19 and 26, 1875; also our CATALOGUE, free on application.
The NEW PLANT and BULB COMPANY, Lion Walk, Colchester.

To Nurserymen and the Trade.

SEAKALE, extra strong, for forcing, 80*s.* per 1000.
,, seconds, strong, for forcing, 50*s.* per 1000.
,, strong, for planting, 35*s.* per 1000.
ASPARAGUS, extra strong, for forcing, 80*s.* per 1000.
,, strong, for forcing, 50*s.* per 1000.
,, strong, 3-yr., 35*s.* per 1000.
,, 2-yr., 25*s.* per 1000; 1-yr., 15*s.* per 1000.
Also extra strong clump of TARRAGON, 25*s.* per 100.
HENRY PAGE, Walham Green, Fulham, S.W.

Superb Ranunculuses and Anemones.

C. TYSO, FLORIST, &c., Wallingford, offers choice assortments of these flowers, per post.
RANUNCULUSES, 25 fine named varieties, 10*s.*
,, 100 choice mixed, 15*s.* and 20*s.*
DOUBLE ANEMONES, 25 fine sorts, 6*s.*
TREATISE ON RANUNCULUS, 6 stamps.
,, ON ANEMONE, 3 stamps
GERMAN FLOWER SEEDS Asters, Stocks, Zinnias, &c., 1*s.* and 2*s.* 6*d.* per assortment. ANNUALS, 12 choice sorts, post free, 2*s.* 6*d.*
Descriptive ROOT CATALOGUE gratis.

To the Trade.

WM. WOOD AND SON have much pleasure in offering magnificent dwarf-trained trees of the following:—
PEACHES, NECTARINES, and APRICOTS.
The Firm have long been celebrated for the excellence of their trained Fruit Trees. Also very fine Dwarf Maiden Peaches, Nectarines, and Apricots, with well ripened wood.
CATALOGUES on application.
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JAS. GARAWAY AND CO. offer the undermentioned VINES, Fruiting Canes, 48*s.* per dozen.

Black Hamburgh	Grove End Sweetwater
Alicante	Lady Downe's
Champion Muscat	Mill Hill Hamburgh
Esperione	Muscat Hamburgh
Early Malingre	Muscat of Alexandria
Foster's White Seedling	Muscat Muscadine
Frankenthal	Royal Muscadine
Golden Champion	Royal Vineyard
Gros Colman	

JAS. GARAWAY AND CO., Durdham Down Nurseries, Clifton, Bristol.

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JOHN PERKINS AND SON beg to offer the following:—
APPLES, Standards, fine, 50*s.* to 60*s.* per 100.
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APRICOTS, Dwarf-trained, 24*s.* to 30*s.* per dozen.
NECTARINES, Dwarf-trained, 24*s.* to 30*s.* per dozen.
CURRANTS, Black Naples, very fine, 76*s.* per 1000.
,, Victoria or Houghton Castle, 60*s.* per 1000.
GOOSEBERRIES, 10*s.* per 100.
ROSES, Standards, 10*s.* per dozen, 75*s.* per 100.
,, half-Standards, 8*s.* per dozen, 60*s.* per 100.
,, dwarf on Manetti, 25*s.* per 100.
BEECH, transplanted, 2 to 3 feet, 20*s.* per 1000.
HAZEL, transplanted, 2 to 3 feet, 20*s.* per 1000.
HORNBEAM, transplanted, 1½ to 2 feet, 18*s.* per 1000; 2 to 3 feet, 25*s.* per 1000
PRIVET, Evergreen, transplanted, very fine, 1½ to 2 feet, 15*s.* per 1000; 2 to 3 feet, 18*s.* per 1000; 3 to 4 feet, 20*s.* per 1000.
PINUS AUSTRIACA, extra transplanted, stout, and very fine, 2 to 3 feet, 15*s.* per 100.
WHITETHORN or QUICK, 2-yr. transplanted, 8*s.* per 1000; 3-yr. transplanted, 11*s.* per 1000; 4-yr. transplanted 15*s.* per 1000.
BLACKTHORN, extra fine, 1-yr., 1 to 2 feet, 5*s.* per 1000.
,, transplanted, fine, 1½ to 2 feet, 10*s.* per 1000; 2 to 3 feet, 12*s.* per 1000.
52, Market Square, Northampton.

HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,
KNAP HILL NURSERY, WOKING, SURREY.

GLOXINIA CRASSIFOLIA GRANDIFLORA.

Magnificent strain, quite distinct. The leaves, which are very broad and fleshy, recurve so as to almost cover the pot; the flowers are much larger than in the old sorts, and of very brilliant shades of colour, and fine form. By sowing now on a gentle hotbed they may be had in bloom in autumn, and seedling plants always yield much the finest blooms. Erecta and horizontalis, separate or mixed.
Per packet, 1*s.* and 2*s.* 6*d.*, stamps or Post-office Order.
Seed CATALOGUE, sent free by post.
JAMES TYNAN, 68, Great George Street, Liverpool.

NEW SEED CATALOGUE.

WOOD & INGRAM

Beg to announce that their new Descriptive Priced CATALOGUE of GARDEN and AGRICULTURAL SEEDS is now ready, and will be sent free on application. Comparison of prices with those of other Houses is respectfully invited.

SEED WAREHOUSE, HUNTINGDON.

FRANCIS & ARTHUR
DICKSON & SONS.
106 Eastgate St. & The "Upton" Nurseries CHESTER.
Illustrated Catalogue of Vegetable & Flower Seeds,
Post free on Application.
Quality unsurpassed.

Chinese Arbor-vitæ

FRANCIS R. KINGHORN has to offer at a low price a few hundreds of the above, from 3½ to 6 feet high, suitable for screens and hedges, all fine grown and well moted.
Also VENN'S BLACK MUSCAT and DUKE OF BUCCLEUCH VINES.
Prices of each on application.
Sheen Nursery, Richmond, Surrey.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving Size, Price, Popular and Botanical Names, Derivations, Description, Form, Colour, Foliage, Growth, Timber, Use in Arts, Native Country and Size there, Situation, Soil, and other information, with copious Index of their many Synonyms Free by post for six stamps.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

Dwarf trained Peaches and Nectarines, true to name.

Price 24*s.* per dozen, 150*s.* per 100.
THOMAS WARNER can supply fine trees of the following:—
PEACHES—Crimson Galande, Early Alfred, Early Ascot, Early Leopold, Early Louise, Early Rivers, Early Savoy, Early Silver, Rivers' Early York, Goshawk, Lady Palmerston, Golden Rathripe, Marquis of Downshire, Nectarine Peach, Radclyffe, Sea Eagle, Stump the World.
NECTARINES—Albert Victor, Prince of Wales, Rivers' White. The Nurseries, Leicester Abbey.

Maiden Nectarine and Peach Trees.

JAS. GARAWAY AND CO. offer the undermentioned varieties, clean, well-grown stuff, at 60*s.* per 100:—Elruge, Pine-apple, and Pitmaston Orange NECTARINES; Bellegarde, Barrington, Late Admirable, Noblesse, Royal George, and Walburton Admirable PEACHES
JAS. GARAWAY AND CO., Durdham Down Nurseries, Clifton, Bristol.

To the Trade.

DWARF-TRAINED PEARS.—Five to Seven-branched Trees, extra fine, £5 per 100, the following varieties:—Beurré Clairgeau, Brown Beurré, Beurré d'Amanlis, Beurré Diel, Chaumontelle, Citron des Carmes, Fondante d'Automne, Glou Morceau, Jargonelle, Louise Bonne of Jersey, Marie Louise, Williams' Bon Chretien, Winter Nelis.
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CHOICE HYBRID GLADIOLI.
The Gladiolus being a special feature in our business, we respectfully invite Growers of this magnificent Autumn Flower to send for our CATALOGUE of Prize Varieties before making their annual purchases. In it all the best sorts are described, and the prices quoted are very moderate.
ROBERTSON AND GALLOWAY, Seed Merchants and Nurserymen, 157, Ingram Street, Glasgow.

FOR SALE.—20,000 2-yr. Transplanted PEAR, and 10,000 to 15,000 Transplanted CRAB APPLE, fine clean stocks of good size, prices 25*s.* and 30*s.* per 1000; 50,000 to 100,000 strong PRIVET and BLACKTHORN, most suitable for covert. 30,000 Black Italian POPLAR, 2 to 3½ feet; 10,000 strong Mountain ASH, 4 to 6 feet; 20,000 strong PINUS AUSTRIACA, 12 to 18 inches; BIRCH and ALDER, 1½ to 2½ feet; LARCH, of sizes, Prices on application.
JOHN DYKES, Ward's Nurseries, Kilmarnock, N.B.

SNOWFLAKE POTATO—Having grown and imported largely of this splendid new variety, we can offer FINE ENGLISH-GROWN SEED, price 6*d.* per lb.; 6*s.* per peck of 14 lb.; 21*s.* per bushel of 56 lb. Much cheaper by the sack or ton.
FINE IMPORTED TUBERS, same price. Orders of 21*s.* and upwards carriage paid
P. M'Kinlay, Esq., Beckenham, a well-known authority, writing of this Potato in the *Gardeners' Magazine*, Jan. 15 last, says:—"My experience with American varieties has been somewhat extensive, and I find that they generally improve as they become acclimatised. . . . I have no doubt Snowflake will improve in quality, and will become one of the best in cultivation."
DANIELS BROTHERS, Seed Growers, Norwich.

CHOICE SEEDS, &c.—
CUCUMBER, Beauty of St. Albans, the best of the Telegraph section, 1*s.* 6*d.* per packet.
,, Telegraph, true stock, 1*s.* per packet.
,, Duke of Edinburgh (Daniels), 1*s.* per packet.
SOLANUM CAPSICASTRUM, hybrids, from plants selected from the three best stocks in Covent Garden, 6*d.* and 1*s.* per packet.
LOBELIA PUMILA MAGNIFICA, 1*s.* per packet.
CELOSIA PYRAMIDALIS, saved from Mr R S Yates' fine strain, 6*d.* and 1*s.* per packet.
LOBELIA PUMILA MAGNIFICA, seedling plants, 5*s.* per 100; plants from cuttings, 12*s.* 6*d.* per 100.
All orders prepaid.
J. BESTER, White Hart Lane, Tottenham, N.

The New Japan Apple.

PYRUS MAULEI, is now distributing, at 21*s.*, 15*s.*, and 10*s.* 6*d.* each. It is as hardy as the common Apple, blossoms at the same time; the flowers are of a vivid orange-scarlet, fruit of a bright transparent lemon colour, very fragrant, about the size of the Golden Pippin Apple, which is produced in the greatest profusion.
The jam of this season has been tasted by some of the best judges and connoisseurs, and pronounced exquisite, and perhaps superior to any English or foreign fruit.
W. MAULE AND SONS, The Nurseries, Bristol.

TRY HOOPER'S SEEDS this year.

ALL CHOICE NEW POTATOS.

SNOWFLAKE,	EXTRA EARLY VERMONT,
EUREKA,	AND
ALPHA,	BROWNELL'S BEAUTY
LATE ROSE,	

All perfectly true; a fact of importance to Gardeners.
HOOPER AND CO. are prepared to meet all competition in price, as they have enormous Stocks.

HOOPER'S COVENT GARDEN Stores, London, W.C.

FINE AVENUE TREES,
Straight and Handsome.
CHESTNUTS, Horse, 10 to 12 feet.
CHICHESTER ELMS, 10 to 12 feet.
LIMES, 10 to 12 feet.
NORWAY MAPLE, 10 to 12 feet.
OAKS, Turkey or Levant, 9 to 10 feet.
SYCAMORE, 10 to 12 and 12 to 15 feet, very straight.
ROBERT F. DARBY, The Nurseries, Cirencester.

EWING AND CO.'S TRADE LIST, also TRADE and RETAIL LISTS of NEW ROSES for 1876, CLEMATIS, &c., are now ready. 10,000 GOOSEBERRIES, 6000 NUTS, strong, fine, and cheap; also ELMS, LIMES, CHESTNUTS, and other TREES for AVENUES, 9 to 20 feet, extra fine. LADY HENNIKER APPLE, 3s. 6d. and 7s. 6d. each. EWING'S MILDEW COMPOSITION, 1s. 6d. and 3s. per bottle.
Royal Norfolk Nurseries, EATON, near Norwich.

Novelties in Flower Seeds (Own Growth).

MARTIN GRASHOFF, SEED GROWER AND MERCHANT, Quedlinburg, Germany, has to offer as follows:—
RHODANTHE MANGLESII FLORE PLENO (Prince Bismarck). First quality, 10 grammes, 50s.; 1 gramme, 6s.; 100 seeds, 1s. 9d. Second quality, 20 grammes, 50s.; 1 gramme, 3s. 4d.; 100 seeds, 9d.
RHODANTHE MINOR COMPACTA MULTIFLORA, 20 grammes, 50s.; 1 gramme, 3s. 4d.; 100 seeds, 8d.
M. G.'s Trade CATALOGUE of Agricultural, Vegetable, and Flower Seeds post-free on application.

Genuine Seeds.

JOHN AND CHARLES LEE, Seedsmen to the Queen, invite attention to their new and extensive CATALOGUE of SEEDS for 1876. This Catalogue has been prepared with their usual care, and contains every novelty, whether home-grown or foreign, with the most minute and useful descriptions of both Vegetable and Flower Seeds. The prices of every article are the very lowest, considering the first-rate quality of the various stocks offered. The long standing of the house of LEE (125 years) is a sure guarantee of the excellence of their seeds and the soundness of their trading. Catalogues may be had post-free on application.
Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

DAVID LLOYD AND CO. (LIMITED).
CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.
Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following:—
J. T. RUBERY, 8B, Rumford Place, Liverpool.
SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
R. AND J. TAYLOR, 17, Vachel Road, Reading.
AGENTS WANTED.

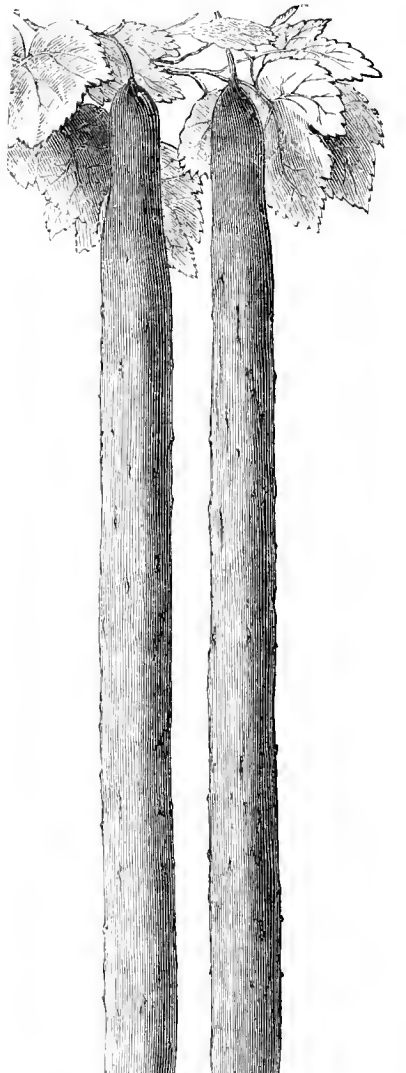
MARTIN'S LONG GUN CUCUMBER.—Some quarter of a century ago Mr. Arthur, then traveller for a large firm of Nurserymen in Edinburgh, found this invaluable Cucumber being grown by a Gamekeeper named Martin, in the East Lothians; Mr. Arthur at once recognised its superiority over all other varieties, which character it has since maintained. Amongst the very few who have had the fortune to obtain the original stock, Mr. Arthur gave to our Mr. John Reid a few seeds under the very appropriate name of MARTIN'S LONG GUN. The original name of Martin's has been replaced by a firm who received a few seeds as a gift from Mr. John Reid, who has grown the original stock for over 25 years, and during his extensive experience he has failed to meet with any variety, including the many novelties, equal in flavour or such abundant croppers. It grows from 20 to 24 inches, and we confidently offer it as one of the very best grown. In sealed packets at 2s. 6d. each.
REID AND CO., Appley Bridge Nursery, Wigan.

CERASUS LAURO-CERASUS CAMELLIÆFOLIA (the Camellia-leaved Laurel).—This extraordinary and elegant Laurel was raised by Mr. Wood, of Woodbridge, in Suffolk, on whose behalf we are now offering it for the first time to the public. The leaves are light green, like the common Laurel, but differ from it in shape in being elegantly curled, like a Camellia leaf, or more closely resembling in form the beautiful Croton volutum.
The effect of the plant, grown as a pyramid and well pruned, is peculiarly striking, and if planted close as an edging plant, and pinched well back, it produces a very neat and pleasing appearance.
We propose to distribute this well-known variety at the following low prices, being desirous of seeing it largely used, as it deserves to be, for the purposes above-mentioned:—Per plant, 5s.; per dozen, 42s. Special offer to the Trade.
J. AND C. LEE, Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

Bargains.

H. BLANDFORD, The Dorset Nurseries, Blandford, offers the following trees, which are exceedingly well grown, with plenty of roots and worth nearly double the money:—
CHERRIES, Morello, handsome fruiting trees, pyramids, 6 feet high, 25s. per dozen.
VINES, good planting canes of the following varieties, warranted true to name, viz.:—Alicante, Bowood Muscat, Black Hamburgh, Buckland Sweetwater, Foster's Seedling, Gros Colman, Muscat of Alexandria, and Trebbiano, 3s. each, 30s. per dozen.
ROSE, Dwarf, very fine, leading varieties only, 50s. per 100.
ASPARAGUS ROOTS, 4-yr. old, 3s. 6d. per 100, 30s. per 1000.
ARAUCARIA IMBRICATA, 2 feet, fine, 30s. per dozen.
ARBOR-VITÆ (American), 7 to 8 feet, 21s. per dozen.
CUPRESSUS LAWSONIANA, 6 to 7 feet, specimens, 25s. per dozen.
CEDRUS DEODARA, 1½ foot, transplanted autumn, 1874, 12s. per dozen, 90s. per 100.
HIBISCUS SYRIACUS, 4 to 5 feet, bushy, 9s. per dozen.
THUJA AUREA, 1½ foot, well furnished, 25s. per dozen.
,, ELEGANTISSIMA, 1½ foot, 25s. per dozen.
HORNBEAM, 5, 6, and 7 feet, 10s., 15s., and 25s. per 100.
CHESTNUT, Horse, fine for avenues, 8 to 10 ft., 80s. per 100.
OAK, English, quartered, 7 to 8 feet, 50s. per 100.
SPRUCE, 1½ foot, 45s. per 1000.
WHITETHORN (Quick), 4-yr. transplanted, 2½ to 3 feet, extra stout, clean, and well rooted, 20s. to 25s. per 1000.
Special offer will be made to the Trade.

DANIELS BROS.'
"DUKE OF EDINBURGH"
CUCUMBER.
"The finest in Cultivation."



DANIELS BROS.'
"Duke of Edinburgh" Cucumber.
Per Packet, 2s. 6d.

A magnificent variety, of a fine robust constitution, its fruit growing rapidly to the length of 30 to 36 inches, being at the same time of the most beautiful proportions and splendid quality. Immensely prolific, and unrivalled for exhibition or general use.

From ALBERT CHANCELLOR, Esq., *The Retreat, Richmond, S.W., January 2, 1875.*
"I grew your 'Duke of Edinburgh' Cucumber last year, some of the fruit measuring nearly 3 feet in length, perfectly straight, and of most delicious flavour. It is the finest Cucumber I have ever seen."

DANIELS BROS
Seed Growers
NORWICH.

A BARGAIN is offered in a lot of very extra strong BLACK HAMBURGH VINES, which must, on account of alterations, be moved out of a border in which they were planted to be fruited this year. They have never borne a berry, and would ripen 20 lb. to 30 lb. of fruit well. Strong Canes, with splendid healthy roots, 10s. 6d. each.
L. WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

AVENUE TREES.—LIME, ELM, CHESTNUT, and SYCAMORE.—LIME, red-twigged, and macrophylla, 8 to 10 feet; ELM, Giant, or Huntingdon, 10 to 15 feet; do., English, 10 to 12 feet; do., Weeping Scampston, stems 6 to 15 feet; CHESTNUT, Horse, 8 to 10 feet; SYCAMORE, 8 to 12 feet; POPLAR, Ontario and Lombardy, 8 to 10 feet, and other sorts and sizes 6 to 16 feet; all fine straight trees, frequently transplanted, with fine roots, very cheap. EWING AND CO., EATON, Norwich.

STANDARD PORTUGAL LAURELS.—Owing to alterations in a Nobleman's garden, twelve splendid specimens of the above for Sale; they have been most carefully trained for the last twenty-four years in a pyramidal form; they are about 8 feet high and 7 feet in diameter at the base. They are in vigorous health, and, as specimens, cannot be surpassed. They were prepared last season for moving. Apply by letter to
Mr. VEITCH, Royal Exotic Nursery, Chelsea, London, S.W.

Bulbous or Tuberous Begonia Seed.

L. PAILLET, NURSERYMAN, Chatenay, near Paris, offers for the present season, from his own growth, and cropped on the very best varieties known, seeds of the said BEGONIAS at the following rates:—Per packet containing 1 gramme, 6s.; per packet containing 5 grammes, £1 5s.
Seeds of CLEMATIS, cropped on the best varieties known, such as Helena, Sophia, Jackmanni, lanuginosa, Lady Bovell, magnifica, and others:—Per packet containing 30 grammes, 8s.; per packet containing 100 grammes, £1 4s. (One gramme represents 1-28th of an ounce.) CLEMATIS from Seed, fine mixed varieties of all kinds, 3 to 4 years old, £2 per 100.
N.B.—Orders may be addressed directly to L. PAILLET, or his Agents, Messrs. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C., where CATALOGUE and List may be had on application.

To the Trade and Others.

SURPLUS STOCK, CHEAP.

VINES, fruiting and planting; dwarf-trained PEACHES, NECTARINES, PLUMS, and CHERRIES; BLACK CURRANTS; LAURELS, Common, 3 to 6 feet; PRIVET, 3 to 5 feet; CHESTNUTS, Horse, 6 to 10 feet; Scarlet do., 6 to 8 feet; ELMS, 6 to 8 feet; MAPLES, Common, Norway, and Scarlet, 6 to 9 feet; POPLARS, Abele, Black Italian, and Balsam, 6 to 10 feet; Lombardy do., 6 to 12 feet.
The above are all clean and well grown. Price on application to
B. MALLER, The Nurseries, Lee and Lewisham, S.E.

JOSEPH SMITH, JUN., has to offer the following, at per 1000:—
ALDER, 1 to 1½ foot, 10s.; 1½ to 2 feet, 12s.; 2 to 3 feet, 20s.; 3 to 4 feet, 28s. ASH, Mountain, 1½ to 2 feet, 15s.; 2 to 3 feet, 20s.; 3 to 4 feet, 25s.; 6 to 8 feet, 75s.; 8 to 10 feet, 110s.; 10 to 12 feet, 140s. BEECH, 1 to 1½ foot, 15s.; 1½ to 2 feet, 18s. BIRCH, 1 to 1½ foot, 15s.; 1½ to 2 feet, 18s. ELM, 1½ to 2 feet, 12s.; 5 to 8 feet, 45s. SPRUCE, 1½ to 2½ feet, 25s.; 2½ to 4 feet, 35s.; Scotch, 3 to 4 feet, 30s.; 3½ to 4½ feet, 35s. LARCH, 1 to 1½ foot, 15s. LIMES, 2 to 2½ feet, 45s.; 2 to 3 feet, 55s.; 3 to 4 feet, 75s.; 4 to 5 feet, 95s. MAPLE, Norway, 4 to 5 feet, 40s.; 5 to 6 feet, 55s.; 6 to 8 feet, 75s. OAKS, 2 to 3½ feet, 28s.; 3½ to 5 feet, 40s.; 5 to 8 feet, 60s. PINUS AUSTRIACA, 1½ to 2 feet, 20s.; 2 to 2½ feet, 25s.; 2½ to 3½ feet, 30s.; 3 to 4 feet, 40s. POPLAR, Black Italian, 2 to 3 feet, 20s.; Ontario, 2 to 3 feet, 20s.; 3 to 4 feet, 35s.; 6 to 8 feet, 90s. PRIVET, Evergreen, 9 to 15 inches, 8s.; 1 to 1½ foot, 10s.; 1½ to 2 feet, 14s.; 2 to 2½ feet, 15s.; 2 to 3 feet, 17s. QUICK, 2-yr., transplanted, 8s.; 3-yr., 10s.; 4-yr., 12s. SYCAMORE, 4 to 6 feet, 30s.; 5 to 7 feet, 35s. WILLOWS, of sorts. LAUREL, Common, 9 to 12 inches, 25s.; 1 to 1½ foot, 35s. COTONEASTER MICROPHYLLA, 1 to 1½ foot, 70s.; 1½ to 2 feet, 90s.; do. SIMONDSII, 2 to 3 feet, 50s.; 3 to 4 feet, 80s. RHODODENDRONS, &c.
CATALOGUE of General Stock sent on application.
Moor Edge Nurseries, Tansley, near Matlock, Derbyshire

PARKER AND BUSH (late J. NELSON), St. Michael's Hill Nursery, Bristol, have to offer the following:—
APPLES, Pyramid, of sorts, very strong, 21s. per dozen.
BEECH, Common, good transplanted, 3 to 4 ft., 40s. per 1000.
BIRCH, 3 to 4 feet, transplanted, 30s. per 1000; 4 to 5 feet, do., 60s. per 1000.
BAYS, Sweet, transplanted, bushy, 2 to 3 feet, 50s. per 100.
HOLLIES, Green, transplanted, 2 feet, 50s. per 100.
LAURELS, Portugal, bushy, 3 feet, 12s. per dozen.
,, Common, bushy to the ground, 3 to 4 feet, 20s. per 100.
OAKS, Evergreen, in pots, 2 to 3 feet, 75s. per 100.
PRIVET, Common, 3 to 4 feet, 30s. per 1000.
PEARS, Pyramid, in best sorts, very strong, 21s. per dozen.
SCOTCH FIRS, good transplanted, 2 to 3 feet, 20s. per 1000.
THORNS, Standard, Double Pink, 5 to 6 feet, 100s. per 100.
,, ,, Paul's Double Scarlet, 5 to 6 feet, 100s. per 100.
,, Quick, transplanted, 10s., 15s., and 20s. per 1000.
,, ,, transplanted, extra strong, 35s. per 1000.
YEWS, English, 3 to 4 feet, feathered to the ground, perfect pyramids, 100s. per 100.
ROSES, Dwarf, in sorts, strong, 30s. per 100.
VINES, Venn's Black Muscat, strong short-jointed canes, 6 to 7 feet long, 15s. each.
,, Black Hamburgh, strong planting canes, 5s. each.

AVENUE TREES.

	Girth 4 ft. from ground.
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10 inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8 ,,
MAPLES, Norway, 12 to 16 feet high ..	5 to 8 ,,
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10 ,,
,, Scarlet, 10 to 14 feet high	8 to 10 ,,
,, Double, 10 to 14 feet high	8 to 10 ,,
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10 ,,
ELMS, 15 to 18 feet	7 to 9 ,,

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.
Knap Hill Nursery, Woking, Surrey.

WORCESTER PEARMAIN APPLE.

Awarded a First-class Certificate by the Royal Horticultural Society, October 6, 1875.

Fruit 2¾ inches wide, and same in height, conical; skin smooth, brilliant red, with minute fawn-coloured dots; flesh very tender, crisp, juicy, and sweet, with a very pleasant flavour, perhaps the most valuable of all for market. The tree is as productive as Lord Suffield Apple, and one of the handsomest fruits in cultivation. Ripe end of August, and will keep till Christmas.

Maiden Trees, 10s. 6d. each; Pyramid or Trained Trees, 21s. each. Coloured Plates, 6d. each.

RED HAWTHORNDEN APPLE.—Dr. Hogg describes this as large, oblate, and angular; skin smooth, greenish yellow, with a red blush next the sun; flesh white, tender and juicy, with a sprightly and agreeable acidity. A very early and valuable culinary Apple; ripe August and September. Maiden trees, 7s. 6d. each; Pyramid or trained trees, 10s. 6d.

YORKSHIRE BEAUTY APPLE.—Dr. Hogg, in his *Manual*, says this fruit is 3½ inches wide and 3 inches high, roundish, flattened, and angular; skin bright yellow, with a bright red blush on the sunny side; flesh tender and juicy, with an agreeable acidity. A first-rate culinary Apple for August and September; the great size and excellent quality ought to commend it as a good orchard fruit for the market. Maiden trees, 5s. each; Pyramid or trained trees, 7s. 6d.

NEW GOLDEN LABURNUM.—Unquestionably the finest hardy golden-leaved tree known, of immense value for park and garden scenery; it will take a foremost position among pictorial and garden trees; the foliage is a brighter golden-yellow than the flower of the ordinary Laburnum. First-class Certificate awarded by the Royal Horticultural Society, August 4, 1875. Price 10s. 6d. each; Standard and extra strong trees, 21s. Coloured plates, 6d. each.

OTHERA JAPONICA.—A new and beautiful evergreen shrub. One of the most distinguished Japanese travellers says this is perhaps the prettiest evergreen they have in Japan; it grows about 20 feet high, has dark green leaves and a profusion of bright red fruit; it is very effective and perfectly hardy. Price 10s. 6d. each; extra strong, 21s.

TWELVE ACRES OF ROSES,

Standards and Dwarfs, all the popular sorts; 80,000 choicest Tea-scented and Noisette Roses, in pots. Extra strong Hybrid Perpetual Roses, in pots for immediate forcing.

Climbing Roses in great variety. *See Descriptive Price List.*

FIFTY ACRES OF FRUIT TREES.

Standard and Dwarf-trained PEACHES, NECTARINES, APRICOTS, PLUMS, CHERRIES, PEARS and APPLES, very fine trees for walls.

Standard, Pyramid, Dwarf, Bush, and Cordon APPLES, PEARS, PLUMS, and CHERRIES.

VINES, Planting Canes, 3s. 6d. to 5s. each; Extra Strong Fruiting Canes, 7s. 6d. to 10s. 6d. each.

All the above of superior quality, perfect in form, roots, and health, and true to name. See Descriptive Price List.

COLLECTION OF TWELVE STANDARD ORNAMENTAL TREES, THE MOST BEAUTIFUL FOR GROUPING, 24s., viz.:—Almond, Acer Negundo variegata, Double Scarlet Thorn, Elm elegantissima, Purple Beech, Silver Variegated Cornus, Silver-leaved Poplar, Scarlet Horse Chestnut, Scarlet Mountain Ash, Tulip Tree, Variegated Mahaleb, Weeping Silver Birch.

COLLECTION OF TWELVE OF THE MOST DISTINCT AND BEAUTIFUL HARDY CREEPERS and WALL SHRUBS for 15s., viz.:—Akebia quinata, Berberidopsis corallina, Bignonia grandiflora, Clematis Jackmanni, Ceanothus Veitchii, Cydonia japonica, Escallonia macrantha, Jasminum revolutum, Lonicera aureo-reticulata, Magnolia grandiflora, Passiflora Colvillii, Wistaria sinensis.

COLLECTION OF TWELVE MOST EFFECTIVE AND ORNAMENTAL IVIES, the most useful of all Evergreens for Walls, Trellises, &c., 12s.

DECIDUOUS FLOWERING SHRUBS in Fifty beautiful varieties, 30s. per 100.

BEAUTIFUL HERBACEOUS AND ALPINE FLOWERING PLANTS, give no trouble, and are permanent in adorning Garden Beds, Borders, and Rockeries; 30s. per 100 varieties.

JUNIPERUS CHINENSIS.—One of the hardiest and most ornamental Shrubs in cultivation, and especially valuable to the landscape gardener. In spring it is quite golden with its numerous flowers, which, when shaken with the wind, give off a cloud of yellow dust; and if the plant be kept closely pruned, the young growth becomes so luxuriant and leafy that it gives an entirely different but equally pleasing effect in its silvery tinge and rigid outline. When left to its own growth it forms a noble green pillar, highly suitable to stand in pairs by a garden walk. Eight to 9 feet, 10s. each; £4 4s. per dozen.

PICEA PINSAPO.—A very handsome, densely branched tree. The branches are very thickly placed in whorls and spread horizontally, thus giving a singularly beautiful appearance. It is one of the most distinct and desirable trees for ornamental planting, especially for a lawn. Its perfect symmetry of form is so striking that it should have a place in every collection. Eight to 10 feet, 25s. each; £12 per dozen.

ABIES DOUGLASII.—This, the most noble of Evergreen Firs, is of rapid growth, hardy, produces valuable Timber, close, heavy, and free from knots, of the colour of Yew wood. It is a native of California, where it grows upwards of 300 feet high, with a trunk 10 feet through. The flagstaff at Kew is of this tree, and was, when growing, 309 feet high. There is at Dropmore (Bucks) a specimen measuring at the present time 100 feet high, and 90 feet through the branches, with a trunk 9 feet in circumference at 4 feet above the base. It was raised from seed sown by Mr. Frost, the present gardener, in 1828, and is now a model of beauty. 12 to 15 feet, 12s. 6d. each, £5 per doz.

THE SILVER CEDAR of MOUNT ATLAS.—Now is the time to plant this eminently beautiful tree, unsurpassed for majestic grace and picturesque grandeur even by the Cedar of Lebanon, which it much resembles; and many consider it a variety, but its leaf is more silvery, it grows twice as fast, and its timber is very valuable. Noble trees, 10 to 12 feet, 25s. each, £12 per dozen.

AVENUE AND ORNAMENTAL TREES,

For planting singly or in groups, of all forms and sizes; with many other large Evergreens for single specimens or screens.

RICHARD SMITH,

NURSERYMAN and SEED MERCHANT, WORCESTER.

JOHN CATTELL

BEGS TO ANNOUNCE THAT HIS

ILLUSTRATED CATALOGUE

OF

KITCHEN GARDEN AND FLOWER SEEDS,

Including a Choice Selection of the latest Novelties for 1876,

Is now ready, and will be forwarded gratis and post-free on application.

NURSERY and SEED ESTABLISHMENT,

WESTERHAM, KENT.

RHODODENDRONS.

FINE NAMED LEADING KINDS, 1½ to 3½ feet, from £7 10s. to £10 10s. per 100.

HYBRID SEEDLINGS, leading kinds, 1½ to 3½ feet, from 50s. to 75s. per 100.

ANDROMEDA FLORIBUNDA, 1 to 2 feet, from 50s. to 60s. per 100.

KALMIA LATIFOLIA, 1 to 2 feet, from 50s. to 60s. per 100;

AZALEA PONTICA, 1 to 2 feet, from 60s. to 75s. per 100;

All the above are very fine bushy, well grown plants, and are offered very cheap to effect a clearance.

CHARLES NOBLE, BAGSHOT.

DICK RADCLYFFE & CO.,

SEED MERCHANTS,

GARDEN FURNISHERS

And Horticultural Decorators.

PRIZE MEDAL SEEDS.

Complete Collections of Vegetable Seeds.

No. 1.—Suitable for a very Large Garden	£3 3 0
No. 2.—Suitable for a Large Garden	2 2 0
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No. 4.—Suitable for a Small Garden	0 10 6

Carriage free as per terms of Catalogue.

Choice Collections of Flower Seeds.

Containing only popular kinds of easy growth, which will make a pretty and effective show during the summer months. 5s., 10s. 6d., 21s., 31s. 6d. and 42s. each.

All Flower Seeds sent post-free

For full Detailed List of Collections, see D. R. & Co.'s Illustrated Flower, Vegetable, Agricultural and Garden Requisite CATALOGUE, sent gratis and post free on application to

DICK RADCLYFFE & CO.,

128 and 129, HIGH HOLBORN, LONDON.

THE KNAP HILL CYPRESS,

Cupressus Lawsoniana erecta viridis.

ANTHONY WATERER

Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices:—

3 feet high, 2½ feet in circumference, 30s. per doz.
4 feet high, 3 to 4 feet do., 42s. to 60s. per doz.
5 feet high, 4, 5 and 6 ft. do., 10s. 6d., 15s. to 21s. each.
6 and 7 feet high, 6 to 7 and 8 ft. do., 21s. to 31s. 6d. each.

No cuttings have been taken from the plants here referred to, which are simply perfect in growth and splendidly rooted.

KNAP HILL NURSERY, WOKING, SURREY.

Vegetable & Flower Seeds
Seed Potatos, Garden Tools &c.
Superior quality; Carriage free
Descriptive Priced list post free,
James Dickson & Sons
"Newton" Nurseries and
108, Eastgate Street,
Chester.

ROYAL HORTICULTURAL SOCIETY.—SPECIAL PRIZES

FOR 1876.

FOR FULL PARTICULARS SEE SCHEDULE OF The Royal Horticultural Society.

NEARLY
EIGHTY GUINEAS
AGAIN OFFERED IN CASH PRIZES BY

Carter's

THE QUEEN'S SEEDSMEN,
TO BE COMPETED FOR AT THE
MEETINGS of the ROYAL HORTICULTURAL SOCIETY.

FOR 1876.

The most Important Money Prizes.

Messrs. CARTER were the original promoters of this class of Prizes, and the success that has attended previous exhibitions has induced them to repeat the liberal schedule announced in the Society's Programme and Carter's "Vade Mecum" for the coming season.

CARTER'S COMMANDER-IN-CHIEF PEA.

The best New Pea.

CARTER'S
COMMANDER-IN-CHIEF.

A very fine green wrinkled Marrow, of exquisite flavour,

WITH MANY PODS CONTAINING TEN PEAS IN A POD.

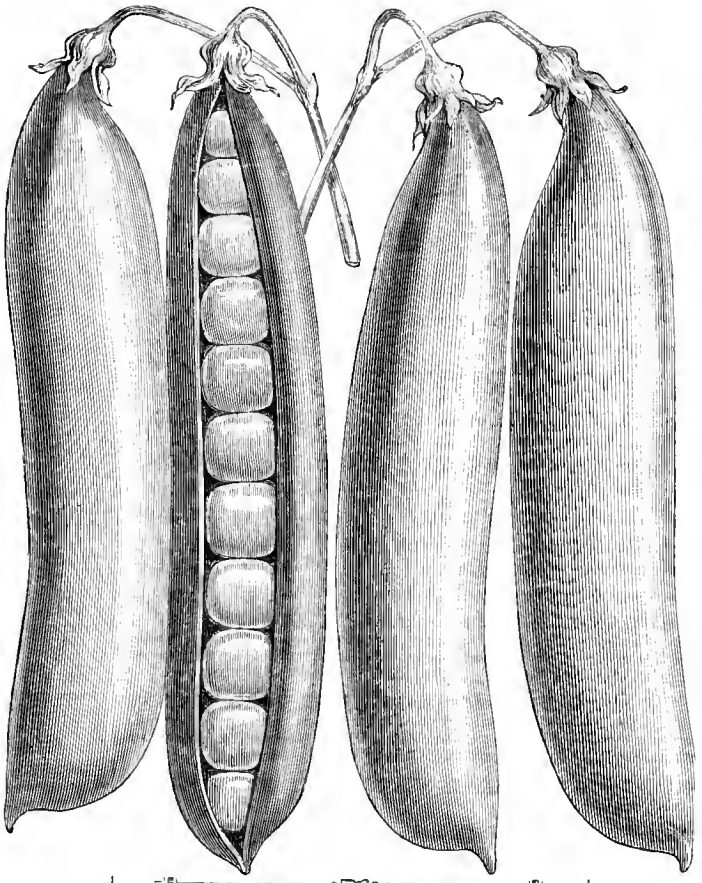
Height, 4 feet.

During the past season the long pods of this variety, carrying a beautiful bloom, were to be observed in most of the collections of Peas which gained the Prizes offered by ourselves and others at the various Horticultural Shows.

Mr. GILBERT, the well-known Head Gardener at Burghley, writes as follows:—"'Commander-in-Chief' and 'G. F. Wilson' are both Peas of great excellence."

"'Commander-in-Chief,' a very prolific Pea, having large, well-filled pods of large Peas, FLAVOUR EXCELLENT."—Mr. WILLIAM PATERSON, *Head Gardener to H. M. the Queen, Balmoral Castle.*

In Sealed Packets, per quart, 3s. 6d.; per pint, 2s.



CARTER'S
Heartwell Early Marrow Cabbage.

(*See Schedule of the Royal Horticultural Society.*)

A distinct and excellent variety, indispensable as an Early Cabbage both for the gentleman's garden and for marketing purposes. The hearts are extremely firm, weighing from 4 to 6 lb., with scarcely any loose outside leaves, the flavour particularly mild and melting.

Price, per packet, 1s. 6d.

CARTER'S
Green Gage Tomato.

(*See Schedule of the Royal Horticultural Society.*)

Awarded a First-class Certificate by the Royal Horticultural Society, October 7, 1874.

During the visit of H.R.H. the Prince Christian to our large display of Agricultural Roots and Vegetables at the Smithfield Show, His Royal Highness was pleased to express the most unqualified approval, both of himself and Royal guests, of the exquisite flavour and quality of Carter's Green Gage Tomato.

Price, per packet, 2s. 6d.

Caution.—*All Novelties sent out by us for the first time will bear our Registered Trade Mark, thus—*

PRIZE MEDAL SEEDS
REGISTERED TRADE MARK

Hardy's New Double Clarkias,
PURPLE KING & SALMON QUEEN.

See p. 484, "Journal of Horticulture."

Awarded Two First-class Certificates by the Royal Horticultural Society, July 7, 1875.

In form, and firm bold double habit, they far surpass any previous introductions of this popular flower, whilst the richness and novel beauty of colouring they possess stamp them as a welcome addition to our hardy summer flowers.

Price, per packet, containing about 200 seeds of each variety, 2s. 6d.

CAUTION.—*We are Sole Wholesale Agents for these Novelties, and each packet will be sealed* "H. J. HARDY, Stour Valley," *and bear also our Registered Trade Mark.*

Carter's

Post-free 1s. Gratis to Purchasers.

THE QUEEN'S SEEDSMEN
CARTER'S
VADE MECUM
237 & 238
HIGH HOLBORN.
LONDON
1876

Post-free 1s. Gratis to Purchasers.

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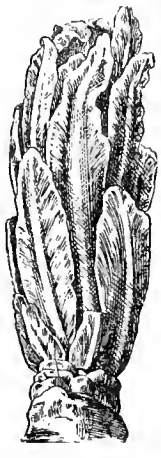

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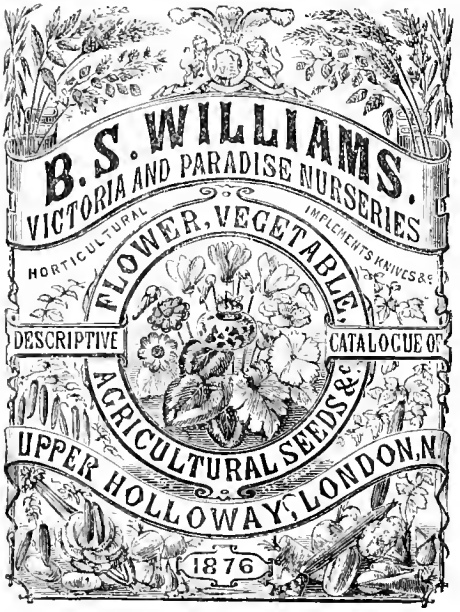

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SATURDAY, JANUARY 29, 1876.

PLANT NAMES:

HOW TO PRONOUNCE THEM.

ONE of the likeliest projects to do good in England during the next year or two, or as long as the fancy may last, is the new educational pastime called the Spelling Bee. The mode of proceeding at a Bee is this:—People who believe that they can spell any ordinary word correctly, are invited to compete with others who are equally self-confident. Lists of words, gradually increasing in supposed difficulty, are submitted to the skill of the several candidates, who one by one are seen retiring discomfited from the arena, and at last the clever half dozen who triumph over the remainder receive prizes, and depart joyously. At a great public Spelling Bee held in the Manchester Free Trade Hall a few evenings ago, there were 300 competitors at the start, but the honours were carried off by only nine or ten. This seems to indicate that there are more things than the heart of man which are deceitful above all things, and that among them has to be reckoned too earnest a self-reliance upon personal power to spell the elements of one's mother-tongue. That the institution of the Spelling Bee, if faithfully carried out, will tend to rectify the popular impression may be considered certain, at the same time that it will do good by inducing a more exact attention to the subject of spelling and, collaterally, to that of distinct and accurate pronunciation, which is so often blemished by the use of provincialisms. It is important, however, to remember that, after all, there is not the slightest merit in an educated person's spelling correctly. Orthography is to a fixed or written language simply what a clean face is to good manners, a thing looked for as a matter of course in any one pretending to have been decently brought up. It possesses not the slightest claim to praise. Like proper apparel, it does not even demand acknowledgment; and the giving of a reward to the victors at a Spelling Bee is on a par, and nothing more, with commending a man for being respectable. He has no business to be anything else. How far it would be just or fair to pass a verdict of uneducated upon those who fail to spell correctly, we leave for others to determine. The point involves many considerations with which we here have nothing to do. Among them is that of constitutional infirmity, for there appear to be people who are naturally incapable of learning to spell, just as there are people who cannot learn how to draw or to play the piano.

Looking round at the prodigious mass of botanical and horticultural nomenclature which envelopes us, we are tempted to ask,—Might not those who employ it devote an evening now and then, with profit, to a Pronouncing Bee? Give a hundred Greek and Latin generic names, taken at haphazard from Lindley, or Bentham, or De Candolle, or any one else, or specific names either, to a score of botanists and upper-class gardeners, and how many out of the hundred would be pronounced unimpeachably, or even uniformly? Quite as small a proportion of the competitors would win at all points, we fancy, as in the spelling matches. The failures would not carry the same proportionate amount of discredit to the beaten, or of honour to the conquerors, as attaches to the good and bad spelling. Orthography is chiefly a matter of careful observation with the eye, and of practice with the pen, and is often found in its highest perfection among the compositors in a good printing-office, who make no pretension to be anything more. The correct pronunciation of Greek and Latin natural history names, including botanical ones, belongs, on the other hand, to a far more delicate sphere of knowledge. It pertains to the higher platform of aural civilisation, the region of the invisible and the intangible—that one of which the protective vestal virgins are music and refined speech. A formula of printed letters needs only mechanical memory. A sound wafts away, and, if unfamiliar, is recalled only with difficulty. It may be symbolised upon paper by means of accentual marks; but there are thousands of cases where the best mode of accentuation still leaves a lingering sense of insecurity. A sound is never perfectly learned except from the lips of one who has received it aforetime from an earlier teacher, and who now—welcome friend—by a similar inspiration, makes for ourselves in turn the inanimate alive. All things considered, it is wonderful as well as very agreeable to observe how accurately our English gardeners pronounce their Greek and Latin, seeing that they have so few opportunities of hearing how a scholar deals with it. To expect them to be proficient, would, of course, be most unreasonable as well as unkind, the more particularly so, since a bad example is often set them by those who ought to know better. How common it is to hear botanists, men presumably of good education, say Tragop'ogon instead of Tragopo'gon, and Jasi'one instead of Jasio'ne, and to hear Lichen pronounced as Litch-en instead of Ly-ken. Errors such as these are unpardonable; they compare with the indubitable bad spelling, and in the case of our supposed Pronouncing Bee would condemn on the instant. To see why they are errors requires only a schoolboy's knowledge of Greek,—little more, indeed, than a knowledge of the Greek alphabet, and the possession of the most ordinary lexicon.

In approaching names of this character, people often jump to conclusions too hastily. It is supposed, for example, that because Polyg'onum and Polyg'ala are right, therefore we ought to say Polyp'ogon, which is wrong. The impropriety of Polyp'ogon is perceived, as in the former instance, by simply consulting a Greek lexicon, one of the easiest things in the world to accomplish. No one needs to be frightened by the word Greek. It is an illusion and a superstition to suppose that in order to pronounce Greek names correctly a man must constitute himself a Greek scholar, be able to bathe in the *Iliad*, listen to the lute of Pindar or smell the Cinnamon-sedge in Theocritus. Greek with a view to enjoying its literature, and Greek with a view to the correct pronunciation of botanical names, are things by no means identical, and are not to be confounded. Every man and every youth who loves his plants, and desires to be correct in his names, on first principles, may acquire Greek enough for the purpose as readily as he learned his simple arithmetic. A class of names very frequently mispronounced comprises those which have "phyllum" for their second member; Chæroph'yllum, for instance, instead of Chærophyllum. The most singular instance of this occurs with some medical men, who are supposed to have had some sort of classical education, and to have passed a preliminary examination in Latin and Greek, and, moreover, as they write their prescriptions in Latin, are presumed to be acquainted with classical usages, but who, nevertheless, persist in saying Podoph'yllum instead of Podophyllum—an abuse of the word which is perfectly shocking. *G.*

(To be continued.)

New Garden Plants.

ERYTHRONIUM REVOLUTUM, *Smith.**

In a broad sense this is doubtless what I have already considered it, a variety of Erythronium grandiflorum; but in habit and in the colour of the flower the difference is so great from the typical form which is grown in England (*Bot. Reg.*, tab. 1786) that it is an entirely different individuality from a gardening point of view. The specimen from which the present description is made was sent to me last April from Max Leichtlin, Esq., of Baden-Baden, who received it from the neighbourhood of Colfax, in California. I have only seen before a single dried specimen, collected by the celebrated traveller, Menzies, at Nootka Sound. At first sight it resembles considerably the well-known Erythronium dens canis of Europe; in fact, all the five or six Erythronia are just like one another in general habit. But it has no blotching on the leaves, and on closer inspection both perianth and stamens are found to differ materially.

Corm oblong, about a couple of inches below the soil. Leaves fleshy, glabrous, glaucous, lanceolate, 3—4 inches long, under an inch broad, narrowed gradually to both ends, not at all spotted. Scape glabrous, glaucous, one-flowered, 5—6 inches long. Perianth pendulous, purple, 15—16 lines deep, the segments lanceolate acuminate, 2 lines broad, with a blotch of bright yellow above the base. Filaments under half an inch long, rather flattened, all without any appendage, white at the base, bright yellow in the upper half; anthers pale yellow, oblong, 2 lines long. Ovary obovoid, ⅓ inch deep, with a distinct neck at the base; style as long as the ovary, geniculate, with three short cusps at the tip. *J. G. Baker.*

CYPELLA BRACHYPUS, *Baker, n. sp.*†

This is a very fine Cypella, closely resembling C. Northiana in general appearance, but differing in the colour of the flowers and various minor characters of specific value from a botanical point of view. I saw it first in 1871 in the collection of Mr. Wilson Saunders, who made at the time an excellent coloured sketch, which was intended for publication in the *Refugium*. Mr. Saunders received it from Trinidad. I saw it again in the Kew collection in flower in August of the present year. It is a very fine plant, and well worthy of attention, but of course it requires a stove heat, and, as in the other species, the flowers, which are produced one after the other in succession from the same cluster, do not last long.

Rhizome erect, nearly an inch thick. Leaves 6—8, in a distichous rosette, ensiform, 1½ foot long, 1—1½ inch broad, bright green, narrowed gradually to the point. Scape flattened just like the leaves, producing a cluster of five or six flowers from the side 3 or 4 inches above its base. Spathe-valves 3—4 inches long, ovate, acutely keeled, firm in texture. Pedicels finally as long as the spathe-valves. Perianth bright yellow, the divisions of both sets maculate in the lower half with horizontal bands of red-brown. Outer segments oblong, flat, 18—21 lines long; inner about half as long, panduriform, reflexed at the tip. Genitalia about as long as the inner segments, the three petaloid cuneate stigmas lemon-coloured, longer than the cylindrical style, and each furnished at the top with three large linear teeth. Stamens pressed against the stigmas as in an Iris, the ligulate anthers longer than the free subulate filaments. *J. G. B.*

OUVIRANDRA FENESTRALIS.

To grow this singular plant to perfection it should be potted in rich turfy sandy loam, with a moderate quantity of crocks at the bottom of the pot or pan, and it should then be placed in water at a temperature of from 68° to 75°, adding a quantity of fresh water every day, and always providing that the house is clean and the air sweet. There will then be little doubt of success in the cultivation of this interesting plant. "Brassica" (see p. 88) should adopt this plan.

I have grown it successfully, and I have seen it at Kew and at Chatsworth in a high state of cultivation. At these places it has been grown in large tanks with other aquatic plants, and with a small but continuous flow of fresh water. In the latter place the supply was made to pass over a small overshot wheel, with a view of giving motion to the water in the tank; but where this is not practicable it may be grown very well in a large pot or wooden tub, about 2 feet in diameter, and if the latter, 1 foot deep will be sufficient. If the former be used, the plant may be raised near the surface upon an inverted pot; and in this case the plant will be much benefited by occasional syringings over the leaves, keeping a pot of water always standing near and of the same temperature as that in which the plant is growing for the purpose.

In 1857—the second year, I believe, after its introduction to this country—Mr. Ellis kindly offered a plant to Sir Joseph Paxton to be grown in the Crystal Palace, his object being to enable the million to see this truly wonderful vegetable curiosity; accordingly, on April 29, I was sent down to Hoddesdon in order to bring back, with all care, this treasure to the Palace. It was potted and placed in the large tank at the north end of the Palace, the water being kept at a temperature varying from 70° to 75°. The Victoria and many other aquatics were growing in this tank. The plant succeeded admirably, and on June 8 following it produced its first flowers. A few days after this Mr. Ellis paid us a visit, and expressed his surprise at seeing it in flower, and, I believe, informed me it was the first time he had seen it flower in this country. It had leaves about 9 inches long, and about 2 inches in breadth. I have seen other plants with leaves much broader than this, and which I have little doubt have been seedling varieties.

I may mention that I grew a plant of this aquatic in the Cattleya-house at South Kensington in a large pot of water, the temperature of which was often below 60°; and, in order to get the pot close to the hot-water pipes it was put partially under the stage, and consequently had very little sunlight; it, however, grew tolerably well for a considerable time, but did not produce leaves more than 6 or 7 inches long, and about 1½ inch broad. I think we kept it alive something over two years in this temperature; it was growing in a 48-pot, and the pot holding the water was about 1 foot 6 inches diameter. This proves that the plant may be kept in a lower temperature than it is generally grown in; but under these conditions the leaves do not become fully developed. *G. Eyles*, 44, *Eardley Crescent, South Kensington.*

OPEN AIR VEGETATION.

BY JAMES MCNAB.*

THE weather in December has been very changeable. During the early part of the month we had a good deal of frost, snow, and rain. On the 5th the snow lay on the ground to a depth of 6 inches; it remained about a week, when it suddenly disappeared, after that high wind and rain prevailed till the end of the month. On twelve days only was the thermometer at or below the freezing point indicating collectively 81°, of this number 75° was experienced during the first fifteen days, while 6° only was registered between the 15th and the end. During December, 1874, the thermometer was on twenty-eight mornings at or below the freezing point, indicating collectively 277° of frost, 79° during the first fifteen days, and 198° between the 15th and the end. The six lowest temperatures experienced during December, 1875, were on the mornings of the 1st, 3d, 4th, 5th, 7th, and 15th, indicating respectively 22°, 25°, 25°, 22°, 24°, and 23°; while the six highest morning temperatures were on the 13th, 14th, 26th, 27th, 30th, and 31st, when 39°, 39°, 40°, 43°, 43°, and 44° were indicated. The following table records the

December Frosts for the last Thirteen Years.

December 1863	.. ..	50°	December 1870	.. ..	129°
,, 1864	.. ..	75	,, 1871	.. ..	59°
,, 1865	.. ..	10°	,, 1872	.. ..	54°
,, 1866	.. ..	31°	,, 1873	.. ..	36°
,, 1867	.. ..	41°	,, 1874	.. ..	277°
,, 1868	.. ..	22°	,, 1875	.. ..	81°
,, 1869	.. ..	119°			

Another table is compiled from a series of notes made on garden vegetation during the year 1875. It shows that 658 species and varieties of alpine and dwarf herbaceous plants have flowered on the rock garden during the past twelve months. The amount stated is considerably below the number of species cultivated on it, notwithstanding it gives a fair idea of the proportion of alpine species flowering during each of the last twelve months. This list, however, does not include a number of dwarf alpine shrubby species which do not flower regularly, nor many species of plants which do flower, chiefly belonging to the genera Saxifraga, Sempervivum, and Sedum. These, however, count in the third table of this paper.

Table showing the Number of Species as they came into Bloom during each Month.

	Species.		Species.
January, 1875 ..	13	July 1875 ..	73
February ,, ..	18	August ,, ..	49
March ,, ..	55	September ,, ..	15
April ,, ..	123	October ,, ..	3
May ,, ..	162	November ,, ..	1
June ,, ..	140	December ,, ..	6

The above table shows a rise in the number of species as they came into flower during each month up to May, after which they begin to fall off. On May 15 and 16 twenty-one species are recorded as having flowered, which is more than during any other two consecutive days throughout the year; with ordinary cultivated border herbaceous plants, the largest number of species is generally to be found in bloom during June and July.

Besides the general list given of the alpine plants flowering during each month, and made up from daily observations, a list has also been kept showing the duration of blooming of many plants. In some cases it was found that certain species remained in flower for one, two, or more weeks, while others continued in a blooming condition for two or three months successively. Five species, however, were observed to be in a flowering condition for four, five, or more months together, such as the Veronica rupestris, Lithospermum fruticosum, Androsace lanuginosa, Bellis rotundifolia, and Linaria alpina. The former of these, Veronica rupestris, has been in flower in one position or another of the rock garden during every month of 1875, and the Lithospermum fruticosum since April 13. During the month of December the following additional species have come into bloom, viz., Helleborus orientalis, H. albicans, H. niger, Primula denticulata, Andromeda floribunda, and Erica herbacea alba; this last is really a charming variety, having pale green leaves and pure white flowers, and blooms much earlier than the ordinary Erica herbacea or carnea. Besides the above, we had also in bloom on Dec. 31, and noticed in the November and previous lists, Helleborus niger maximus, Primula vulgaris rubra, Gentiana acaulis, Veronica rupestris, Hepatica triloba, Lithospermum fruticosum, and Sternbergia lutea. Notwithstanding the untoward weather experienced during the month, this plant has wonderfully improved both as to the quantity and quality of its blooms, all growing in the stove compartments of the rock garden, as described in my notice of garden vegetation for November, 1875.

The following table gives the number of species and varieties (exclusive of duplicates) counted in bloom on the rock garden on the last day of each month during 1875. The number given is large in comparison with the table which gives the number of species as they came into bloom during each month. This, however, is to be accounted for by the number of duplicates grown, particularly of good flowering species, many of them having flowered in positions more or less exposed to the sun, and at different elevations where a longer duration of their flowering period is obtained. By this means the same species of plants frequently counts in two or more months. The excess of August over July is chiefly accounted for by the number of varieties of Calluna and Erica then in bloom. In this table also May stands in excess over all the others.

Table giving the Number of Species and Varieties in Bloom on the Last Day of Each Month, compiled from the Garden Vegetation Papers for 1875.

	Species.		Species.
January 30 ..	12	July 31 ..	207
February 28 ..	30	August 31 ..	263
March 31 ..	56	September 30 ..	95
April 30 ..	150	October 31 ..	86
May 31 ..	303	November 30 ..	20
June 30 ..	273	December 31 ..	13

MOSSES.

JANUARY 1 being a brilliant, calm day, I determined to devote its five hours of good light to a review of the mosses within reach that I had collected in 1875. Distant spring-heads on hill-sides were beyond my time, and Hypnum filicinum, Bartramia fontana, and similar sorts could not be overtaken. Rainy days had also filled the burns, so my favourite plan of walking up the centre of a rivulet, thus commanding the high banks on each side and water-mosses under one's feet and by the edges, was also out of the question. Nevertheless, I collected one Bartramia, three Bryums, three Dicranums, one Didymodon, one Fumaria, sixteen Hypnums, two Grimmias,

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Erythronium revolutum, Smith, in Rees' Cyclop.—Cormo oblongo; foliis glaucis lanceolatis e medio ad basin et apicem angustatis nullo modo maculatis; scapo semipedali unifloro; perianthii cernui purpurei 15—16 lin. longi; segmentis lanceolatis acuminatis supra basin luteo-maculatis; filamentis exappendiculatis; perianthio triplo brevioribus; antheris parvis citrinis; stylo ovario obovoideo æquilongo apice breviter tricuspidato.—*E. grandifolium var. revolutum*, Hooker, Flor. Bor. Amer. ii. 182; Baker, in Linn. Journ. xiv., p. 208.

† *Cypella brachypus*, Baker, n. sp.—Foliis distichis ensiformibus sesquipedalibus saturate viridibus; floribus per 5—6 glomeratis e latere scapi 3—4 poll. supra basin egredientibus; spathæ valvis navicularibus 3—4 poll. longis; pedicellis spathæ valvis demum æquilongis; perianthii lutei segmentis dimidio inferiori horizontaliter rubro-brunneo maculatis; exterioribus oblongis 18—21 lin. longis; interioribus minoribus panduriformibus complicatis; antheris filamentis æquilongis; stigmatibus petaloideis cuneatis citrinis apice distincte tricuspidatis.

* Read at the January meeting of the Edinburgh Botanical Society.

four (Orthotrichums, four Polytrichums, two Sphagnums, and two Tortulas—a total of thirty-nine; and four of these I had not previously found in fruit. Another object I had set for myself was to find the fruit in its different stages on those I had been too late for in 1875. Thus the first day of 1876 made sure that no time should be lost of this year so far.

The great advantage of collecting for one's self was very apparent in such a hurried foray, as I knew exactly where to find each sort, and not a minute of light was lost. Those who know the charm of having an earnest quest on hand are sure to remember the precise spot where the quarry was hunted down, or a prize (to them) first discovered, no matter what the object of the pursuit or discovery be, a red deer or a butterfly, Rheum nobile or a tiny Grimmia.

A slight hoar frost on the sedgy meadows impeded my search there, so after a snatch at Hypnum denroides I left the undrained land until the sun had licked up the beautiful frost patterns, and hied me to the woods and sunny turf-topped dykes. How pleasant it is to tread on the elastic Pine needles, no longer slippery, and how convenient the low winter sun, letting one get on double quick in the search for moss fruits. To be sure you are blinded at times, but the most incorrigible grumbler never complains of the winter sun, and a step east or west puts the trunk of a tree between you and it. Invaluable as is a herbarium (I believe), and impossible as it is to do without books, what comparison is there between the quick living information gained in collecting specimens this bright winter day yourself, and, after picking out extraneous matter—dead leaves and withered grasses—arranging them to your taste or in families on a table n strong lamp-light, and taking "a good solid think," ike friends in council over them all? What a contrast I say to the dried-up herbarium specimens, and o the unexact amateur mind. Would these lovely green eathers of Hypnum proliferum be recalled by such a opular (so called) sentence?—"Stems tripinnate, eaves serrated, papillose on the back, the cauline nes cordato-acuminate, striated with a nerve running nearly to the point, those of the branches more ovate, vith a single or double nerve at the base," &c. It is difficult for the beginner to believe that colour and ize go for nothing in proving the "who's who" of a lant, and that a description like the above should be ufficient.

Here we see Polytrichum aloides on the peat-topped vall with its bright crimson calyptra, but the form f the cylindrical capsule within is the point; P. nanum rowing close by with its white calyptra is only roved by its subglobose capsule, but there is no oubt the coloured coverings of these seed-vessels are ery attractive at present. It is much easier to detect he fruits now when the sun-light slants low, and gets hrough the bare trees. Only one fruit did I find on Hypnum proliferum, plentiful as were the masses of his moss.

After such a day of careful summing up of one's mall knowledge, one feels more clear and ready for resh acquisitions in the coming season.

A New Year's Day forces one to review many a subject, bitter and sweet; I found a long wander in the woods and fields among the mosses helped one greatly o see things straight and true. *F. J. Hope, Wardie Lodge, January*, 1876.

LIMESTONE AS FUEL.

We are indebted to Mr. Moule for having stated precisely the process by which he believes that heat is produced by the evolution of carbonic acid from limestone in contact with coal. Those who have hitherto asserted this doctrine have done so in vague and ambiguous terms, so that it was impossible to fix the exact point at which their conclusions diverged from those of science. Mr. Moule's clearness enables us to do this. And in speaking of science we must remind your readers that I am not about to put forth any propositions of my own under that name. What I have to say will be found stated and fully explained in every treatise on heat. It is the result of those innumerable experiments which have been made by the most careful observers from the days of Priestley down to those of Joule. These observers have, with the most untiring care and extreme watchfulness against the possibility of error, sought the laws of Nature with regard to the production and the measurement of heat; and it is not too much to say that unless every one of their observations (on which a great part of modern mechanical progress has been founded) was wrong, Mr. Moule cannot be right.

Mr. Moule's whole error lies in this, that he ignores the doctrine of latent heat. Latent heat is that measure of heat which is absorbed or enters into a body as a necessary condition of its state. Thus water in passing from the state of ice at 32° to that of water at 32° absorbs 144° of heat; in other words, in becoming water it absorbs as much heat as would raise it to the temperature 176°, if applied after it has been liquefied. This amount of 144° of heat, although it has become insensible to the thermometer, since the water liquefied from the ice shows no higher temperature than the ice itself did, is not destroyed or dissipated; it simply becomes latent or inherent in the water as a condition of its being water; and it will become sensible again, or be given up by the water, if it should again be changed into ice. But further, when water at 212° is changed into steam also at 212°, no less than 960° of heat becomes latent in the steam. In other words, as much heat is absorbed by steam, as a mere condition of its existence, as would suffice to raise 960 times the quantity of water which produced the steam to the amount of 1° of heat, which is the same thing as raising the same quantity to 960°, if that were possible. And this heat is lost as regards heating purposes till the steam is reconverted into boiling hot water, when it will give out these 960° in the form of sensible heat, communicated to surrounding objects. Now the law of which these are examples is universal. Every substance in passing from the state of a solid to that of a liquid or a gas, absorbs a definite measure of heat, which, for all heating purposes, is lost, since it becomes latent, though it really exists, and would become sensible if we could by any means change the gas or liquid back into a denser form.

We do not know precisely what is the latent heat of carbon vapour, for (so far as I am aware) it has never been directly measured; but we can make a guess at it by indirect methods. Gas companies volatilise carbon in combination with hydrogen in their retorts, and to do this they have to burn about an equal weight of coke to that of the gas produced. No doubt there is some waste of heat in the furnaces, but not a great deal, for the managers know that every pound of coke needlessly burned diminishes dividends. But if we grant that as much as half the heat is wasted, still we should have the result that every pound of gas produced absorbs and renders latent one-half of the heat which the combustion of a pound of coke can produce. Another more exact method of arriving at the result is as follows. I must premise that the usual way of measuring heat evolved by combustion of any substance is by computing the number of pounds of water which would be raised 1° F. by the combustion of 1 lb. of the substance. This number of pounds is called the equivalent of heat of the substance in question. Now, the equivalent of heat of carbon, if burned to carbonic acid, is about 14,500; but if only burned to carbonic oxide it is only 4500. The former gas consists of one volume of the vapour of carbon united to two volumes of oxygen; the latter gas consists of one volume of vapour of carbon united to only one volume of oxygen. The heat given out in combustion arises from the chemical combination of the carbon and the oxygen, hence the combination with one volume of oxygen ought to give exactly half as much heat as the combination of two volumes. But we see that it does not, for combination with the first volume yields only 4500°, whereas the combination with the two volumes yields no less than 14,500°. Whence the difference? It arises from the fact that the carbon in combining with the first volume of oxygen to form carbonic oxide has to become vapourised, and in becoming a gas there is absorbed or rendered latent about 5000° in the mere act of changing the carbon into a gaseous form; whereas, when once converted into that form, 10,000° of heat are evolved in its union with the next volume of oxygen so as to form carbonic acid.

In applying these principles to Mr. Moule's propositions, we have first to note that he concedes that limestone, if placed above incandescent coal, does not yield any heat. But the concession is too small. Limestone so placed not only yields no heat, but it absorbs and renders useless a great deal. The carbonic acid combined with the lime is in a solid state. When driven off from the lime as gas it demands and obtains its necessary proportion of latent heat, and this is so much abstracted from the heating power of the coal. Lime burners find that the coal needed is about one-third of the weight of limestone. Mr. Moule also will find that if he piles limestone to the amount of three times his coal above the latter, he will obtain a very small residuum of heat available for warming a boiler placed on the top of it.

But Mr. Moule says the case is altered in his favour if the limestone is put under the coal. He insists that if the carbonic acid gas driven off from the limestone meets the incandescent coal, it becomes carbonic oxide, which is a combustible, and which in burning will yield heat. All this is true, but let us trace at what cost this heat will be got. First, to drive off 1 lb. of carbonic acid from the limestone (say roughly from 2 lb. of the limestone) $\frac{3}{4}$ lb. of coal (but to allow for any waste of heat, say only $\frac{1}{2}$ lb.) will be required, and the heat of this will be absorbed and rendered latent in the carbonic acid gas. Next, in order that this 1 lb. of carbonic acid gas may become carbonic oxide gas it must unite with the vapour of $\frac{1}{3}$ lb. of carbon. In doing so, a part of the oxygen is transferred from its union with the original carbon to form a union with the new carbon, and there being thus decomposition and combination, it is hardly possible that any heat can be evolved in this stage—indeed, Mr. Moule does not claim any. We have then got $1\frac{1}{3}$ lb. of carbonic oxide. This is to be burned, and it is from this that Mr. Moule claims to make up his additional heat. Let us see how much it will produce. It was before stated that 1 lb. of carbon in becoming (by union with 1 atom, or $1\frac{1}{3}$ lb. of oxygen) $2\frac{1}{3}$ lb. of carbonic oxide yields 4500° of heat, and that, if converted into carbonic acid, it yields 10 000° more. Hence, if $2\frac{1}{3}$ lb. of carbonic oxide yields 10,000°, it follows that $1\frac{1}{3}$ lb. will yield 6154°. This is the total amount of heat evolved as sensible or available caloric in the course of the several processes which Mr. Moule describes. In order to obtain it, we have seen that one-half, plus one-third of a pound of coal has been burned. But coal has much the same equivalent of heat as carbon, when both are completely burned to carbonic acid gas. Hence, $\frac{5}{6}$ lb. of coal, if burned directly, would yield 12,083° of heat in a sensible form. It results that, by interposing the limestone process, 5929° have been actually lost, equal to a waste of almost a half of the coal burned. It is rendered latent and unavailable in the extra gases which have been produced. Thus the nett practical result of Mr. Moule's process, when reduced to figures, is simply a loss of one-half of the heat of the fuel that is used in calcining the lime. Of course what other fuel is burned will yield its proper amount of heat.

It is only just to Mr. Cowan to say that, so far as I know, he has never put forward a claim to any gain of heat by burning limestone in his kiln. He has limited himself to the claim that he produced a substance of such value that it practically paid the cost of the coal used. This is perfectly correct, and will continue to be well founded so long as, in each locality, fresh burned lime commands a remunerative sale. But beyond this there is something very instructive and valuable in the system of kiln-heating. It appears certain that, in many cases, actually less coal is employed in the kiln, where it has to perform the double duty of burning the lime and heating the boiler, than was previously employed in the single duty of heating the boiler alone. This is very remarkable, and while great credit is due to Mr. Cowan for arrangements which bring about a result so valuable, the reason of it well deserves the inquiry of both scientific and practical men. If I venture to suggest an explanation, it is with much hesitation, for we really need more exact experiments before we can speak with confidence. But the reason on the surface appears to be this. In the old systems of boiler setting a good deal of heat was conducted away and lost by the iron fire-bars, dead-plates, and furnace-door frames. Still more was lost by the excessive amount of air admitted both above and below the fuel. This sweeps the heat away into the chimney before it has time to act on the small amount of boiler surface exposed, besides the actual reduction of heat occasioned by the admission of so much cold air, and by the escape of unconsumed smoke and gases. In the kiln these conditions are reversed. The fuel is surrounded by a vast body of brickwork, an admirable non-conductor, only so much air is admitted as is needful for thorough combustion, none is admitted above the fuel, and thus the red-hot gases are carried slowly up to dwell on the surface of the boiler, and to yield to it a large proportion of their surplus heat before finally escaping. Mr. Cowan obtains a specially large amount of heat from them by a very well-contrived form of boiler. But even the old-

ashioned boilers under this treatment develope an unexpected capacity for extracting heat from the furnace. We owe to Mr. Cowan instruction in the method of most economically burning fuel, although we cannot concede the claim which others make of extracting heat from substances which in reality only waste it. *J. Boyd Kinnear, Guernsey.*

SCOTTISH COTTAGES AND THISTLES.

THESE cottages are near the village of Meigle, in Forfarshire, a country rich in antiquities and historical associations. It is in the immediate neighbourhood of the country of *Macbeth*, Glamis being to the north and Birnam Wood and Dunsinane being right and left to the south. The present railway divides these two places, and they may both be seen from the carriage windows left and right. In the graveyard of the parish of Meigle may be seen a number of early Christian stones of the tenth century. These standing stones are elaborately carved on both sides with human figures, animals, and scrolls.

The cottages are dilapidated structures, with eaves about 6 feet high, whilst the Thistles (Onopordon Acanthium) were, at the time the sketch (fig. 25) was made, at least 8 feet high. These Thistles, which had evidently been planted by some staunch lover of his country and its national emblem, had at once, from their great size and robust growth, a handsome and quite semi-tropical aspect. At a distance they looked like a row of well-grown, tall, slender, glaucous Aloes. The planter of these Thistles was not troubled with doubts as to which is the true Scotch Thistle, and boldly adopted a naturalised citizen instead of a native plant. For the history of the Scotch Thistle the reader is referred to two interesting communications in our volume for 1873, pp. 365 and 436.

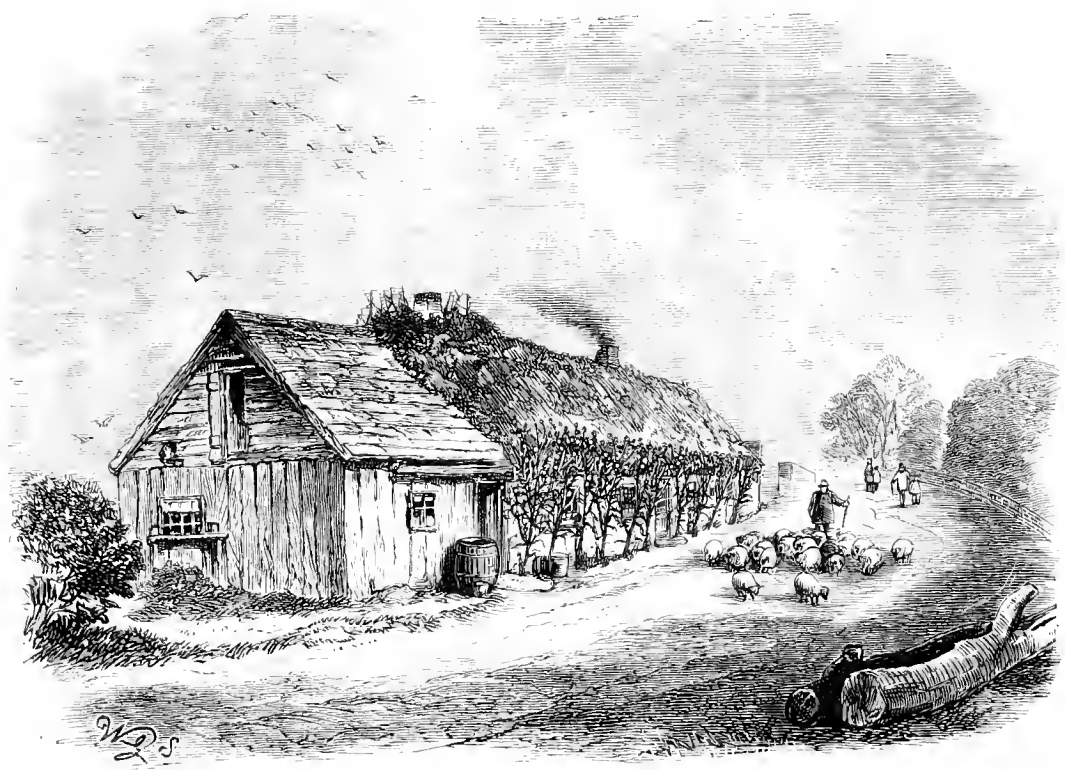

FIG. 25.—SCOTCH COTTAGES AND SCOTCH THISTLES AT MEIGLE, FORFARSHIRE.

TODEAS AT THE LAWSON NURSERIES.

SOME months since, when visiting the celebrated nurseries of the Lawson Company at Edinburgh (and of which some mention was made at the time in these columns) we were taken, as to a culminating point, to a very ordinary-looking low span-roofed pit, which many unused to the manners and customs of nurserymen might have passed by as not likely to contain ought worth seeing. On raising the latch of this humble tenement, such a view burst upon our gaze as held us for a time transfixed with astonishment. This shabby unpretentious pit proved to be a real ravine, thickly lined with Todeas and Hymenophyllums.

Our illustration (fig. 26), taken from a photograph, gives but a feeble idea of the numbers and wonderful beauty of the plants. The colour, it is true, was somewhat dull and monotonous, but the health and vigour of the fronds and their exquisitely delicate forms proved an ample compensation. From information kindly afforded us by the manager, we learn that "the plants include representatives of Todea superba (the large majority this kind), T. intermedia, T. hymenophylloides, and several distinct-looking forms of each species. The dry stems of these Ferns were imported in May, 1873, from New Zealand, packed together in large casks, and have never been at any time treated with artificial heat; they were at first plunged in a bed prepared for the purpose in a cool house, and soon commenced to push growths vigorously; they remained thus plunged until the following spring, when they were shifted into pots and baskets, where they now stand. From experience it is found that they stand extreme frost. During all December, 1874, they stood completely frozen, with 2 inches of ice on some parts of the bed in which they were plunged. The house is continually shaded except during the few winter months, and the foliage is always kept moist by watering overhead when necessary with a fine-rosed watering pan. The plants are in vigorous health now, beginning to push strong young fronds. No doubt many Todeas have been lost through having been put into stove-heat, exposed to the glare of the sun, and the foliage allowed to become too dry."

Foreign Correspondence.

PALLANZA: THE NURSERIES OF MESSRS. ROVELLI. Some nurseries have a double claim to notice; not only are their contents rich or interesting, but the surroundings, the setting of the picture is also beautiful. Such is the case at Mr. Rogers' nursery at Southampton, at the Lawson nurseries at Edinburgh, at Messrs. Veitch's nurseries at Combe Wood, and at others to which it is not necessary for us now to refer. The nurseries of the brothers Rovelli at Pallanza, on the Lake of Maggiore, is a case in point. Occupying two sides of an elevated ridge, each side commanding a different prospect of the lake, and the summit presenting a panorama of snowy mountains, chestnut-covered slopes, vine-clad hills, fairy islands, and at the base the silvery sinuous lake, it must be admitted that very few if any nurseries in the world could compete with this in the point of beauty of surroundings. Still if this were the only claim it had upon the notice of horticultural readers it might be passed with mere incidental notice in these pages. But when we say that its contents comprise some of the noblest specimen Conifers in existence, an acre or two or perhaps more of Camellias in the open air, and a large assortment of rare and interesting plants, we have said enough to induce the visitor to Lago Maggiore, of horticultural tastes, not to proceed on his journey before he has visited these nurseries.

A glance from the high road suffices to whet curiosity, for on the terrace facing it may be seen a noble Dracæna indivisa, and a grand plant of Jubæa spectabilis, good illustrations of Buonapartea gracilis, Lomatia longifolia, Edwardsia chrysantha, Citrus triptera, Yucca glauca, and various species of Bamboo, including Bambusa Simoni, aurea, and gracilis. Habrothamnus was in full bloom at the time of our visit, together with the red-leaved Lagerstromia indica, Benthamia fragifera (fruiting), Glycine alba, Olea fragrans, as sweet as the very beautiful fungus Clathrus cancellatus is the reverse. This latter plant, by the way, is one which can hardly be said to be cultivated by Messrs. Rovelli any more than the Galinsoga parviflora, that humble Composite so common of late years in the market gardens round Kew, and which is a pestilent weed in the nursery now under comment. Acacia dealbata, and especially Acacia Julibrissin, is largely planted in the nurseries and in the streets and gardens hereabouts, and they, together with Lemons and Olives, Agaves and Arundo Donax, Capers and Mesembryanthemum, give a very fair index to the climate. And yet it seemed strange to find Chrysanthemums (in October) no further advanced, if at all than in England. It is clear we have still a good deal to learn as to the influence of climate on vegeta

tion. The Camellias were not in bloom, else one would be sorely tempted to say something about them, seeing them in quantities reminding us of the acres of Rhododendrons in some of our great Surrey nurseries. Rhododendrons are largely grown here also, especially the Sikkim sorts. The soil in which both the Camellias and the Rhododendrons are grown is naturally of a light character, and is rendered more so by leaf-mould and peat from the neighbouring mountains.

Among the plants in flower at the time of our visit mention must also be made of a variety of Abelia rupestris, raised by Messrs. Rovelli, and having the excellent quality of being almost always in bloom, and of being nearly, if not quite, evergreen.

But after all it is a question whether the most remarkable feature of this nursery does not consist in its Conifers. They are really superb, and comprise some among the rarest kinds. In our experience we do not remember to have seen a finer Libocedrus decurrens (the Thuja gigantea of some gardens). The specimen here is 30—40 feet high, and its stateliness is in proportion. A plant of Abies religiosa 30—40 feet high was in cone, as also Pinus Sabiniana. Larix Kæmpferi is here to be seen, in the shape of perhaps the largest specimen in Europe; so also L. leptolepis and Keteleeria (Abies) Fortunei, which flowered this year.

Among the other species here seen may be mentioned Pinus Wincesteriana, P. Russelliana, P. canariensis, P. patula, Araucaria brasiliensis, Podocarpus chilina and Macqui, Libocedrus chilensis, Cupressus Udheana, Cephalotaxus Fortunei, Cryptomerias, and Junipers, Abies bracteata, and, of course, the contested species, amabilis and its allies; in fine, almost all the finest and rarest species in cultivation, and these not in liliputian nursery stock, but for the most part as noble specimen trees.

After the riches of the outdoor department, we had not much inclination to see the indoor plants; it must therefore suffice to say that Messrs. Rovelli do not neglect indoor gardening, and have a general stock of stove and greenhouse plants of the usual character. *The Rambler.*

MONTECITO, SANTA BARBARA, CALIFORNIA: *Dec. 3, 1875.*—I promised on my last interview with you in England I would write you of my doings in America. I found the winters too long and too severe in the State (Indiana), in which I remained two years. I then turned my attention to Southern California, which I think might well be termed the garden of the world. I have now been here about sixteen months, and a more beautiful country for climate I think cannot be found. We have fruits and flowers from almost all climes, thriving in the open, both winter and summer. Strictly speaking, we have no winter. The fact of the Tomato being a perennial plant, and fruiting at all times of the year, will settle that. From now, and until February, the weather accords with our English genial spring-time. I believe all kinds of fruit are grown in the State except the Pine-apple, and grown too on the most extensive scale; not merely a garden of this and that, but whole farms devoted to fruit growing. The Orange, Lemon, Lime, and the whole Citron family, are just at home here, and the fruit is very fine and excellent in flavour; also the Bananas—three kinds, Loquats, Guavas, Tamarinds, besides the usual everywhere-to-be-seen orchards of Peach, Nectarine, Apricot, Plum, Cherry, Apple, and Pear, with Figs, Grapes, and hosts of the smaller fruits, which, with its perpetual blooming plants, constitutes it a perfect garden. In most places of any pretensions will be seen growing, and in huge specimens, too, the Pelargonium in all its sections; Neriums, Lantanas, Gardenias, Daturas (large white), Tea Roses—these are splendid; Verbenas, Heliotrope, Vinca rosea and alba. I might extend the list—but enough. I will, however, mention the Norfolk Island Pine (Araucaria excelsa): this is really one of the grandest ornaments as seen here. Eucalyptus globulus (Blue Gum) is being planted everywhere upon all lands, and is expected to realise vast incomes by its rapid growth; it is also a very ornamental tree in the landscape. One of the finest trees for city lines is an umbrageous, pinnated-leaved evergreen, known as the Pepper Tree [Schinus Mulli]. Grape growing is carried out upon the most extensive possible manner. The Muscat of Alexandria is quite at home here, and is dried very extensively for raisins, becoming an especial favourite for that purpose. I am going to embark in Grape growing, and would wish to make a friend of you in asking you to send me by post some Vine cuttings of any kinds you possess, Muscat of Alexandria excepted; a cutting or two of a kind would be ample. The postal system is the one usually adopted in sending plants from the Eastern States to California, and by the same means cuttings in a dormant state should arrive here from England in perfect safety. Three weeks we receive letters in. We are just commencing gathering Strawberries, which I must remark are to be had nine out of twelve months. I have also a fine lot of English seedlings I am fruiting this spring. I have bought a piece of land recently—110 acres—which I shall put into fruit mostly. *John Richard Cross.*

The above letter I have just received from Mr. John Richard Cross, a clever gardener of the Trentham school, and lately gardener to Miss Ryland, Barford Hill, near Warwick.

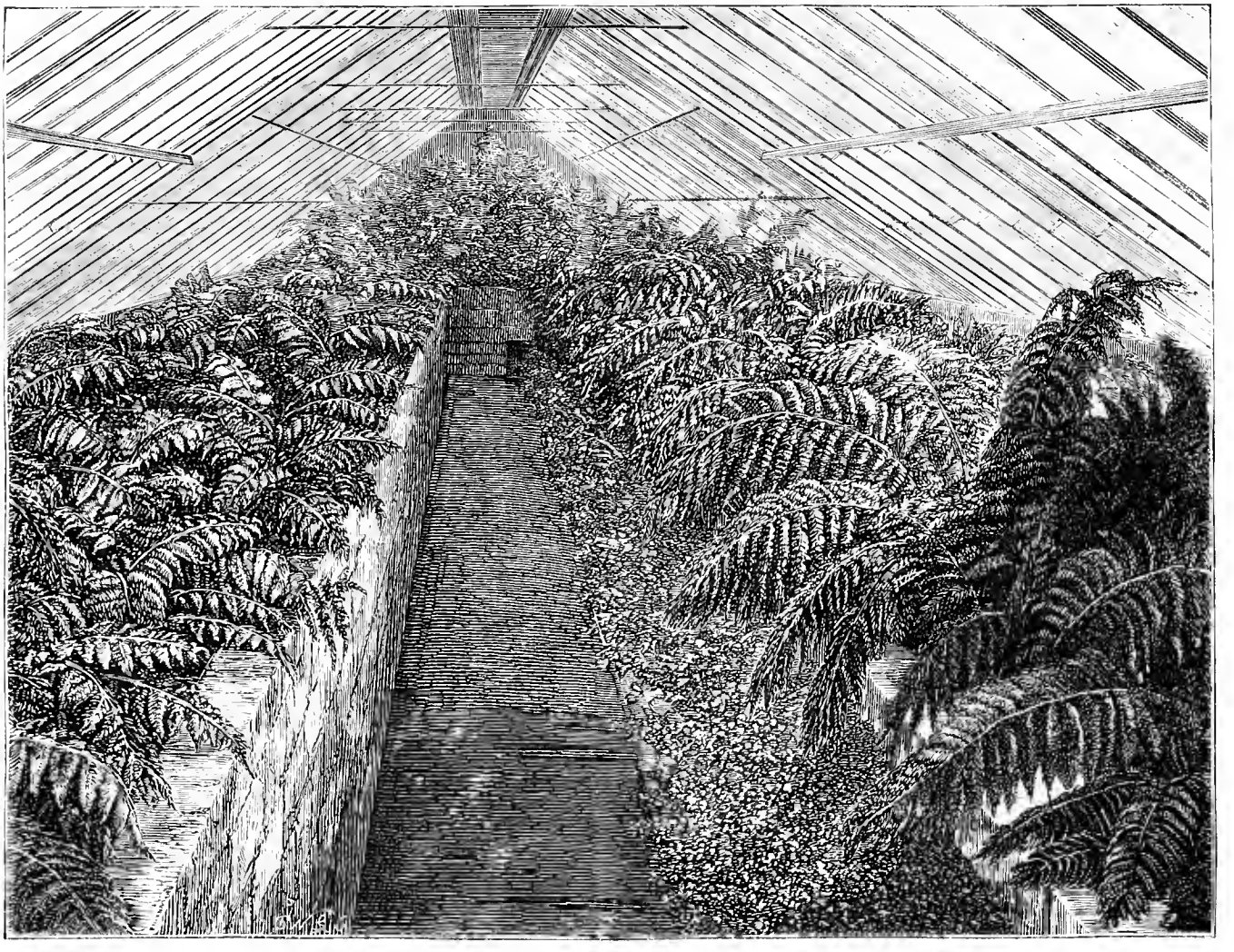

FIG. 26.—TODEA HOUSE IN THE LAWSON COMPANY'S NURSERY, EDINBURGH.

The letter strikes me as being one of considerable interest, and of so descriptive a character that I feel it would be selfish of me to withhold it from public perusal, and, with your permission, I send it for publicity in the *Gardeners' Chronicle* — coming, as it does, from a practical horticulturist well known in Warwickshire, and from one who has had pluck enough to unmoor himself from the overcrowded and underpaid horticultural haunts of this country, to try his fortune, with success let us hope, in the fairer fields of the far western hemisphere.

The letter will tell its own tale, and I think many of your readers, more especially young gardeners and gardeners out of place, will be pleased to know this much more of a country of which we have from time to time, and from various sources, been hearing so much. We are all of us sadly afflicted with that direful complaint known by the name of "home sickness," which keeps us in this country, wasting the bone and muscle of our youthful prime, sometimes perhaps in place, and sometimes in the Starveall Nurseries, just as Fortune, with her malicious smile, chooses to will it.

The description given by Mr. Cross of the luxuriance of growth, the continuous flowering and fruiting of plants throughout the year, is enough to set one to longing for a ramble through the groves of such a magnificent country. Would that some kind philanthropist, in the interest of the British gardener, would charter a ship and organise a horticultural expedition to some convenient point where tropical vegetation might be viewed in all its grandeur; and if we are to have an expedition of this kind why not steam direct to the mouth of the River Amazon, and make short excursions into the interior of the country from the banks of that river. We might also along the whole coast from the mouth of the River Amazon to that of the Orinoco make profitable excursions into British, French, and Dutch Guiana, than which we are told few countries on the surface of the globe can be compared for luxuriance of vegetation.

Our army and navy are over and over again eating their heads off for want of something to do. Our ships of war are being burned down in the Thames before our eyes one after another, and moving about so closely in our channels that they are there by each other rammed to inglorious destruction, yet with the knowledge of so many idle men and idle ships, there is not a man in the country with soul or courage sufficient to ask Government to provide a ship in which free berths, passage, and biscuit might be granted to a batch of intelligent horticulturists desirous to go forth to see the beauty and luxuriance of tropical vegetation in its native habitat. For once would it be too much to ask Government to part and send forth such a peaceful expedition as the one I have been bold enough to propose?—than which nothing could tend more as a means to the great end of elevating and refining the minds of our fellow men for our country's good. The laurels of this expedition—differing from those of the laurels of war—would take deep root, and prove ultimately a living and a growing monument to the memory of any Government who would grant and carry out the expedition to a successful termination. *W. Miller, Combe Abbey Gardens, January* 18.

Natural History.

MY FEATHERED VISITORS.—I promised a few weeks since to inform you of the various sorts of birds that visit my garden. Starlings all the year round I am never without; generally six pairs build in various parts of my house. During four months of one year I had a most extraordinary quantity, which roosted in a large Ivy tree covering the top of my dining-room chimney. About twenty minutes before sunset regularly the starlings come in flocks of about thirty from all parts, and settle on the tops of the adjacent trees. Counting the flocks as they came in their number amounted to more than 600—nearer 700. Just as the sun set they all flew from the trees into the Ivy bush, and there remained until sunrise, when again they flew in flocks to the adjacent trees, thoroughly well-cleaned and shook themselves, and then, at a given signal from their leaders, flew off, and I saw nothing of them until just before sunset again. Two white owls were with me last year, but this year I have not seen them. Wood pigeons I have with me always, and one pair have certainly built in a tree at the bottom of my garden regularly for more than thirty years; at least, if not the same pair, a pair. They bring up their young, and the young and old I have seen in early morning feeding on the lawn; but the young go and I never see them again.

I have a small pond in the garden, in which for many years gold fish have thrived and bred. On the edge of this pond I have seen three kingfishers. Tomtits I have in number. They are fed every morning with the sparrows, which never exceed sixteen in number. I suspect a curious, remarkably intelligent cat I have called "Tiger" has a special liking for young sparrows, and prevents their increase. This same cat has also a liking for gold fish, which he catches by the side of the pond. The nut-batch is a beautifully-shaped bird; I have had two, and two yellow wagtails. The yellow wagtail is an especially pleasant bird to look at; it feeds close to my window. Its movements and its colour are so different from the general class of birds. Magpies, jays, one pheasant, and jackdaws also visit me. The jackdaws come when the Cherries are ripe on a very large White Heart Cherry tree of forty years' growth. Thirteen jackdaws and rooks were counted on the top of this tree last summer, taking their fill of Cherries, for the tree bore well I am quite satisfied. They have the Cherries at the top of the tree, and, by the aid of a few nets, I have them at the bottom. Rooks, as I before named, I have now in large quantity. Wrens are constant with me in all parts of the garden, and I have, I am glad to say, that exquisite specimen of a small bird, the golden-crested wren. Thrushes black and grey in great number are with me; their song is very pleasant, and the starlings and thrushes keep the lawn fairly free from worms; they prevent their great increase. Fly-catchers and chaffinches are also with me, and robins, like wrens, are in all parts of the garden. I have never seen more than one woodpecker. Bats I have in great number. Swallows and martins flit about the garden, but, from some cause I cannot explain, never build near me. I have a suspicion from noticing where swallows build nests that they dislike creepers about a house, and like clean over-hanging barge-board free from all plant growth. I occasionally have hawks; not long since, one in chasing its prey came with such violence against a large pane of glass in a bed-room window as to break it in pieces and force itself into the room; unfortunately it broke its leg, poor bird. I was compelled in mercy to have it destroyed, but its bright piercing eye gave me a pang. White wagtails sometimes visit me, but they are rare. Your readers must recollect I live close to a very large railway station and close to the city, with all the puffing and snorting, and shrieking and shunting of the railway engines constantly going on, with all those other constant noises attendant on all large railway stations. If under these great disadvantages I get the birds I have named to visit me, what may those not have who live in the country, and will only exercise a little care and protection?

I have some snakes and many hedgehogs in the garden; they are carefully protected, being of the greatest use in a garden, and doing not the slightest harm. Snakes should be most carefully preserved. There is a foolish prejudice against them. It is pleasant to see them enjoy life basking in the sun, and it is still more curious in the evening to watch young hedgehogs searching out and feeding on slugs. Pardon me if I conclude with a word of advice to the noble and great of the land. Eschew the barbarous practice of pigeon-match shooting, tame pheasant shooting, wild beast fighting, elephant shooting; they are unmanly, unworthy sports. *K. K., Taddyforde, Exeter.*

The Villa Garden.

SEED SOWING.—How many complaints are constantly being made on the part of those gardeners of all kinds who are yet among the rudiments of gardening that they cannot get certain seeds to grow. The first impulse is to blame the seeds and the seedsman, never thinking for a moment, or unwilling to think, that the failure arose from any want of skill or lack of knowledge on their own part; the seedsman is often made a scapegoat for the errors of the inexperienced—no doubt a convenient arrangement, but decidedly wanting in justice towards the unfortunate vendor, for it is obvious that it cannot possibly be the interest of any seedsman to sell seeds of indifferent growth; but he oftentimes has to "suffer and be strong" in the face of misrepresentations that should not have been made.

Many seeds, as full of life and vigour as Hercules, never bring forth leaves, flowers, or fruit in due season, because they are unskilfully sown, or sown in the wrong temperature, or at the wrong time, and under conditions most unfavourable to their well-being That this is of constant occurrence is abundantly evidenced by the number of inquiries made on all sides as to the proper time and proper mode of sowing seeds. Should they be sown in autumn or spring?—thick or thin, deep or shallow?—and numerous other questions of this character are constantly being put, and for the sake of the first beginnings in the art of horticulture, which the Rev. Canon Hole once termed "the most gentle and delightful of all occupations," these questions ought to be answered as fully and simply as possible.

Simple as these questions may appear to the advanced horticulturist, they are yet the very first that arise in the minds of those who are wanting in gardening experience; and so well are seedsmen aware of this that they give much valuable information in their catalogues, in order to meet the necessities of this class of buyers.

THE PREPARATION OF THE SOIL is a leading and most important point in the process of sowing seeds. A soil that is of a strong clayey character, lumpy, and very wet, is not at all fitted for the reception of seeds. We have known such a soil to be roughly dug in winter, and Peas, Beans, and other seeds put into it much too soon; they, in consequence, germinated very indifferently, and many rotted in the uncongenial soil. It is, therefore, requisite that the ground in which seeds are sown should be well-drained, deeply dug, well beaten to pieces, and by becoming somewhat dry through the action of wind and sun, made fit to receive the seeds. In all stiff, wet, sticky soils—and they unfortunately abound in many Villa Gardens—it is a waste of time to sow seeds of any kind until some means have been adopted to render them of the friable character which is conducive to germination. But what can be done to render such soils fit for the reception of seeds is a natural question to put at this stage. The soil must be made drier by proper drainage, and open and friable by mixing with it certain things calculated to bring about such necessary conditions, such as cinder ashes, mortar rubbish, stable manure, and decayed vegetable matter. These ingredients mingling with the soil when not in a soddened condition, not only serve to get it into a good workable condition, but they also supply nourishment to the plants that spring from the seed. Such a soil needs to be dug over in time of frost, and thrown up in ridges in order that the frosty influence may penetrate it and pulverise it. Then, when the time for sowing comes round, the soil should be forked over in drying weather, well beaten to pieces, and levelled, ready for the operation. It is of some importance that the ground be freshly turned over before the seeds are sown.

FORCED RHUBARB AND SEAKALE.—The Villa gardener who has the means at his command should soon begin to set about the adoption of the means to procure an early supply of these. The plants can either be lifted and planted in a frame, which is the quickest method, or they can be forced on in the open ground, where they are permanently planted. In the case of the adoption of the first of these two methods, the rubbish and leaves which we have often recommended should be gathered together and carefully preserved, comes in very handy. A mixture of fresh stable dung and leaves makes an excellent bed in which to force some Seakale, and it should in the first place be well shaken together and built firmly up. Then a bed of soil at least 12 inches in depth should be placed on the dung, and the plants of Seakale lifted from the open ground, planted in it, and then surfaced with fine leaf-mould. A large flower-pot should then be inverted over the roots, and the lights placed on the frame, tilting them a little till the rank heat has passed away; then the frame should be kept closed.

Rhubarb can be blanched in the same manner. If blanched in the open ground still a covering of leaves and manure would be required, and we would recommend that all decaying leaves be cleared away from the plants, the soil about them gently forked over, and then surfaced with fine ashes to the depth of four inches. Then ordinary Seakale-pots, large flower-pots, butter-tubs, cement-casks, or any similar contrivance should be placed over the plants, the upper end being close, and the heating material built up about them, and burying them. In this way excellent Rhubarb and Seakale can be had; but the roots will require examination occasionally, to see that they are progressing favourably. In fact, Rhubarb can be brought on almost anywhere in a dry bottom, and where it is warmer than in the open air. Thus a bed may be made under a plant stage, in a plant house, in a cellar, or any out-of-the-way place, and though the leafstalk may become a little drawn, it will not be the less acceptable for table purposes.

Garden Operations.

PLANT HOUSES.

PLANT STOVE.—The time for repotting most of the occupants of the stove will shortly be at hand, preparation for which should at once be made by getting under cover, if not already done, the requisite quantity of peat, loam, and sand. Potting soil is much better exposed in the open air than confined in sheds, especially peat, which if kept altogether under cover becomes so dry as to lose its best natural properties, but when stored in the open air it is necessary to see that it is brought in sufficiently long before using to get dry enough. Very serious harm is often done to plants, particularly at the early spring potting, by using the soil too wet. When used in this condition and pressed closely round the ball of the roots, as required by most things, it lies in a compact sodden state almost impervious to air, and before the roots can enter it in any considerable quantities it becomes totally unfit for their healthy development. In successful plant-growing almost as much depends upon the preparation of the soil as upon the natural properties it contains.

NEPENTHES. — Although some of these plants have been long known in this country they were until very recently but seldom met with, the reason evidently being that their treatment, from being imperfectly understood, was often such as to entail failure, and consequently, many who would otherwise have grown them became disheartened, and gave them up. Yet there are no plants in existence more deserving of cultivation : they are peculiarly beautiful, and undoubtedly the most singular of Nature's vegetable productions. The reason that so few have succeeded in growing them in a way they are capable of being produced in, is attributable to two causes—an impression that they require to be treated as bog plants, and also that they need to be grown in dark confined places : the result of which is that they never get half the requisite strength of roots, or attain the general vigour of leaf, which nothing but a sufficiency of light can impart. Of all the plants in cultivation there are none I know of whose roots are so fragile or so impatient of being in any way mutilated, so much so that in potting it is scarcely possible to remove the drainage from amongst them without effecting serious injury. It is impossible to get away exhausted soil, or to shake them out in the way usual with other things. When this is attempted the plants either die right out or have a shrivelled, miserable appearance for months afterwards, generally losing the greater portion of their leaves ; consequently, when in a small state and first shifted from 3 or 4-inch pots, the material used to grow them in should be of such a nature that it will never become soddened and sour for the whole time the plants are expected to live. The necessity for using material that will be long before it becomes decomposed when continually saturated is obvious, as to grow them well they should, during the spring and summer, be watered every day, and two or three times a week in the winter. This will also point to the necessity of draining the pots well. From the first they should be suspended near the glass, lowering them as head-room is required. They have a nice appearance grown in rustic baskets, but they are much better in pots, as in the former the protruding roots naturally suffer. To combine the requirements of the plants and effect as well, the pots may be plunged in baskets lined with sphagnum. They do not need very much root-room—a 7-inch pot is large enough for a plant with a single growth 4 feet high, and 12 inches diameter is big enough for a specimen that has been twice headed down, and which should then have four or five growths. They enjoy plenty of light, but must always be shaded during summer weather, and should be syringed overhead every day when in active growth, and every other day in the winter.

FORCED FLOWERS.—A supply of such hardy shrubs as have been potted for the purpose should be placed in heat to keep up a succession for the conservatory ; it is not well to bring more into bloom at a time than required. There is nothing better for forcing in this way than Deutzias and Laurustinus ; the flowers of the latter are excellent for cutting, purer in colour than when they open out-of-doors. Where Rhododendrons are used for the above purpose, the kinds should be selected that naturally bloom early, as these will need much less warmth to bring them on, and flower more satisfactorily than the latter sorts. Amaryllis should also be kept in a brisk heat with plenty of light, and well supplied with water when they commence growing freely. *T. Baines.*

ORCHIDS.—As the Calanthes go out of flower it is preferable that they be turned out of their pots, the long ends of the roots cut off, and the bulbs laid in open shallow boxes on dry moss, keeping each sort, of course, separate. Let them be then placed on a shelf or stage where it is dry and comparatively warm, and for the next six weeks at least it will be better that they remain so, until the breaks are swelling at the base of the bulbs. Let the night temperature as given at the commencement of the month be still adhered to, it being bad practice to raise the heat yet for a week or two, for during March the increased temperatures can only by great exertion and difficulty be maintained. Though the weather just now may happen to be mild, and an advance could easily be kept up, it is advisable to have some regard to future probabilities and risks, and take action accordingly. The necessity of a low night temperature at present must be insisted upon.

It will now be necessary to look round the collection, and when any plants in baskets require fresh moss, or new baskets are needed, to proceed with the work at once. Square Oak baskets are some of the best for this purpose ; and cork can be made up into pretty rustic ones, though not quite so durable. The clay ones made by Mr. Matthews, of Weston-super-Mare, are also very neat and useful, their weight being perhaps the chief objection to them. For most subjects in baskets, the greater part being perhaps Dendrobiums, good moss and peat with a little coarse silver sand will be the best material that can be used. A good supply of moss and peat should be got in the autumn, as the increased demand in the early spring makes it often very difficult to be obtained. When the baskets and pans have all been gone over, it will be necessary to turn to the East Indian house, and give such things as Aerides, Vandas, Saccolabiums, &c., immediate attention. Before commencing potting, have a good supply of clean pots and crocks at hand ; the larger the latter the better they can then be broken, and used as each plant is potted. This matter of crocking is often left in the hands of one of the under men, whose knowledge of the requirements of the individual species is as yet but small, and consequently is done in a very unsatisfactory manner. I advise that all who have the responsibility of potting a collection of Orchids should keep the crocking under their immediate and direct supervision, or, what is far better, do it themselves, for more depends on the crocking than is often admitted. In crocking, a pot should be inserted upside down in the pot in which the plant is to be placed, but this smaller one, which is generally put in and left so, I recommend to be placed on three small pieces of crocks with rim-edges to them ; the inside pot, inverted on these, lifts it from the bottom of the larger one, and thus permits the free escape of superfluous water, at the same time washing out all the fine soil that otherwise collects on the bottom of the pots ; a small amount of air is also thus permitted to pass into the soil and amongst the roots (the more especially if, when the plant is potted, it is stood up on three small pots on the stages or side-shelves). Around this inverted pot place enough crocks of good size in an upright position, according to the depth of the ball of the plant to be potted ; a layer of moss should be placed over the crocks, and in potting use some crocks among the soil, which should also be put in edgeways ; it is then much easier to stake the plants, and the roots delight as soon as possible after starting into growth to come in contact with some hard substance, such as crocks, charcoal, &c. Be careful to pot and stake firm, at the same time make it a point to keep the plants as light as possible, a sure proof of good and open crocking and careful making-up. *W. Swan, Fallowfield.*

FRUIT HOUSES.

ORCHARD HOUSES.—Where these structures are heated, the Vines, Apricots, Peaches, and Nectarines will now be swelling their blossom-buds and shoots, and in favourable weather plenty of ventilation must be given, and daily syringings till the blossoms open. When the trees are in flower it is requisite to resort to artificial means for fertilising the blossoms, and this can be done when the trees are in pots, by shaking them gently by the hand or tapping the pots with a stout stick to distribute the pollen. A few of the shy-setting sorts may be gone over with a small camel-hair pencil, or dusting the pollen on the stigmas by drawing the anthers together by the thumb and forefinger. If Cherries are desired to be grown early in pots they may be introduced now, but they do best in a house by themselves, where plenty of air can be given at the setting period. If perfect success in orchard-house culture is desired the artificial heating of such structures is essential ; however, to make the most of unheated houses they should be now freely aired, that the trees may be kept as backward as possible, for the later they are in flowering there will be less danger from the spring frosts injuring the blossoms. This particularly applies to Apricots, Peaches, and Nectarines, they being naturally the first trees in blossoming, and their being a week or two later in setting makes all the difference between a good and bad crop. If the trees are growing in pots they will only require watering when the balls of earth seem getting too dry, so as not to excite them too fast. Apples, Pears, Plums, and Cherries in pots may still be left out-of-doors, so as to keep them as backward as possible. See that all the pruning, painting the trees with the Gishurst mixture, and top-dressing the surface of the pots is done before the buds begin to swell. This is best done just before the trees are taken into the house, as they can be better done in the open air, with plenty of space in which to operate upon them. *William Tillery.*

MELONS.—Directions given in my last having been followed, the first batch of young plants will soon be showing the rough leaf. If intended for planting out in pits the mounds should now be formed for their reception ; meantime, if the seeds were sown singly in small 60's, the plants may receive a slight shift, and be replunged in a bottom-heat of 85° near the glass until the hills are thoroughly warmed through, when they may be planted out. If, on the other hand, they are to be grown on in pots, which is by far the most satisfactory way of producing finely-flavoured early Melons, the fruiting pots should be placed in position, and filled with the compost recommended in my last Calendar. The soil having been previously warmed, it should be firmly rammed into the pots, leaving sufficient space for a good top-dressing and liberal waterings. Plants grown in this way should not be stopped until the side shoots begin to show fruit, when the point of the vine may be taken out. A good set is sure to follow, and if watering is judiciously managed, deep-fleshed well-flavoured fruit may be depended upon. Collect manure for pits, and pay special attention to the sweetening process, otherwise disappointment will follow. Make frequent sowings at this early season ; it is better to have a few plants to spare than to feel the want of them. *W. Coleman.*

STRAWBERRIES IN POTS.—Considerable trouble is sometimes experienced to get the most advanced crop of these to set satisfactorily. No variety, however, is more free in this respect than the old sterling sort, Keens' Seedling, for the first crop. As soon as the plants commence flowering place them so as to have the full benefit of light, air, and sunshine. An occasional shake by the hand of the flowers when in bloom will tend to assist fertilisation. After they are set, apply weak guano or manure-water on every occasion of watering until the fruit begins colouring, and see to this matter being done regularly, as aridity of the soil in the pots is most ruinous at this stage of growth. If flavour is of the first importance more time must be allowed for them to finish. No more air will be necessary to this end ; otherwise for the purpose of having them ripe as early as possible place them in a fruiting Pine-stove, or where a similar temperature is maintained. Continue, as requirements need, to introduce fresh supplies of plants into a suitable places for starting them—from 55° to 56°, according to the state of the weather, will suffice. Now is a seasonable time for starting Sir Charles Napier, Sir J. Paxton, and similar large showy kinds. *G. T. Miles, Wycombe Abbey.*

HARDY FRUIT GARDEN.

The late severe weather has been very serviceable in the way of retarding the expansion of the bloom of Apricots, the pruning and fastening of which to the walls should have immediate attention. If the necessary pinching and stopping has been carefully attended to during the summer and autumn, the principal pruning required now will be the removal of all dead spurs and immature growth, and any very weak branches ; bearing in mind, however, that the tree, when finished, should be regularly furnished, but that the branches should not be too much crowded, therefore, as weak shoots are often the best fruit producers for one season, those only should be removed which are not required to keep the tree evenly furnished. Take care to have protecting materials at hand when the necessity for them occurs. In such favourable weather as we have lately experienced the dressing of wall fruit trees should have been persevered in as fast as the pruning is completed, so that all may be in readiness for training out in suitable weather. The preparations for planting fruit trees where circumstances have compelled the planter to defer what ought to be done at the fall of the leaf should be followed up, and the planting finished off as soon as possible, and the trees well mulched. The pruning of Peaches should not be delayed much longer ; as soon therefore as the buds are sufficiently swelled to indicate which are the bloom-buds, the necessary pruning and shortening of the shoots may be at once commenced. The appearance of the trees at this season will at once indicate the requisite pruning. If very vigorous, and the wood fruitful and well-ripened, it may be laid in rather liberally, and left at greater length, as we can always regulate the amount of fruit ; but if weakly, the wood must be much more thinned out, and the shoots more severely shortened. This condition is often brought about by over-cropping, which should always be avoided, and such trees can only be brought back into a state of vigour by encouraging the growth of wood and severely repressing the production of fruit. *John Cox, Radley.*

HORTICULTURAL EXHIBITIONS, 1876.

FEBRUARY.

16.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.

MARCH.

1.—Royal Horticultural Society, South Kensington, Meeting of Fruit, Floral, and Scientific Committees.
14.—Manchester Botanical and Horticultural Society. Floral Meeting at the Town Hall.
15.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees. Spring Show.
15 and 16.—Leeds Horticultural Society. Spring Show.
22 and 23.—Bristol, West of England, and South Wales Chrysanthemum Society's Spring Show.
29.—Royal Botanic Society, Regent's Park. Spring Show.

APRIL.

5.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees
5.—Royal Caledonian Horticultural Society's Spring Show.
19.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
25.—Manchester Botanical and Horticultural Society. Exhibition of Auriculas, &c., at the Town Hall.
26.—Royal Botanic Society, Second Spring Show.
27.—Royal Horticultural Society of Ireland. Spring Show.

MAY.

3.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
17.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.

THE

Gardeners' Chronicle.

SATURDAY, JANUARY 29, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	Jan. 31	Sale of Orchids, at Stevens' Rooms.
WEDNESDAY,	Feb. 2	Sale of Roses and Camellias, at Stevens' Rooms.
THURSDAY,	Feb. 3	Meeting of the Linnean Society, at 8 P.M. Sale of Lilium auratum, at Stevens' Rooms.
SATURDAY,	Feb. 5	Sale of Hardy Ornamental Trees and Shrubs, at Stevens' Rooms.

IT is time the gardening fraternity began to decide upon some plan of action with reference to the ensuing annual meeting of the ROYAL HORTICULTURAL SOCIETY. That meeting will probably be a stormy one, with plenty of fierce recrimination; not improbably it will result in the retirement of several members of Council, and the filling up their places by South Kensingtonians. They have wealth, they have energy, but they lack sympathy with the objects of the Society, and they are as a class profoundly ignorant of the subjects with which, if they are to be the leaders of the Society, they ought to be familiar. Bankruptcy stares, and has stared, the Society in the face for a long while; it can hardly be long before it takes more decided action. Is it then of any use to try and bolster up the ricketty frame any longer?

Why not let it fall, and with the pieces shape on a wide, popular basis a national Society, which shall be in very deed a horticultural Society? Some such ideas must have presented themselves to most onlookers. Prospects of reform and renovation appear utterly hopeless under present auspices. Tied and fettered in all ways by conditions and agreements, distracted by internecine conflicts, the poor old Society can do nothing—cannot even die.

It is this fact which renders the problem so difficult of solution. Suppose all the horticultural members of Council retire; suppose all the working element of the Society secede; suppose a majority of the Kensingtonians, disgusted at the loss of their privileges, and at the manner in which the gardens at Kensington are kept up, retire—suppose all these things to happen, and bankruptcy to ensue, still the Society cannot die. It will still be the Royal Horticultural Society. It has long been pretty much in the position of the tragedy of *Hamlet* minus the "Prince of Denmark," and yet it goes on, and would go on, and no body of seceders could assume the title and its attendant prestige—yes, *prestige*, for it still has some. Cannot that little be judiciously utilised in promoting the euthanasia? Cannot a little chloroform be administered in the shape of an Act of Parliament and the withdrawal of the Royal Charter while the amputation takes place between the necrosed Royal Commission and the still vital Royal Horticultural Society? But in whatever way the end comes, let us be bestirring ourselves to meet it. If a separation between the two discordant elements can be effected, and the gardeners can have their own society, with the title and all thereto belonging, and leave the Kensingtonians in possession of the garden at Kensington, well and good. If not, we own we see nothing for it but wholesale secession of the gardening element with a view to a *redintegratio amoris* under more favourable auspices.

In connection with this subject the following letter, from Sir DANIEL COOPER, a former member of Council, and a valued and trusted friend of horticulture, has been handed us for publication:—

"I retired from the Society some time ago as I saw it was utterly useless to belong to it, as it was doing little or nothing to promote botany or horticulture, and I had done all I could in what I considered the right direction to reorganise the Society. What I considered the right direction was for the Society to get rid of the South Kensington Gardens, and in doing so to induce the Royal Commissioners to secure the debenture holders from loss, to allow the life members (whose subscriptions have been spent in bricks and mortar) to compound their claims, and to pay the debts of the Society, so that it should not terminate its career with disgrace.

"The Society could then be started afresh, and could treat for the use of its present offices and reading room, and space for exhibitions during the season in the gardens under tents—this could be done for a small rent. The Council of the Society would then only have to trouble itself with the duties proper to such a Society, viz., the different exhibitions during the London season, and the monthly or fortnightly scientific meetings, and the distribution of the latest information and discoveries in botany and horticulture. A series of country exhibitions should also be undertaken each year, so that the country subscribers might have the same benefit from the Society that the London subscribers have.

"In fact, the Society should be to horticulture what the Royal Agricultural Society is to agriculture.

"The proposed scheme of raising the income to £10,000, &c., is quite as bad as preceding agreements, if not worse. If signing agreements will give income, you had better at once make it £20,000, for there is nothing attached to the agreement to induce any one to join the Society. With large privileges the members were decreasing, yet with less privileges you expect to increase the number of subscribers, and you are driving away members, like myself, who are ready and willing to subscribe for the real objects of the Society by imputing to us that they only wish to keep the Society for the sake of the gardens; all our acts and statements are put down as merely selfish—'Oh! he is a Kensingtonian.'

"It will only be a waste of time, of temper, and of money, to try and carry on the Society as a catspaw of the Royal Commissioners; the connection must be severed, and it will be for the benefit of both when that time comes.

"Every real friend of the Society will agree with me in this opinion, I am quite certain.

"You can make what use you like of this letter." *Daniel Cooper.*

WE have received from Brussels the programme of the intended Congress of Garden Botany to be held in conjunction with the International Horticultural Exhibition to be held in that city on May 1. The Congress is appointed to meet on that day under the auspices of the Federation of the Horticultural Societies of Belgium. When we remember what has been done on former occasions, and when we see the names of CANNART D'HAMALE, LINDEN, Count KERCHOVE DE DENTERGHEM, KEGELJAN, and MORREN as those of the leading members of the committee, we have good grounds for assuming that the affair will be as brilliantly carried out as on previous occasions. One main object of the Congress is to devise measures for the publication of a HORTUS EUROPÆUS, or systematic catalogue of all plants cultivated in Europe. Gardeners can furnish the material, botanists can work it up into useful shape.

The census of particular orders should be entrusted to botanists who have made those orders a special study, assigning say to Professor REICHENBACH the Orchids, to Professor MORREN the Bromeliaceæ, to Mr. BAKER the Lilies, and so forth. An idea of this kind has long floated before the gardening mind. The veteran Professor KOCH called attention to it at the London Congress ten years ago, and his paper will be found in the Report of the Proceedings, p. 188, and in abstract at p. 21 of the same volume. We have often adverted to the subject, and pointed out the great facilities for compiling a work of this kind at Kew, where material of all kinds, admirably sorted and in excellent working order, exists already. But wherever or whoever does the work, the boon will be immense, if it be only fairly well done. We shall have more to say on another occasion as to the requirements of horticulture and botany in this matter, and as to the most likely way of fulfilling them in a satisfactory way. Meantime, we must pass on to the second item in the programme before us, and which is a proposal to draw up a programme of such experiments and observations as can be made in gardens, and which are likely to be of the greatest value and importance in furthering the progress of vegetable physiology, its practical applications to cultivation being, we presume, specially borne in mind.

The committee invite the expression of opinion and suggestions on these important matters; and we, for our parts, shall, as far as space will allow, be glad to afford the opportunity for their discussion. In the meantime we may cordially thank our Belgian friends for this new proof of their good feeling towards horticulture and its promoters.

ALMOST equally favoured in its climate with the Lago Maggiore, of which some mention has lately been made in these pages, and in the opinion of some persons even more lovely in its surroundings, is the neighbouring LAKE OF COMO. Our illustration (fig. 27) is from a garden near Bellagio, perhaps the most charming spot on the whole lake. The plants which thrive there are much the same as in the Borromean Isles, of which mention has already been made. How effective Dracænas and Yuccas, Palms and Colocasias are with a background of mountains, is seen in the cut. We think we could well spare the vulgar-looking "kiosque;" but tastes will differ on this point. Camellias thrive hereabouts with wonderful luxuriance; indeed, it is from this neighbourhood that the English and Belgian nurseries are largely supplied. Another indication of what the summer heat must be is afforded by the rich cobs of Maize hung up to dry beneath the projecting eaves and gables of the cottages. In the Valais and other parts of Switzerland in October these were beautiful in their contrast with the rich brown hue of the woodwork against which they hung, but in point of luxuriance, size, and colour, they were as nothing compared to the ears which hung by the whitened walls under the eaves of the cottages at the foot of the Alps on their southern side.

—— We are requested to state that the WHITLOEF CHICORY exhibited at the last meeting of the Fruit Committee (see *Gardeners' Chronicle*, p. 118) was from the Royal Horticultural Society's Garden, Chiswick, and not from Messrs. CARTER & Co., as stated.

—— The details of the opening ceremonial at the ROYAL AQUARIUM AND SUMMER AND WINTER GARDEN at Westminster, on Saturday last, have been so abundantly given in the daily papers that we need say no more than that the proceedings were quite successful, and that at the close H.R.H. the Duke of EDINBURGH sent for Mr. JOHN WILLS and highly complimented him on the success of the floral decorations executed by him for the occasion. Mr. WILLS had certainly done wonders in the short space of time allowed him, and excepting the dusty appearance of the larger plants, which was inevitable, everything looked remarkably well; and when the larger Tree Ferns, Palms, &c., that are planted out become established, the artist's work will appear to much greater advantage than it does even now. The Royal box and retiring rooms were lavishly decorated with the finest flowers that could be got, while the surface of

FIG. 27.—VIEW IN THE GARDEN OF THE VILLA MELZI, LAKE OF COMO.

the beds, in which for the most part handsome foliage plants are permanently planted out, were beautifully clothed with Selaginella, mixed with dwarf flowering plants, amongst which Lily of the Valley figured most plentifully. Altogether, we believe, about £5000 worth of plants were used. The other features of the place concern us but little, but we cannot refrain from congratulating Mr. W. EDGCUMBE RENDLE on the success of his patent system of glazing, which has been adopted for the roofs over the two central promenades, which are semicircular in form, and chiefly constructed of iron and glass. On Mr. RENDLE'S system of glazing, which is known to most of our readers, all perishable materials, such as iron, wood, paint, &c., are completely covered by the glass, and are thus protected from the destructive influence of a bad atmosphere, rain, and smoke. No putty or any other perishable cement is used, and expensive bent or curved glass is entirely dispensed with, the roof being composed of the ordinary straight sheet glass. The roof was very severely tried on more than one occasion during its construction, and proved quite equal to the strain put upon it, not a pane of glass being shifted, or the slightest amount of drip being observable. Those who remember the simple grooved bricks and sliding glass which Mr. RENDLE introduced into our gardens only a few years ago will be surprised, when they visit the Royal Aquarium, to see what a mountain has sprung up out of a very modest molehill.

—— We have received the schedule of prizes offered by the ROYAL AQUARIUM and Summer and Winter Garden Company, Westminster, for four exhibitions to be held during the season in the fine building opened on Saturday last. For the exhibition on April 12 and 13 there are thirty-one classes, amongst which we note a 1st prize of £12 for twenty standard Azaleas, and a similar sum for fifty Cyclamen persicum; £7 as a 1st prize for twelve forced Rhododendrons, and £8 for six Orchids (amateurs and nurserymen), and for three plants of Cœlogyne cristata. On May 10 and 11 the leading 1st prizes are—£25 for twelve Roses in pots, open; £10 for six Roses in pots, amateurs; £18 for twenty Roses in 8-inch pots, open; £12 for twelve new and rare plants; £12 for twelve distinct Dracænas, nurserymen; £10 for eight Gold and Silver Tricolor Pelargoniums. The show on May 30 and 31 ought to be the best of the season. There are seventy-two classes, and the highest prizes offered are £50, £30, and £20, in a class for twenty Orchids, distinct, amateurs. The competition for these handsome sums should prove an exhibition in itself. Amongst the other chief prizes are £25 for twelve stove or greenhouse plants, and £15 for eight of a similar kind; £20 for twelve Orchids, nurserymen; £12 for eight Orchids, twelve new plants, eight greenhouse Azaleas, eight show Pelargoniums, nine fine-foliaged plants, four Tree Ferns, &c. On July 5 and 6 Roses will be the great feature, the highest prizes being £10 for seventy-two single trusses, forty-eight varieties, three trusses of each, and forty-eight single trusses, amateurs, and twenty-four Roses in 8-inch pots. Four prizes of £25, £20, £15, and £10 respectively will be awarded at this show for dinner-table decorations. For the exhibition of fruit on October 4 and 5 there are sixty-eight classes, the prizes in all cases being very liberal. Six classes are provided for exhibitors from the Channel Islands and English fruiterers who cannot compete in any others.

—— M. LINDEN announces that the English edition of the ILLUSTRATION HORTICOLE will, henceforward, cease to appear; but the French edition, which fully maintains the high reputation it has for a long time enjoyed, and which circulates extensively abroad, will be continued, and in future will be substituted for the English edition, in cases where he is not advised to the contrary. It is now, he says, the object of further improvements, and special care and pains are taken to render the coloured plates as near perfection as possible.

—— Already the tips of the GOLDEN VARIETY OF SEDUM ACRE are beginning to show themselves. This plant, so useful for spring decoration, loses its yellow colour as the season advances, though the plant never has the vigour of the type. Microscopical examination shows that the yellow colour is due to the relative absence of green colouring matter or chlorophyll. There is plenty of this even at this season in the sprouting leaves of the green-leaved form, but it is nearly absent in the golden variety. What the cause of this temporary deficiency is we do not know.

—— Mr. ROBERT BAKER, late gardener to Sir W. H. HUMPHREYS, Penten Lodge, Andover, and previously to Lord ASHBURTON, The Grange, Arlesford, has been appointed head gardener to C. KIPLING, Esq., Highlands, Jersey.

—— The MEDALS AND DIPLOMAS awarded at the COLOGNE EXHIBITION are now being distributed. We have seen that which has been forwarded to Messrs. WEEKS & Co., of Chelsea, by whom the exhibition buildings were heated. It is a very handsome Gold Medal, bearing a profile of the Crown Prince of Germany; while the Diploma recording the purpose of the award is a large sheet, most elaborately got up, and bordered by views of different departments of the show. One thousand marks were also allotted to this enterprising firm for the part they took in the exhibition.

—— It was a favourite saying of the late Mr. GEORGE LIGHTBODY, that the opening days of the month of February brought in the time when the cultivator of AURICULAS should set his plants to work. What he intended to convey was, that growth in the plants began to manifest itself, and the cultivator should second this effort of Nature to the utmost of his power. It is now that the judicious cultivator can adopt measures that tend greatly to enhance the value of the head of bloom that will by-and-by reward his efforts. When the activity of growth sets in at this season of the year the plants throw out small rootlets from the main stem near the surface of the soil, and these greatly assist the plants. The provision of new soil, or "top-dressing" as it is termed, is an important matter, and it should be done during the early days of February. An inch or so in depth of the old soil should be removed, carefully avoiding inflicting any injury on the young roots near the surface, and in its place should be put a rich compost, made up of fibry loam, decayed cow or stable manure, and leaf soil. It is always well this should be frequently turned and sweetened before using. Into this invigorating soil the young roots soon find their way, to the great advantage of the plants. Some Auriculas thrust themselves rather up out of the soil, and in these cases it is well to build the added soil up round the stems, cone-fashion, but leaving space round the circumference of the soil to give water: moderate supplies of water will be necessary, to be added to or diminished as the weather becomes warm and open, or dull and damp. It is not at all unusual for some of the plants to begin throwing up their flower-stems, and these afford a weak point of attack for frost, and the plants should be additionally protected when severe frost is apprehended. Dry cutting winds are also injurious, and when air is given to the pit or house containing the plants, the lights should be so adjusted as to break the force of intrusive rude winds. As a general rule Auricula cultivators hold the opinion that a fine head of bloom is incompatible with a tendency to break into increase, and so in the act of top-dressing all embryo off-sets are rubbed off. The idea is to concentrate the energies of the plants on the production of fine flowers. Hardy Primulas, to bloom in pots, such as P. intermedia, nivalis, denticulata, integrifolia, and others, are now becoming active, and the top-dressing process if applied to these results in great benefit to the plants. There is no class of plants possessing a greater interest for lovers of flowers than these early blooming Primulas when grown in pots, to flower in March, and protected during the winter; and they can thus be made the precursors of the floral wealth that is so lavishly scattered over the face of the earth in the opening spring-time.

—— As this is the season of the year for PRUNING GOOSEBERRY TREES, it should be borne in mind that there is a material difference to be observed in the pruning of those trees upon which it is intended to grow large fruits for exhibition and those from which fruits for the dessert or culinary purposes only are required. One of the leading exhibitors in the North thus sets forth the practice for pruning the trees the fruit of which are required for show:—"Not nearly so much wood should be left upon the trees when good fruit are wanted for the exhibition table. Indeed where large fruit is desired no weak shoots whatever must be allowed to remain upon the plants, and the strongest should be shortened to within 5 or 6 inches of the wood of the previous year's growth. The superabundant should be taken off in such a manner as that the strong ones shall be left at regular distances from each other, and if of these many are suffered to remain the plant will become overcrowded with foliage and new wood, and the fruit will therefore be deprived of the needed amount of light and air." Show Gooseberry trees are generally trained and pruned horizontally, and this form is advantageous, inasmuch as the fruit hangs clear of the branches, and is consequently not liable to be bruised, which would be the case if it were grown upon upright branches. Trees for ordinary purposes merely require thinning, and to be trimmed into a suitable shape, say hemispherical. The operator must never forget that light and air are primary agents in the production of fine fruits, and that unless the branches are kept at such distances from each other as will allow, when the foliage is fully formed, of the complete exposure of the berries to their influences, the crop will be inferior in quality and insignificant in quantity. While thinning, in all cases prune to an outside bud, and do not cut all the shoots clean off, but leave about half an inch at the bottom of some to form what are called "fruiting spurs," by which means considerably more fruit will be gained. The leading points of excellence which belong to the show Gooseberry are, as generally acknowledged, a smooth and thin skin, round form, sweet luscious pulp, long thin stalk, large size, and small "nose," *i.e.*, the decayed blossom. As to colour, red is esteemed first, yellow second, green third, white last. With show Gooseberries, weight, and not beauty, is the object. A Gooseberry that is considered "a little rough" is not considered imperfect at an exhibition where the awards are given for the heaviest berries; but where handsome berries are required this roughness is considered an imperfection. The top of a berry is the end next the stalk.

—— LEUCOPOGON LANCEOLATUS is one of the best greenhouse plants for yielding small sprays of white flowers for buttonholes and other cut purposes. It is now coming into flower in the conservatory at Kew. In habit it may be described as a small twiggy shrub; the leaves are lanceolate, of small size, but numerous, and all the upper ones on every branchlet have little spikes of small white flowers in their axils. It is a native of New Holland.

—— In vol. vii. of the *Transactions and Proceedings of the New Zealand Institute* Mr. JOHN BUCHANAN publishes a new list of the FLOWERING PLANTS AND FERNS OF CHATHAM ISLANDS. In 1864 Baron MUELLER published a florula of these islands, wherein he enumerates forty-two dicotyledons and twenty monocotyledons. Mr. BUCHANAN'S list comprises 109 dicotyledons, forty-nine monocotyledons, and forty-seven Ferns and allies, making a total of 205 species. Of these 205 the following thirteen are at present not known beyond the Chatham Islands:—Geranium Traversii, Aciphylla Traversii, Ligusticum Dieffenbachii, Olearia semidentata, Senecio Huntii, Olearia Traversii, Cotula Featherstonii, Cyathodes robusta, Myrsine chathamica, Myosotidium nobile, Veronica Dieffenbachii, V. chathamica, Sporodanthus Traversii. It will thus be seen that the vegetation of the Chatham Islands exhibits no peculiar features when contrasted with that of New Zealand. With the exception of Myosotidium and Sporadanthus all the genera of the endemic species are also represented in New Zealand.

—— Mr. T. F. CHEESMAN describes a NEW SPECIES OF SENECIO, native of New Zealand, in the *Transactions of the Institute*, the beauty of the flowers of which, he says, will doubtless obtain it a place in both Colonial and European gardens. Senecio myrianthos, its discoverer and describer states, is a most charming plant, covered, when in bloom, with large, deliciously sweet-scented white flowers. It is a slender, sparingly branched shrub, or small tree, with purplish black bark. Young leaves and branches covered with a thin buff tomentum. Leaves 4 to 5 inches long, membranous, ovate, or ovate-lanceolate, acute or acuminate, generally unequal at the base, sharply and coarsely doubly serrate when adult;

glabrous above, but covered beneath with a thin silvery white tomentum. Panicles terminal, leafy, often over 2 feet long. A native of Cape Colville Peninsula, Northern Island. This is evidently a very handsome greenhouse shrub, and there are many other New Zealand plants deserving of a wider acquaintance.

—— The annual exhibition of the Ealing, Acton, and Hanwell Horticultural Society will take place on Tuesday, July 11, in the grounds of Ford Hook, Ealing, the residence of GEORGE TYRRELL, Esq. Mr. RICHARD DEAN has just been appointed secretary the Society.

—— According to the annual statistics of the Austrian Minister for Agriculture for 1874, the total production of WINE in the empire (excluding Hungary) was 5,580,229 kilderkins; of olive oil, 480,135 cwts.; gourds, 2,183,754 cwts. Dalmatia furnished 58,400 cwts. of Figs. Bohemia is by far the largest fruit-producing country of the empire. In 1874 the total produce of stone and pome fruits is given as 1,428,640 cwts., whereof 1,086,270 cwts. consisted of stone fruit.

—— From the *Monatsschrift des Vereines zur Beforderung des Gartenbaues*, in Berlin, we learn that the Society has received notice to vacate the land used by them as a trial garden at the end of the present year. The present garden dates only from 1858, and now again it becomes necessary to retrench as much as possible to meet the expenses of another removal.

Home Correspondence.

Veronica Andersoni in Sutherland.—Those who appreciate outdoor flowers in winter should plant the old Veronica Andersoni in a moderately-sheltered position against a wall. Two plants, about 12 feet high, on the terrace wall here bloomed profusely last summer. They commenced to bloom again in November, and have continued in bloom ever since, and apparently will last for six or eight weeks longer, as there is still a good deal of bloom coming on. This makes an excellent companion plant to the Jasminum nudiflorum, the yellow flowering sprays of which harmonise well with the bluish purple flowers of the Veronica, whether on the wall, or cut and placed in a flower-glass. I forward a few sprays, as I dare say you would scarcely credit the fact of the Veronica blooming so beautifully out-of-doors in Sutherland during the winter months. *D. Melville, Dunrobin, Sutherland.*

Notes on Garden Hybrids.—In your issue of January 1, your correspondent, Mr. F. W. Burbidge, under the above heading, solicits at the hands of amateur gardeners and nurserymen information respecting the parentage of garden hybrids, with a view, as I understand it, to its publication and arrangement "in some tolerably complete form, for the information of those who come after us." Such a book, I have no doubt, would prove to be of great interest and meet with a ready sale; but when your correspondent makes such a statements as the following in your journal, the very least that we can expect of him is that he substantiate it through the same medium:—"The Japanese Retinosporas are frequently produced from seeds of Biota orientalis, and another group has been derived from B. occidentalis; and this extreme form of seminal variation, as I take it, can only be accounted for by the supposition that previous hybridisation has naturally been effected among these Thujas or Biotas." It is a pity that such knowledge is confined to the few, and, pleading ignorance, I now anxiously and humbly solicit said information from Mr. Burbidge, trusting that he will not deny me the same. *C. S.*

Outdoor Ice-stacks.—The plan Mr. Penford and Mr. Ward adopted for preserving outdoor ice-stacks (which undoubtedly is a good one), was practised some fourteen or fifteen years ago at the Marquis of Downshire's, Hillborough Castle Gardens, by the intelligent head gardener, Mr. Smith. I served also under Mr. Cope, Mr. Smith's successor, but no out-of-door stack was attempted that year. Mr. Smith generally after filling the ice-house began his outdoor stack (a square one) taking, for one side, an old stone (north) wall which divided the pleasure-grounds from the kitchen-garden, and which was so well shaded with trees that in the middle of the summer the sun's rays could scarcely penetrate through. The process of pouring on hot water to consolidate was used for the ice-house as well as for the stack. No doubt hot-water would be more often used but for the inconvenience of getting it heated, the boiler in many instances being a long way from the ice-stack. A wheel-barrow with a boiler fixed on and a fire underneath is capital for the job. It can be used for many other purposes, viz., for keeping gravel-walks nice and bright, and preventing weeds of any description coming up by simply throwing a few handfuls of salt into it when boiling and pouring on the walks with a can and rose to it, taking care not to get it too near the Box or grass edgings. Sawdust where plenty is at hand makes a good under-coating for preserving an outdoor stack. *H. Russell, The Gardens, Preston Candover, Basingstoke.*

The Limekiln at Hatfield.—May I enquire, through the medium of the *Gardeners' Chronicle*, how the kiln-heating apparatus at Hatfield—to which the attention of the public has been so often directed by the advocates of the system—has done its duty this winter, especially during the late severe weather; or if it is a fact, as I have heard from several sources, that they have discontinued using it there, and returned to the old plan of heating the houses by coal, and an ordinary boiler? *Pro bono publico.*

Square-stemmed Bamboo.—Some time since we called attention to a square-stemmed Bamboo cultivated by the Japanese, and we now copy from the

FIG. 28.—SQUARE-STEMMED BAMBOO.

Revue Horticole a figure of such a plant as given in a Japanese work, consisting of a series of plates of trees and shrubs. It will be noticed that the stem (fig. 28), provided with leaves and the traces of inflorescence, is variegated, or rather, that the half of each internode is coloured darker than the other, the successive stripes of yellow colour occupying now this, now the opposite side of the stem. A square-stemmed Bamboo has been introduced into France, and it is surmised that it will prove hardy; though in the translation from the Japanese work, made by the Count de Castillon, it is expressly stated that the plants must be protected from frost in winter. [EDS.]

Linnean Society.—In looking over your volume for 1846, I find at p. 807 an announcement, copied from a local paper, that Mr. Rudge, of Evesham, left by will to the Society a bequest of £200, the annual interest of which was to be laid out in the purchase of gold medals to be called the Linnean Medals, and to be awarded to the Fellow who shall write the best communication in each volume, each medal to have on one side a profile bust of Linnæus in full dress (!) encircled by his name, and the date of his birth and death. On the obverse is to be engraved the name of the Fellow to whom such medal is awarded, encircled by a wreath of Linnæa borealis? Did the Society every accept the bequest? If so, has this medal ever been awarded? If not, where are the funds? *F. L. S.*

The Trees in Kensington Gardens.—I think it is very probable that the evil described by an "Indian Forester" lies in a small compass, and is the last of the causes advanced by the *Times'* correspondent, viz., the drainage. There is a striking proof of this at Parson's Green, Fulham. Some trees have already been felled, and others are dead and dying. Those on the property of Tod-Heatley, Esq., being lower, have suffered much more than those on the property of W. Terry, Esq., though they are only separated by the road under which the sewer is constructed, and which runs contiguous to a row of trees belonging to the latter gentleman. They have not suffered so badly as have some 100 yards off, which, as I have said, were lower. I may add that at one time these were occasionally reached by the tide working up the ditches which are now filled. Only one opinion has ever been entertained respecting the death of these trees, viz., the deprivation of the moisture they once enjoyed. The Board of Works in the most creditable manner has planted a row of Planes on one side of the road, and these have made growth such as could scarcely be surpassed in the country. Trees are not destined to live for ever, and when an occasional one dies it does not surprise one so much, especially in the neighbourhood of towns; but when a large percentage are found to succumb suddenly, the cause must be of recent creation—not raking away of leaves from the ground, nor smoke coming from chimneys, though they may be counted by the thousand, but lower down at the root we must look for the mischief. Of the raking of leaves I may add that in our well kept English parks this is generally practised, and if it were not, the leaves would be found nestling, at some time or other, under the nearest hedge or fence forced there by the wind. The smoke argument is just where it was, so far as this sudden death of so many trees is concerned. *Cymro.*

Open-air Ice-house.—The idea of forming an ice-stack is a very old one. This is the way in which it was preserved at Shrubland Park, Suffolk, and it was found to keep better than in the ice-house. It was generally covered with straw, thatch fashion, then a layer of leaves. These should not be put more than a foot thick at first, in case they heat. I believe Donald Beaton was the first to practise it there, but it is very probably more ancient than that. The whole affair is simply a question of quantity, and the usual appliances to keep out the heat and wet, with efficient drainage below. *Cymro.*

The Strawberry Grape.—In reply to the inquiry No. 92 in your number of the 15th inst. as to the Strawberry Vine, I beg to say that it is very extensively grown in Italy, and is there reputed to have come from America, and to have been produced from a Vine crossed with the Strawberry. [!!] It is a Grape with a very peculiar flavour, so as to make it either disliked or much liked. The foliage is also peculiar, and quite distinct from the ordinary Vine leaf. I so much appreciated the Grape that I raised some young Vines from seeds gathered from the Italian vineyards in 1874, but of course they have not yet borne fruit. The foliage looks right, and I think the Vines are true. The Grape is densely black, medium-sized, not thick set, and jumps out of its skin into the mouth. It has a very refreshing flavour peculiar to itself, and is free from that luscious sweetness that so palls upon the palate with the ordinary Grape. It makes bad wine, and is grown only for eating. *John M. Malleson, The Hermitage, Higham, Jan. 24.*

Spring-blooming Shrubs.—An important alteration has been made in the Royal Horticultural Society's schedule for the usual March show. Instead of the class for eighteen hardy spring flowers in pots, there are now introduced two classes—one for a group of fifty flowers and shrubs in pots in bloom (not forced), and the other for a group of thirty of the same (forced). Owing to the accelerative powers of heat it is probably less trouble to have shrubs forced into flower by the middle of March than it is to get a good selection naturally in bloom at that time. Much depends, however, on the knowledge possessed of the kinds of shrubs that will naturally flower then, and be at the same time suitable for pots. Will any reader kindly favour me by sending for publication a selected list of such early flowering shrubs. *A. D.*

Limekiln Heating.—As a Grape grower for market, and obliged to meet the excessive competition there is in that branch of industry at the present day, I find my coal bill a very serious item, and would be glad to be able to reduce it to some extent; and, though I never could bring myself to believe that the above system would effect all that Mr. D. T. Fish and others said it would do, still I am prepared to learn that it may effect some saving, and would be very pleased to see a statement on the subject from such as have now had time to test the system. *A Grape Grower.*

Digging Forks.—The round-tined American digging-forks, when first introduced, created almost a

revolution in digging implements, and because of their lightness, elegance, and comparative strength, they have since then enjoyed an almost universal use. Prior to their introduction what frightful implements were in use, heavy, cumbersome, and of soft material that would bend and warp in all directions, and proving instruments of torture to the unfortunate men who had to use them. These were usually made with three thick flat tines, and when new probably weighed from 8 lb. to 9 lb. The change, therefore to tools that weighed on the average about 5 lb. was of necessity a great boon to the labourers, and the present generation has in this respect enjoyed a great advantage over the preceding one. In my own locality, which is fast becoming a market garden centre, the American round-tined fork, however, is seldom seen, and the spade is also a comparative rarity. Here both employer and employed prefer the four flat-tined fork made at the Sutton Works, Birmingham, by Messrs. Parkes & Palmer, and certainly for market garden use I have seen no better implement. Having more metal in its composition it weighs about 6 lb.; it is neatly and even elegantly made, and is admirably adapted for stiff soils, strong work, or for any ordinary garden use. The tines measure 13 inches in length, and 9 inches in breadth; it therefore covers a wider breadth of soil than other implements, and, because of the flat and evenly set form of the tines, does its work as clean and much easier than a spade; they are less liable to snap suddenly than are the round-tined forks, and admit, if needed, both of mending and resteeling much more readily. *Alex. Dean, Bedfont.*

Hardy Palms, &c.—Please allow me to inform Mr. Owen Lloyd (Anglesea), p. 115, that all my notes in the Calendar are founded on my own practice, and all operations there advised to be done are such as have been or are about to be done in the gardens under my charge. It being optional for Mr. Lloyd and others to accept or refuse what I advise, I cannot conceive in what way I cause him or other gardeners injury by what I write there: certain it is that I would not willingly injure either him or any one else. But I still stick to my text, and for Mr. Lloyd's comfort inform him that, notwithstanding the inferiority of the climate of North Hants to that of Anglesea, we have Palms—Chamærops Fortunei and C. humilis—10 feet high and nearly as much through, that have not even had the protection of a mat for the last six years, and which yet are in the most robust health and vigour. Aralia Sieboldii is at this moment in full flower, and has as yet had no protection; Phormium tenax is as hardy as a Cabbage; Dracæna indivisa (not Cordyline), D. indivisa lineata, and Dracæna erythrorachis stand the winter here with but slight protection. In the summer of 1871 I planted out from a 32-sized pot a small plant of the first-named variety, and protected it the first three years, but by way of testing its hardiness I last winter left it unprotected, and, being extra severe, it was killed to the ground, but new growths pushed from the roots; when cut away the stem was 6 feet long, thus showing what extraordinary growth such plants make when planted out. In conclusion, I may add that the list of these plants Mr. Lloyd himself gives as being nearly hardy in his district justifies my recommendation in the Calendar, viz., to "tie up the foliage, and by wrapping mats round them protect such." *W. Wildsmith, Heckfield.*

Veitch's Autumn Giant Cauliflower.—I cannot refrain from adding another fact regarding the value of Veitch's Autumn Giant Cauliflower to those already given. I had it in use up to mid-winter; indeed, I only used the last on Christmas Day, and the crop throughout the late autumn up to that date was remarkably good. The somewhat sharp frost we experienced about the end of November did not injure the heads in any degree, and this no doubt was owing to the very large heads of leaves which so closely protected the more delicate bloom-heads. If my experience with it thus far does not prove very exceptional, the day cannot be far distant when this valuable Cauliflower will supersede the more expensive (as regards the price of seeds) and less reliable, though when grown true and well valuable, Snow's Winter White Broccoli. Successional transplanting seems alone necessary—always in the best of soils, however—to insure these early winter supplies. *William Earley.*

Mistleto on the Azalea.—I do not think I ever heard of the Mistleto growing on the common Azalea anywhere except here; the plant was first of all noticed about ten years ago, and it keeps on increasing every year. I should judge it to be about fifteen years old, but how it came there no one knows. There is a good deal of it in the Poplar trees in the park, and I believe the berries are eaten by birds in severe weather and that the seed passes through them uninjured and occasionally falls on a congenial place, when it grows. I see no other way in which three separate trees here could have each of them one bunch growing at 50 feet from the ground. There is a pond near the Castle wherein are kept gold and silver fish: a good many years ago their numbers seemed diminishing rather than otherwise; it was resolved to draw the water off, when—lo and behold!—a fine, fat young jack was found. This solved the mystery, for he was living in clover and the supply was not equal to the demand. The park-keepers were sorely puzzled to know how he came there; since that time I have read in Kirby and Spence's book (I think), that the spawn of fish will pass through certain birds uninjured, so no doubt this was the case here, and that some heron had brought the spawn in his stomach from the lake in the park half a mile distant. *J. Rust, Eridge Castle, Tunbridge Wells.*

Vine Tendrils.—May I ask if Mr. Fish drew his figures of Vine tendrils in last week's *Gardeners' Chronicle* from Nature?—because, with the exception of fig. 1, they are unlike any Vine tendrils I, or any one else I should imagine, ever saw. The branches of a tendril push forward in the same direction as the branches or spurs of the bunch, and the bunch itself; but Mr. Fish has shown them pushing in the opposite direction—*i.e.*, the cleft formed by the split pointing backwards, which is wrong, and rather inexplicable from one who professes to notice trifles that no one else does. He tells us that probably thousands of gardeners have "failed to notice" that the little "scale" (which would be more correctly described ss a "shield") attached to the base of one of the limbs of a tendril is the "signal of difference" between the two, and evidently looks upon the fact as of the utmost significance. Has Mr. Fish himself never "noticed" that tendrils frequently develope more than two arms alternately along the main limb, and that each has the little "scale" attached to it? And further, should the tendril terminate in a bunch, that the "scales" are continued upon each spur of the bunch to its extremity? The simple fact of the matter is (regarding a tendril as an imperfectly developed bunch), that the scales denote what would otherwise have been a flowering spur of a bunch in a fruitful Vine, and nothing more, although when a bunch does degenerate into a tendril it is sometimes difficult to tell which are the spurs and which the footstalk, as when the longest limb catches hold of a wire or other support the other branch will spin forward till it gets hold of something also; but the scales will always be found alternating, just as in the bunch. In some varieties of the Vine these shields are very large and noticeable when the embryo bunch is pushing out, and project over the flower-buds exactly in the same manner as the shields attached to a bunch of Bananas do. Herewith I send you bunches and tendrils of various shapes and sizes, which illustrate and confirm this view of the case. Mr. Fish's "weight" theory is, however, original, and I do not think anybody is likely to dispute his priority of practice in tying stones to the tails of his bunches to make them behave themselves. An Eastern traveller relates how the Arabs tied stones to his donkey's tail to stop its persistent braying, but the practice is new in Grape culture, and Mr. Fish's confession that he has had to adopt such subduing measures many times during his experience is not complimentary to his practice. When the bunches persist in running off into tendrils, as Mr. Fish describes, it is a sign that the Vines have just about reached the last stage of exhaustion, and their efforts tendrilwards may be regarded as a despairing attempt to return to the old style, when they travelled, like flies, by means of discs attached to their feet. Mr. Fish's paper is, however, an original contribution to Vine literature. It is encouraging to think that the Vine is a progressive subject, in the Darwinian sense, and it must have been a tremendous bound from a disc to a bunch of Grapes. The great bunches at Edinburgh may be regarded as the latest development in a forward direction, and we may reasonably expect still greater things in the course of time. *An Old Tendril.*

Garden Netting.—I am wanting a very light garden net. A hexagon net, similar to that made some sixteen years since by J. W. Haythorn, of Nottingham, is what I desire, to protect my plants of Carnations and Picotees when removed to their blooming quarters. I am unable to learn if Mr. Haythorn yet lives. Can any of your readers oblige me with the information, or give me the address of a maker of a similar article? *E. S. Dodwell, 11, Chatham Terrace, Lark-hall Rise, Clapham, S.W., Jan. 24.*

Phylloxera vastatrix.—Having seen various suggestions in the public journals for the destruction of this terrible enemy of the Vines, many of which I have tried with little or no success, I take the liberty of drawing your attention to an experiment of my own which has been attended with more satisfactory results. I shall not trouble you with any observations on the insects themselves, but merely point out my present mode of proceeding. In the fall of the year, and while the Vines are in a quiet state, clear away the earth from their stems of and from as many roots as can be conveniently got at; remove the loose underground bark of the Vines and carefully burn it, to destroy the insects and their eggs that adhere to it, frequently in great numbers, and then with a brush apply the following preparation to the roots and stem that have been thus exposed:—Into an ordinary quart wine-bottle put 100 grammes (about 3½ oz.) of finely pounded resin, fill up the bottle with oil of turpentine, leaving a little room for expansion; place the bottle, or as many as you wish to prepare at one time, into a saucepan or other vessel containing water, and heat the water over a fire—a stove with an iron plate is very convenient for the purpose—until it is sufficiently hot to cause the turpentine to dissolve the resin; shake the mixture well and allow it to cool, and it is ready for use. When it is applied allow the mixture to dry on the roots before filling in the earth; the mixture, as it dries, becomes very adhesive, and covers the insects and their eggs with a kind of varnish, which stops all movement in the insects, and prevents the development of the eggs, and, as far as my experience goes, does no injury to the Vines. The expense is less than a halfpenny for each plant. This mixture will not attack the origin of the disease, but will keep the insects in check as far as a local application can do so. *T. S. Leacock, Madeira, December 28.*

Tailless Dogs.—In your impression of January 15 "X." seems to doubt that there are a class of shepherd dogs pupped without tails. There is no doubt about it whatever. Where I recently lived (Warwickshire) several of the farmers have shepherd dogs which were pupped tailless; and if "X." is anxious to see such I refer him to a small village, Brandon, a few miles distant from Peeping Tom of Coventry. *H. Russell, Preston Candover, Basingstoke, Jan. 17.*

Eryngiums.—In your, to me, most interesting article on the above genus (p. 76), I see allusion is made to E. ebracteatum—a singular and most interesting plant. I received it under the name of E. eburneum from the Continent two years ago, and it flowered last autumn. Belonging to a section that will not stand our damp, humid and foggy November and December atmosphere—my own opinion coinciding with your editorial remark that the damp is more inimical than the frost—I did not plant it out, but grew it in a 32-sized pot amongst my alpines. It was late in the season before it developed its stem, but in less than six weeks after it commenced it attained a height of 6 feet, very slender, almost devoid of foliage, and terminated in a very lax panicle of flowers chocolate-crimson in colour, forming small heads, and completely devoid of bracts. On referring to the description of the species, I found that it exactly tallied with that given in Persoon for ebracteatum. It of course did not perfect its seeds, but showed signs of renewed growth from below, which augurs well for another season. The only duplicate plant I had of it I sent to Kew about the time it was in bloom. E. platyphyllum grew more vigorously with us during the summer, and at the end of October sent up a stem nearly as thick as my wrist to a height of 2 feet, but, as might be expected, it got "nipped i' the bud," otherwise I am satisfied it is a valuable plant for decorative purposes. Where there is room to grow this and its allied species on in large pots under glass in early spring, hardening them off, and turning them out into a rich bed of compost in April or May, they would form most important decorative features in our gardens. E. corniculatum, a small slender grower, has, in its early stages at least, the fistulose character similar to E. fistulosum. *James C. Niven, Hull Botanic Gardens.*

Flowering of Spring Plants.—At the January meeting of the Edinburgh Botanical Society, Mr. Buchan read an elaborate and interesting paper on the flowering of spring plants. For a period of twenty years the Scottish Meteorological Society had, he said, made it part of their work to collect observations on budding, leafing, and flowering of plants and trees; and it was resolved lately to proceed with the discussion of these observations with the view of seeing what lessons they taught. Previous to commencing this intricate inquiry he, however, had taken the observations made by Mr. McNab, of the Royal Botanic Garden, during the last twenty-six years, and worked out the results for the average dates of flowering of thirty-two species, the deviation of flowering from the average date, and the relative lateness and earliness of the flowering of the thirty-two plants. The six latest springs were 1855, when the flowering was thirty days later than the average; 1870, when flowering was sixteen days; 1853, fourteen days; 1856, thirteen days; 1857 and 1865, each twelve days later. The five earliest springs were 1874, when flowering was 23 days earlier than the average date; 1869, when it was nineteen days; 1851, thirteen days; and 1858 and 1866, each eleven days earlier. The two extremes showed a difference between the dates of flowering in different years of fifty-three days. The longest deviations from the average were before

the equinox. The next point of inquiry was the relations which these effects had to temperature. The mean temperature of Edinburgh fell to its lowest on January 11, when it was 34°.8, and from this point they might assume meteorological conditions commenced which resulted in giving vegetation a start. It was interesting to note that previous to January 11 the weather was usually characterised by a large amount of cloud, but after that day the rainfall became less, and clear weather was experienced with an increasing temperature, resulting from the greater power of the sun's rays. Another question of great interest was the relation of the colour of flowers to their date of flowering. Taking 909 species of the British flora, 257 were found to have white flowers, 238 yellow, 144 red, ninety-four purple, eighty-seven blue, the remainder being green and other colours. Now, of the blue flowers, 16 per cent. bloomed in April; 14 per cent. of the white flowers bloomed in that month, but only 9 per cent. of the reds, the yellows being very close to the latter. It thus appeared that the blues were far ahead of the reds and yellows, the whites being intermediate, and the purples and greens came in between the blues and reds. This indicated the existence of some general law which arranged the flowering of plants in the British flora according to the colours in the spectrum. The last point which he discussed was the relation of the dates of flowering to accumulated temperatures.

The Weather of 1875 in the North.—For the purpose of comparison with meteorological stations in the South, a few notes from the records kept here for the Scottish Meteorological Society may be of interest. I believe, so far as the rainfall is concerned at least, there will be a marked difference between the North of Scotland and the southern and midland counties in England. While floods were prevalent in the South we had magnificent weather in Sutherland, and, taking the year all through, 1875 has been the most favourable season we have had in the North for very many years. The total rainfall for the year was 27½ inches, against 30$\frac{7}{10}$ inches in 1874 and 34$\frac{6}{10}$ inches in 1873. The number of days on which .01 inch or more of rain fell was 157. The heaviest fall in twenty-four hours occurred on July 23, when 1$\frac{1}{10}$ inch fell. The three wettest months were—November, 4$\frac{1}{10}$ inches; January, 3$\frac{7}{10}$ inches; October, 3$\frac{1}{10}$ inch. The three driest were—March, 1$\frac{1}{10}$ inch; May, 1$\frac{4}{10}$ inch; and February, 1½ inch; while June, July, August, and September, gave a steady average of 2$\frac{3}{10}$ inches. The maximum temperature in the shade was reached on July 21, when 78° was registered. The minimum occurred on January 1 at 21¾. The highest reading of the barometer was taken on the evening of March 17, viz., 30 72 inches, cold westerly winds prevailing at the time, with the dry bulb at 36° and the wet bulb at 32°. The lowest reading of the barometer was taken on the morning of January 24, viz., 28.68 inches, a south-east gale blowing at the time, with rain, the dry bulb being at 41° and the wet bulb at 40°. We had no injurious late spring frosts to check vegetation, but suffered a little from south-east and easterly gales about the middle of October. *D. Melville, Dunrobin.*

Rhododendron jasminiflorum.—It is now some years since Messrs. Veitch introduced this charming plant, in fact I may term it the acme of all their introductions, and yet it seems to be little known, especially among the cut flower growers. At this season of the year it is invaluable, its chaste white flowers coming as freely as a Rhododendron ponticum in June. I have grown it for some years past for the best class of cut flowers, and associated with Orchids and other aristocratic flowers its purity stands in bold relief. Under good and proper treatment, half-terrestrial and half-epiphytal, it will flower all the winter, and each umbel contains as many as a dozen flowers, which when cut will last eight or ten days. I had during the cold weather which prevailed in December last to supply a large wedding order at Dundee, and all the bridesmaids' bouquets contained a circle of this lovely gem; I was congratulated upon its arrival, the state of this flower particularly was as good as when seen days before in my establishment at London Bridge, thus proving that, valuable and pure as it is, its keeping qualities render it a boon at this period, when white flowers, forced, so soon decay after being cut. If of interest to your readers, I will with pleasure give my *modus operandi* of culture. *Ransley Tanton, London Bridge and Epsom.* [Please do.]

Law Notes.

SINGULAR ACTION FOR HALF-A-CROWN. — *Patrick* v. *Allen*.—This was an action brought by the plaintiff, a solicitor, against the defendant, one of the tipstaffs of the Court of Chancery. The action was brought in the Clerkenwell County Court on the 12th inst. before F. Gordon Whitbread, Esq., Judge. It appeared from the plaintiff's statement that he and the defendant were next-door neighbours, and that the plaintiff had a valuable Pear tree which overhung the defendant's garden, and that five Pears, which the plaintiff valued at 6*d.* each, had fallen into the defendant's garden, who had thrown them back over the wall into the plaintiff's garden, by which the plaintiff had sustained the loss complained of.

The plaintiff called the defendant's maid-servant, whom he had subpœaned, and she said that by her master's orders she had thrown the Pears back over the wall into the plaintiff's garden. On being asked by the learned Judge why she had not taken them back, she replied that her master told her to throw them over the wall. This was the plaintiff's case.

The defendant said he did not consider he was bound to return the Pears in any other way, as it was not by his fault they came into his garden.

The learned Judge said he was sorry that such a frivolous case had come before him, but having done so, he was bound to say that the plaintiff was technically right, and the defendant technically wrong, and the plaintiff was entitled to the amount of 6*d.*, at which sum the learned Judge assessed the damage, but as the costs of the action would amount to 13*s.* the defendant would have to pay them.

On this the plaintiff said he would be willing to bear one half, if the defendant would pay the other; and this course being adopted, the proceedings terminated.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, JAN. 26, 1876.

Month and Day.	Barometer. Mean Reading reduced to 32° Fahr.	Barometer. Departure from Average of 18 years	Temperature of the Air. Highest.	Lowest.	Range	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity: Sat. = 100.	Wind. Average Direction.	Rainfall.
Jan.	In.	In.	°	°	°	°	°	°			In.
20	29.65	−0.09	46.1	42.1	4.0	43.6	+ 6.4	40.7	90	S.S.W.: S.	0.00
21	29.51	−0.24	46.8	35.6	11.2	40.8	+ 3.5	39.0	94	S.W.: S.	0.43
22	30.13	+ 0.38	39.9	32.3	7.6	36.4	− 1.0	32.7	87	NNE: N.E.	0.11
23	30.28	+ 0.53	43.1	31.5	11.6	37.4	− 0.1	32.6	83	S.S.W.	0.00
24	30.37	+ 0.62	50.1	32.2	17.9	41.7	+ 4.0	38.5	89	S.S.W.: S.: S.S.E.	0.00
25	30.27	+ 0.52	47.1	28.7	18.4	37.5	− 0.3	33.2	85	S S.E. S.S.E.	0.00
26	30.20	+ 0.44	49.3	31.4	17.9	40.5	+ 2.6	38.3	92	S.S.E.: S.	0.00
Mean	30.06	+ 0.31	46.1	33.4	12.7	39.7	+ 2.3	36.4	89	S.	sum 0.54

Jan. 20.—Fine, but very cloudy. Mild and damp.
— 21.—A dull cloudy day. Frequent heavy rain after 1 P.M.
— 22.—A fine day, partially cloudy. Rain fell in early morning hours.
— 23.—A very fine day. Little hoar-frost in early morning.
— 24.—A fine bright day. Light clouds. Mild.
— 25.—A very fine day. Thick fog and slight hoar-frost in early morning.
— 26.—A fine day, partially cloudy. Mild.

—— During the week ending Saturday, January 22, in the vicinity of London, the reading of the barometer at the level of the sea decreased from 30.64 inches at the beginning of the week to 30.10 inches by the morning of the 18th; increased to 30.26 inches by the evening of the same day; decreased to 29.63 inches by the afternoon of the 21st, and increased to 30.42 inches by the end of the week. The mean reading for the week was 30.13 inches, being 0.19 inch lower than that of the preceding week, and 0.21 inch above the average.

The highest temperatures of the air observed by day ranged from 49½° on the 18th to 34¾° on the 16th. The mean value for the week was 44¼°. The lowest temperatures of the air observed by night varied between 25½° on the 16th and 42° on the 20th, the mean for the week being 35¼°. The mean daily range of temperature in the week was 9°, the greatest range in the day being 11¼° both on the 17th and 21st, and the least 4° on the 20th. The mean daily temperatures of the air, and the departures from their respective averages, were as follows:—16th, 29°.4, − 7°.2; 17th, 39°.5, + 2°.8; 18th, 45°.2, + 8°.4; 19th, 42°.8, + 5°.8; 20th, 43°.6, + 6°.4; 21st, 40°.8, + 3°.5; 22nd, 36°.4, − 1°. The mean temperature of the air for the week was 39°.7, being 2°.7 above the average of observations extending over a period of sixty years.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the sun's rays, was 73½° on the 19th. The lowest reading of a thermometer on grass, with its bulb exposed to the sky, was 24½° on the 16th; the mean for the several low readings was 32½°.

The direction of the wind was S.W. and S., and the strength gentle. The weather during the week was somewhat fine and mild, though the sky was generally cloudy.

Rain fell on three days during the week; the amount measured was 0.59 inch.

In England the highest temperatures of the air observed by day was 52°, at Truro; at Brighton 46° was the highest temperature in the week. The mean from all stations was 49½°. The lowest temperatures of the air observed by night was 22°, at Eccles; at Liverpool and Leeds the lowest temperature in the week was 30°; the mean from all stations was 25½°. The range of temperature in the week was the greatest at Eccles, 28°, and the least at Leeds, 20°; the mean range from all stations was 24°. The mean of the seven high day temperatures was the largest at Truro, 48¾°, and the smallest at Norwich, 41½°; the mean average value from all stations was 44½°. The mean of the seven low night temperatures was the smallest at Wolverhampton, 31¼°, and the largest at Truro, 37½°; the general average from all stations was 34½°. The mean daily range of temperature in the week was the greatest at Newcastle-on-Tyne, 14½°, and the least at Norwich, Brighton, Leeds, and Hull, all about 7½°; the mean daily range of temperature from all stations was 10°.

The mean temperature of the air for the week from all stations was 39¼°, being 4° lower than the value for the corresponding week in 1875. The highest was 42¾° at Truro, and the lowest 37½° at Norwich, Wolverhampton, and Nottingham.

Rain fell on three or four days during the week at most stations; the largest fall was at Bristol, 1 inch and six-tenths; at Sunderland but one-hundredth of an inch was measured; at Newcastle-on-Tyne no rain fell; the average fall over the country was eight-tenths of an inch nearly.

The weather during the week was generally fine and cloudy.

Snow fell very heavily at some places on Friday, the 21st inst.

In Scotland the highest temperatures of the air ranged between 52° at Leith and 48° at Paisley; the average value was 50°. The lowest temperatures of the air varied from 23° at Aberdeen to 27° at Greenock, the general average being 24½°. The mean range of temperature in the week was 25¾°. The mean temperature of the air for the week from all stations was 39½°, being ½° lower than the value for the corresponding week in 1875. The highest occurred at Leith, 41°, and the lowest at Dundee and Aberdeen—both 38½°

The amount of rain measured during the week at Greenock was 3 inches, whilst at Aberdeen the fall was to the amount of three-hundredths of an inch only. The average fall over the country was 1¼ inch.

At Dublin the highest temperature in the week was 53½°, the lowest 21¾°, the mean 41¼°, and the fall of rain 0.14 inch.

JAMES GLAISHER.

Enquiries.

He that questioneth much shall learn much.—BACON.

93. BACAXI PINE-APPLE: *C. N.* asks if any one can give any further information respecting the Bacaxi Pine-apple, mentioned with so much approbation in the *Gardeners' Chronicle* for 1854, p. 612.

94. PEARS RIPENING OUT OF SEASON: *C. G.* asks for the cause of his Pears ripening so early this season. His Beurré Rance and Easter Beurré were both ripe two months before their usual season.

Answers to Correspondents.

ALPINE PLANTS FOR POTS WITH DOUBLE SIDES: *W. Wallis.* The following is a list of plants grown in alpine collections that require much moisture, and that would succeed in these pots. To this, however, Gentiana bavarica might prove an exception, as it rarely does well, but in this way it would very likely do so, and is worth a trial. We should also recommend the trial of many others of delicate habit, in some cases without water, and in others reducing the supply in proportion to the requirements of the subject, as, for instance, some of the Androsaces, Saxifragas, and Primulas. Eritrichium nanum in particular is one of the loveliest of all alpines, and no one has yet succeeded in keeping it long. In many cases the sides might be filled with Cocoa-nut fibre or sphagnum. The evils of rapid evaporation, with sudden changes from wet to dry, may be prevented by the use of these pots. They are admirable for the cultivation of sub-aquatics and many bog plants, and for which, when water is to be used, they are best

adapted. Anagallis tenella, Erpetion reniforme, Gentiana bavarica, G. pneumonanthe, Mazus pumilio, Mitchella repens, Myosotis rupicola, Parnassia asarifolia, Pyrola rotundifolia, Rhexia virginica, Selliera radicans, Soldanella alpina.

CAMELLIAS: *A Constant Reader.* We can only suppose that you err in not giving the plants sufficient water after taking them indoors in the autumn. If the drainage is in perfect order, you cannot well give them too much water.

HELLEBORES: *G.* Your hybrid Hellebores present very little variety; indeed we could readily believe them to have all come from one sort. As early-flowering perennials they are desirable and interesting garden plants, but they do not appear to us to differ much in this point of view from H. purpurascens, the flowers being of a dull reddish purple outside and greenish within.

HARTWISSIANA: *Enquirer.* We do not know in the specific instance you mention; but it may be right, as there was a Mr. Hartwiss (not Hartweg) who was the superintendent of a garden at Nikita, in the Crimea.

HEATING: *C. J.* Many thanks. We shall be glad to hear from you.

MILLET: *E. J. L.* No.

NAMES OF PLANTS.—*G. B.* The plant is Heliconia metallica, or a garden hybrid between that and another, perhaps H. psittacorum.—*J. F.* Iris fœtidissima, the Gladwyn or Stinking Iris, lately called "Tichborne's" and "Wagga-wagga" Holly.—*E. Morgan.* Yonr plant is not a Eupatorium, but Stevia salicifolia.

ORYZAS: *S. P.* Your employer probably meant to send seeds of the Canada Rice—Zizania aquatica—but those enclosed in your letter were neither those of an Oriza or Zizania, but probably a Bromus.

OUVIRANDRA: *Brassica.* See p. 138.

PLANES: *Enquirer.* The London Plane is Platanus acerifolia, and that is the tree planted on the Thames Embankment.

SAINFOIN: *S. J.* We cannot speak of our own knowledge, but we are informed on good authority that there is no difference in the growth between French and English saved seed of the common or single variety. There is a material difference, however, in the samples, French seed being always mixed more or less with Burnet. These remarks also apply to the Giant Sainfoin, with the exception that French Giant very often turns out to be untrue.

VINE ROOTS: *G. Gunn.* We can observe nothing to be the matter with the roots sent. They appear to have been quite healthy; they are now of course dried up a little from exposure.

WILD GARDENING: *K. K.* We shall be much obliged for the paper.

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CATALOGUES RECEIVED.—Messrs. W. Smith & Son (35, Market Street, Aberdeen), General Descriptive Catalogue of Vegetable and Flower Seeds, Implements, &c.—Messrs. W. Rollisson & Sons (Tooting, London), Catalogue of Floricultural and Culinary Seeds, Subtropical Plants, &c.—Mr. W. Henderson, (86, Hamilton Street, Birkenhead), Gardeners' Calendar and Catalogue of Garden, Farm, and Flower Seeds, &c.—Messrs. Paul & Son (The "Old" Nurseries, Cheshunt, Herts), Select Descriptive List of Vegetable and Flower Seeds, Potatos, &c.—Mr. W. Bull (King's Road, Chelsea, London, S.W.), Seed Order for 1876.—Mr. J. Baumann (5 and 7, Nouvelle Promenade, Ghent, Belgium), Price Current for 1876.—Messrs. Dick Radclyffe & Co. (129, High Holborn, London, W.C.), Catalogue of Vegetable, Flower and Garden Seeds.—Messrs. Howden & Co. (Post Office Buildings, Inverness), Descriptive Priced List of Vegetable and Flower Seeds, Implements, &c.—Messrs. J. Jefferies & Sons (Cirencester), Garden Guide and General Catalogue for 1876.—Messrs. W. Cutbush & Son (Highgate, London, N.), Catalogue of Select Vegetable, Flower and Farm Seeds.—Mr. W. Thompson (34 and 36, Tavern Street, Ipswich), Supplement to Descriptive Catalogue of Flower Seeds, &c.—Mr. J. Scott (The Seed Stores, Yeovil, Somerset), Descriptive Catalogue of Choice Seeds for the Kitchen Garden, the Flower Garden and the Farm.—Messrs. W. Barron & Sons (16, Market Street, Nottingham, and Elvaston Nurseries, Borrowash, Derby), Descriptive List of Vegetable, Agricultural, and Flower Seeds, &c.—Ant. Roozen & Son (Overveen, Haarlem, Holland), List of New Gladioli, Dahlias, Cannas, Liliums, &c.—Frœbel & Co. (Neuminster, Zurich), Spring Catalogue of Seeds, Plants, Herbs, &c.—Mr. T. Perkins (12, Drapery, Northampton), Descriptive List of Fruit Trees, Roses, and General Nursery Stock, also Descriptive Catalogue of Vegetable and Flower Seeds, &c.—Mr. J. Bird (Bridge Street, Downham Market), a Select List of Kitchen Garden, Agricultural, and Flower Seeds, &c.—Messrs. Brunning & Co. (1, Market Place, Great Yarmouth), Illustrated Descriptive Catalogue of Seeds, &c.—Messrs. T. Kennedy & Co. (Dumfries), Catalogue of Vegetable and Flower Seeds, &c.—Messrs. Hurst & Son (6, Leadenhall Street, London), Trade Seed Catalogue for 1875-6.—Messrs. Ormiston & Renwick (Nurserymen, Melrose), Catalogue of Garden, Flower and Agricultural Seeds, Implements, &c.—Messrs. Waite, Burnell, Huggins & Co. (79, Southwark Street, London, S.E., and 32, Rue Sery, Havre, France), Spring Catalogue for 1876.—Mr. R. B. Matthews (65 and 67, Victoria Street, Belfast), Descriptive Seed Catalogue and Cultural Guide.—Messrs. Vilmorin-Andrieux et Cie. (4, Quai de la Megisserie, Paris), General Catalogue of Flowers, Seeds, Roots, &c.—Mr. C. Turner (Royal Nurseries, Slough), Catalogue of Seeds for the Kitchen, the Flower Garden and the Farm.—Messrs. J. Dickson & Sons (108, Eastgate Street, Chester), Catalogue of Vegetable and Flower Seeds, Garden Tools, &c.—Messrs. Kent & Brydon (31, Priestgate, Darlington), Descriptive Catalogue of Vegetable and Flower Seeds, &c.—Messrs. Kinmont & Kidd (Exotic and Vauxhall Nurseries, Canterbury), Priced Catalogue of Ornamental Trees and Shrubs, Fruit Trees, &c.; also Catalogue of Kitchen Garden and Flower Seeds.—Messrs. Little & Ballantyne (Carlisle), Spring Seed Guide, &c.—Messrs. J. Cocker & Sons (Sunnypark and Froghall Nurseries, Aberdeen), Catalogue of Select Vegetable and Flower Seeds, Horticultural Implements, &c.—Messrs. P. S. Robertson & Co. (33, St. Andrew Square, Edinburgh), Descriptive Price List of Garden, Flower, and Farm Seeds, Garden Tools, &c.—V. Lemoine (Rue de l'Etang, Nancy), Illustrated Catalogue of New Plants, &c.—Mr. John Laing (Stanstead Park Nurseries, Forest Hill, London, S.E.), Catalogue of Garden, Flower and Farm Seeds, Implements and Garden Requisites.

COMMUNICATIONS RECEIVED.—J. C. & Co. (many thanks).—A. F.—O.—S. & Sons.—C. O.—W. E.—J. P.—C. D.—P. P. D.—L. E. H.—W. T.—C. B.—A. K.—J. S.—J. Y. M.

*** IMPORTANT NOTICE.—*The* AGRICULTURAL GAZETTE *is now* PUBLISHED *on* MONDAYS, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, January 27.

A moderate amount of business has been done during the week in better class goods, but commoner sorts still remain a drug on the market. Heavy cargoes of fruit have arrived in London from the Azores during the winter, and have all been sold at low rates. Kent Cobs are improving. *Jas. Webber, Wholesale Apple Market.*

FRUIT.

	s. d. s. d.		s. d. s. d.
Apples, per ½-sieve	1 0– 2 6	Melons, each	.. 2 0– 4 0
Cobs and Filbts., lb.	0 6– 0 9	Oranges, per 100	.. 6 0–12 0
Grapes, per lb	.. 2 0– 6 0	Pears, per doz.	.. 1 6– 6 0
Lemons, per 100	.. 6 0–10 0	Pine-apples, p. lb.	.. 2 0– 5 0

VEGETABLES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	8 0– ..	Mint, green, bunch	1 6– ..
— Jerusalem, p. lb.	0 3– ..	Mushrooms, per pott.	1 0– 2 0
Asparagus (English), per bundle	.. 8 0–10 0	Onions, young, bun.	0 4– 0 6
Beans, French, p. 100	5 0– ..	Parsley, per bunch..	0 4– ..
Beet, per doz.	.. 1 0– 2 0	Peas, green, per lb...	1 6– ..
Brussels Sprouts, lb.	0 4– ..	Potatos (new), baskt.	1 0– ..
Cabbages, per doz.	.. 1 0– 2 0	— new Jersey, p. lb.	2 6– ..
Carrots, per bunch..	0 6– ..	— Sweet, per lb.	.. 0 6– ..
Cauliflowers, p. doz.	2 0– 4 0	Radishes, per bunch.	0 2– 0 4
Celery, per bundle..	1 6– 2 0	— Spanish, doz.	.. 1 0– ..
Cucumbers, each	.. 2 0– 3 6	— French	.. .. 0 6– ..
Endive, per doz.	.. 1 0– 2 0	Rhubarb, per bundle	0 6– 1 0
— Batavian, p. doz.	2 0– 3 0	Salsafy, per bundle..	0 9– ..
Herbs, per bunch	.. 0 2– 0 4	Seakale, per punnet	1 0– 2 0
Horse Radish, p. bun.	3 0– 5 0	Shallots, per lb.	.. 0 3– ..
Leeks, per bunch	.. 0 2– 0 4	Tomatos, per doz.	.. 1 0– 2 0
Lettuces, per score..	2 0– ..	Turnips, per bundle	0 4– ..

Potatos—Rocks, £5; Regents, £7 to £8; Kidneys, £7 to £8 per ton.

CUT FLOWERS.

	s. d. s. d.		s. d. s. d.
Arum Lilies, per doz.	6 0–18 0	Narcissus, per dozen	3 0– 6 0
Azaleas, 12 sprays	1 0– 3 0	Pelargoniums, 12 spr.	2 0– 4 0
Camellias	.. 4 0–12 0	— Zonal do.	.. 1 6– 3 0
Carnations, 12 blooms	2 0– 4 0	Poinsettia, per doz...	4 0–12 0
Cineraria, per bunch	1 0– 2 0	Primula, dbl., p. bun.	1 0– 1 6
Cyclamen, 12 blooms	0 3– 0 6	Rhododend., 12 hds.	4 0–12 0
Epiphyllum, p. doz.	1 0– 3 0	Roman Hyacinths, 12 sprays	.. .. 3 0– 6 0
Eucharis, per doz.	.. 6 0–18 0	Roses, indoor, p. doz.	3 0–12 0
Euphorbia, 12 spr.	.. 4 0– 9 0	Spiræa, 12 sprays	.. 2 0– 4 0
Gardenia, per doz.	..12 0–18 0	Stephanotis, 12 sprays	9 0–18 0
Heliotropes, 12 spr.	0 6– 1 0	Tuberoses, per doz..	4 0– 9 0
Lily of Valley, 12 spr.	2 6– 8 0	Violets, 12 bunches..	2 6– 4 0
Mignonette, 12 bun.	6 0– 9 0		

PLANTS IN POTS.

	s. d. s. d.		s. d. s. d.
Azaleas, per doz.	..30 0–60 0	Hyacinths, per doz.	9 0–18 0
Begonias, per doz.	.. 6 0–12 0	Hyacinths, Rom., do.	12 0–30 0
Bouvardias, do.	..12 0–18 0	Lily of Valley, doz.	18 0–60 0
Cineraria, per doz.	..12 0–18 0	Mignonette, do.	.. 6 0– 9 0
Cyclamen, do.	..12 0–24 0	Myrtles, do...	.. 3 0– 9 0
Cyperus, do...	.. 6 0–12 0	Pelargoniums, scarlet, per doz.	.. .. 6 0– 9 0
Dracæna terminalis	30 0–60 0	Poinsettias, per doz.	15 0–24 0
— viridis, per doz.	18 0–24 0	Primula sinensis, do.	6 0–12 0
Epiphyllums, do.	..18 0–42 0	Solanums, do.	.. 6 0–24 0
Euphorbia jacquiniæfolia, per doz.	.. 9 0–18 0	Tulips, do.	.. 8 0–12 0
Ficus elastica	.. 2 6–15 0	Veronica, do.	.. 4 0–12 0
Heaths, in var., doz	12 0–30 0		

SEEDS.

LONDON: *Jan.* 27.—Extreme activity now prevails in the agricultural seed trade. For all descriptions of red Clover prices keep exceedingly firm, whilst higher quotations are reported from the Continent, and also from the United States. France, it is said, is now sending red seed into Germany. Cable advices from New York describe the American stocks generally as exceedingly light, with values rapidly advancing. Of new English the supply does not increase, so that everything points to a dear year for seeds. Trefoils, being still in strong speculative request, are making £2 per ton more money. Higher prices are also asked for both Alsike and white Clover. A good business, on fully former terms, is doing in foreign Italian and in perennial Rye-grass. Spring Tares meet a ready sale at recent currencies. A few samples of large Scotch gores are now appearing at market. In bird seeds there is no change of importance. Blue boiling Peas experience a slow sale. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, E.C.*

CORN.

There was no improvement in the trade at Mark Lane on Monday. English Wheat was scarcely saleable, there being a small supply, almost the whole of which was of poor condition or quality. For foreign Wheat prices were not in all instances maintained. Barley had a drooping tendency, especially malting descriptions. Malt was dull and somewhat flat. No appreciable change occurred in the quotations for Oats; sound old corn, however, was firm. Maize was quiet, and about the same in price. Beans were depressed; Peas were cheaper only when forced for sale; and the flour market was exceedingly slow, and prices remained weak.—On Wednesday business in all departments remained quiet. In Wheat, English and foreign, the demand was chiefly confined to superior qualities, which alone supported previous rates. Barley was flat, as also was malt, and there was some difficulty experienced in upholding Monday's prices for Oats. Maize was dull, and few sales were reported in Beans or Peas on former terms. Flour was weak, and when pressed for sale it was decidedly lower. Average prices for the week ending Jan. 22:—Wheat, 44*s.* 9*d.*; Barley, 34*s.* 2*d.*; Oats, 23*s.* 10*d.* For the corresponding week last year:—Wheat, 43*s.* 9*d.*; Barley, 45*s.* 3*d.*; Oats, 29*s.* 8*d.*

CATTLE.

At Copenhagen Fields on Monday there was a shorter supply of English beasts, but larger of foreign than on the previous market day. Trade was slow, yet choicest qualities were not lower, and a fair clearance was effected. The number of English sheep was also smaller, and of foreign larger. Choicest qualities maintained late prices, but generally trade was dull. The number of calves was larger, still choice ones were dear; on the average prices remained unaltered. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.* 4*d.*, and 5*s.* 8*d.* to 6*s.* 2*d.*; calves, 5*s.* 4*d.* to 7*s.*; sheep, 5*s.* 4*d.* to 6*s.*, and 6*s.* 4*d.* to 7*s.*; pigs, 4*s.* 6*d.* to 5*s.* 8*d.*—On Thursday fair supplies of stock for the day came to hand; the trade ruled irregular, and prices were in some cases easier than above reported.

HAY.

At Whitechapel market on Tuesday straw was dull and somewhat cheaper, at 35*s.* to 45*s.* per load, but there was no change in the value of other sorts of fodder, though the supply was considerable. Prime Clover, 100*s.* to 147*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 134*s.*; inferior, 55*s.* to 75*s.* per load.—On Thursday trade was quiet, but good, at, for Clover, best, 117*s.* to 147*s.*; inferior, 80*s.* to 90*s.*; hay, best, 114*s.* to 134*s.*; inferior, 60*s.* to 80*s.*; and straw, 36*s.* to 47*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 130*s.* to 140*s.*; inferior, 78*s.* to 110*s.*; superior Clover, 140*s.* to 150*s.*; inferior, 98*s.* to 115*s.*; and straw, 46*s.* to 50*s.* per load.

POTATOS.

At the Borough and Spitalfields markets this week trade was steady. Sound Potatos (of which there was a very moderate supply) were taken off freely at extreme prices, but inferior sorts were slow of sale, and somewhat irregular in value. Kent Regents, 130*s.* to 150*s.* per ton; Essex ditto, 120*s.* to 140*s.*; rocks, 85*s.* to 100*s.*; flukes, 140*s.* to 170*s.*; kidneys, 110*s.* to 140*s.*; Victorias, 135*s.* to 150*s.*—Last week's imports of foreign Potatos were made up of 566 tons, 1070 bags, and 1119 sacks.

COALS.

Business at Monday's market was steady, and prices were firmer than last reported; an advance of 3*d* to 6*d.* per ton was obtained for house coals, and Hartleys also went up 6*d.* Wednesday's market was a dull one; house coals were unchanged, but Hartleys gave way 6*d.* per ton. Quotations:—Bebside West Hartley, 17*s.* 9*d.*; Walls Ends—Hetton, 22*s.* 6*d.*; Hetton Lyons, 20*s.* 3*d.*; Hawthorn, 20*s.* 3*d.*; Hartlepool Original, 23*s.*; Caradoc, 22*s.* 6*d.*; East Hartlepool, 22*s.* 3*d.*; Richard's Anthracite, 18*s.* 6*d.*

NOTICE.

ON SATURDAY NEXT, FEBRUARY 5th,

WILL APPEAR

A SECOND SELECTED 100 FROM UPWARDS OF 3000

OF

WEEKS'S PATENT DUPLEX UPRIGHT TUBULAR BOILERS AND O.B. SYSTEM OF HEATING

NOW IN OPERATION.

FOR FULL PARTICULARS AND DESCRIPTION OF

PATENT FUEL ECONOMIZER

APPLY TO

J. WEEKS & CO.,

HORTICULTURAL BUILDERS, HOT-WATER APPARATUS MANUFACTURERS and PATENTEES,

KING'S ROAD, CHELSEA, LONDON, S.W.

JEFFERIES' SEEDS—BEST SEEDS AT MODERATE PRICES

		s.	d.			s.	d.
The Best BEAN (Broad), Seville Long-pod	... quart	1	9	The Best LETTUCE, Jefferies' Silver Star	...packet	1	6
The Best BEAN (French), July Surprise	... pint	2	6	The Best LEEK, Monstrous Carentan ...	... ounce	1	6
The Best BORECOLE, The Major ...	...packet	0	6	The Best MUSHROOM SPAWN, Jefferies'	...bushel	5	0
The Best BEET, Jefferies' Red	... ounce	1	0	The Best MELON, Colston Bassett ...	...packet	1	0
The Best BROCCOLI, Leamington ...	...packet	1	6	The Best ONION, Banbury White Spanish	... ounce	0	6
The Best CAULIFLOWER, Snowball ...	... „	2	6	The Best PARSLEY, Moss Curled ...	... „	0	6
The Best CABBAGE, Jefferies' Champion	... ounce	0	8	The Best PARSNIP, Elcombe's Improved	... „	0	4
The Best CAPSICUM, Prince of Wales	...packet	1	0	The Best PEA, Dr. Maclean	... quart	7	6
The Best CARROT, Early Stump Horn	... ounce	0	6	The Best TURNIP, Silverball	... ounce	0	4
The Best CELERY, Cirencester Red ...	...packet	1	0	The Best TOMATO, Early French Favourite	...packet	1	0
The Best CUCUMBER, Rollisson's Telegraph	„	2	6	The Best VEGETABLE MARROW, Chusan Green,	peck	0	6
The Best ENDIVE, New Intermediate ...	„	1	0	The Best POTATO, Snowflake	„	8	0

For particulars of the above and all other good Seeds, see our CATALOGUE, Price 6d., or Gratis to Purchasers.

JNO. JEFFERIES & SONS, SEED MERCHANTS, CIRENCESTER.

GARDENERS' CHRONICLE SHEET ALMANAC.

THE "GARDENERS' CHRONICLE" ILLUSTRATED SHEET ALMANAC *for* 1876 (an entirely new and original design).

See the "Gardeners' Chronicle" for SATURDAY, *January* 1.

The Almanac may be had separately, mounted on rollers, price 6d. post free.

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W. RICHARDS, 41, WELLINGTON STREET, STRAND, LONDON, W.C.

PORTER'S EXCELSIOR POTATO, AND THE REST.

I THINK I have good reason to complain of the treatment I have received at all hands. Everything has been stated calculated to damage me, and without the slightest evidence. My answers have been cut down, or refused, and doubt thrown upon such evidence as was presented on my behalf. The marked eagerness to run me down cannot on any ordinary hypothesis be accounted for, even if the lowest ground be taken, viz., that my Potato might be synonymous with certain other sorts (which it has not yet been proved to be), since there are so many synonyms, in which almost every grower is implicated. The reports on Potatos grown at Chiswick, 1873-4, bristle with synonyms. In 1874 report on Lapstone (p. 177) there are 13 synonyms indicated, including *Ne Plus Ultra* (Farquhar); and *Kentish Ashleaf Kidney* (p. 176), which has 20 synonyms, including *Veitch's Improved* and *Mona's Pride*, &c. Then the Potato called *Turner's Union* is, I believe, very like *Excelsior* in tuber, haulm, and flower, yet it is doubtless quite distinct. Why, then, such hasty and damaging assertions in regard to mine, because of a likeness to certain other sorts? Has any other grower been treated in such a manner as I, a poor amateur? Has any other ever been spoken against at all because of synonyms? I think the manner in which I have been treated is simply shameful, and perhaps those who have stirred themselves to harm and annoy me will yet be ashamed. No fair trial of my Potato can be expected at the hands of such, but some may do me justice; and if *Excelsior* shall be found superior to other sorts of the same type I shall be pleased; if not, let it be discarded, and I shall be perfectly satisfied. I only desire that it should stand on its own merits, and that its name should not be given to another Potato of declared inferior quality, however similar in appearance it may be.

In reference to Mr. Farquhar's last letter, let me say that it is a poor cause that requires untruth to support it. He skips over those untruths charged against him, thus virtually acknowledging them, and proceeds to make farther misstatements. I did not speak of 1872 Aberdeen Show *to boast*, but to prove that he might be wrong about *Excelsior*; and now he makes a poor reprisal as to Class B. at the Alexandra Palace Show. There were four prizes in that class, and five collections commended besides. These were, as every one would see, on an equality, and not in the prize list at all. But if he had said fifth instead of ninth there might have been a shadow of truth. Then as to Aberdeen Show, he apologises in a peculiar fashion, and misstates again. I have to state, what he himself must have seen and known, that I have been for years competing at various shows with, not only twenty things, as he speaks of doing, but thirty things, besides Potatos, though I have but a few poles of a garden—a garden, too, low lying, with indifferent exposure, unsheltered (as he is, with woods around), exposed to untimely frosts and gales (from which he is protected), with every disadvantage almost conceivable—no suitable dung, leaves, &c., at my hand, as he has. Then, if I am my own master, I am not paid for my work, as he is, by a master; and I am not a gardener, was not trained to garden work, have not men under me to get everything done in its season and properly attended to. Besides, the sowing and planting time is my busiest otherwise, when it is hardly possible to get things done at the proper time; and in particular, in regard to Potatos, I must plant late for fear of frosting down. Last season it was about Whitsunday ere I got them finished. Then the disease appeared in the end of July, and checked them when but half-grown. I had purposed, however, to see the Alexandra Palace Show, and compete if I could. I entered in several classes before examining what I could turn out, and when I came to dig I found I had scarcely anything of size to offer. However, I selected the best for Classes C. and F, where I carried 1sts, and, knowing how annoying it is to the promoters of a show, after providing space, &c., to find entries wanting, I exhibited some far too small to gain anything. I was surprised to find two of my undersized lots commended, I suppose, because of their cleanness and equalness; and I certainly should not have been astonished to have found them nineteenth instead of next to the first four and three respectively. If Mr. Farquhar, then, would have the truth (and allow me to boast just a little), it would stand thus:—Porter (with a half-grown crop, small garden, and other disadvantages), two 1st prizes and two collections Commended. Farquhar (with all his advantages, full-grown crop, half acre of croft in Potatos, and his master's garden to boot, with plenty of scope for rotation of crops, which I have not, and all his strength concentrated in Class B.), a 3d prize. He should not provoke comparisons. Besides, Class B. was not a trial of strength between *Excelsior* and his *Henderson's Prolific*.

As an erroneous impression that I was giving out my Potato as a seedling may have tended to strengthen the *future*, let me now give an account of it. It is a selection from an unnamed Fluke, as "flat as a flounder," as the saying is, and it is so different from the original stock that no one would know it to have ever had any connection with it as to type of tuber. This can be confirmed by evidence apart from my own statement, and any one who ever asked me hitherto about it has been told that *Excelsior* was a selection. The Potato has improved all along, I think in every respect, by the manner of treatment, and continued selection of the finest tubers, and particularly in earliness, by the method of preparing my seed. All these years then it has been before the public, and now, when Mr. Farquhar could make a fine thrust to damage me, he brings forward his insinuations and assertions in the most public manner, without a shred of proof, and without even being able to say that he had proved it himself. Whatever he may say as to having no *object* in writing as he has done, neither I nor impartial readers will be likely to think so. Without an object, and of a stirring nature, too, would any man, and especially, as I may say, a neighbour, too, write in the most public and offensive and harmful manner, as he has done? It is not to be conceived of. Even granting, for the sake of argument, that *Excelsior* had the same origin as *Henderson's Prolific*, would it not have been but generous to suppose that it *might* at least, possibly, be an improved selection, unless, indeed, all improvement must begin and end at Fyvie? Mr. Farquhar says *Henderson's Prolific* is an improved *Handsworth*. Could he not have stretched a little farther? But, no! that would not have suited his purpose. As to what he says about the quality, it is strange that he should have multiplied stock of *Henderson's Prolific* to furnish a seed-house with it largely, knowing the quality to be indifferent, and only now declare it when he finds the variety discarded from their list. It may be rather humiliating to himself, but he should not brand mine as alike. I have testimony, unsought, from various quarters, speaking of *Excelsior* as of excellent quality.

Mr. Farquhar speaks of a neighbour's evidence after trial. I also have proved, not one season, but two, and have found, with me, with equal treatment in every way, and in ground side by side, *Excelsior* superior in every respect, and particularly as a larger grower, and at the same time fine, and not so flat as *Henderson's Prolific*; and I believe *Excelsior*, without doubt, comes earlier to maturity. I have not tested the quality of *Henderson's Prolific*, and I am always chary in speaking decidedly as to the quality for table use of any sort as grown with me, as I have been under the necessity of growing too much in the same ground year after year. Mr. Farquhar speaks of *proper* Excelsior. What makes a Potato that he takes under his wing more *proper* than mine? So far as I know mine was first in being named *Excelsior*. The world will certainly be greatly indebted to Mr. Farquhar for his intense interest in my Potato, but, from the spirit he has shown, I daresay the unprejudiced will rather not take evidence from him or his elected London or other friends. It seems to me altogether beyond his business, and the grossest impertinence, to appoint himself distributor of my Potatos for trial. His anxiety in that direction has an evil look, disclaim as he may. There is one thing that seems very strange to me—how men, even with some experience, will, from the mere likeness of tubers, at once assume sameness in every respect, and rush out to declare their assumption to the world as proof positive. This thing itself looks very suspicious. I have grown a great many sorts of Potatos—at one time not fewer than about 200 varieties so-called, and though I could find little or no distinct difference between not a few of them, I would not have dared to do—even after growing them—what these men have done and without growing or proving in any way. In so far as I am concerned I have acted honestly and openly, and have not adopted any man's named Potato in my *Excelsior*, and I would scorn to do any such thing. If the original stock had possessed a name, it should have retained it for me. I feel annoyed when I get a Potato without a distinctive name. Nor have I pressed *Excelsior* into commerce. I refused to give it out for years, when I might have made most of it, and I acceded only when urged to do so. It has proved itself superior in competition, and if now it should be found to resemble certain other sorts am I for that to be blamed and abused? Mr. Farquhar has done all he could to damage me, and his doings are aggravated by several considerations: 1st. Being a gardener, and of some experience, he would be likely to be heard and believed before an obscure amateur such as I. 2d. Being in the same district he would naturally be supposed to know well as to what he wrote. 3d. To make his cruel thrusts and without a shadow of evidence, but mere assumption, when another was attacking me, was cowardly in the extreme. But enough! Mr. Farquhar must be strangely constituted if what he has done to harm me will afford him consolatory reflections in all the time to come, *I* would much rather be the sufferer than have done to any one even *with* proof, what he has done to me *without* it. ("He that steals my purse steals trash;" Mr. F. can finish this.) His judgment has evidently been a foregone conclusion. But unfriendly and unneighbourly as has been his conduct, and bitter as it may have been to me, I hope *he* may never meet with similar treatment from any one near or remote.

In his parable about the "Minister's Corn" I have no doubt Mr. Farquhar makes another cowardly but covert thrust at me, but he has over-reached his mark, if he refers to a Potato called "Purlie." It is not mine. I never professed that it was in any sense; and *I* did not name it; and whatever likeness it may have to "Peerless" or any other, I had no right to change the name under which I got it. It was called *Porter's Purlie* at the Alexandra Palace Show, but not by me, nor by my authority, and I never called it so. I got it from a gentleman who had it direct from America under the name "Purlie." I *did* suspect it to be the same as *Peerless*, but after proving it thoroughly I came to the conclusion that it was at least superior in some respects, though rather like; and I sold of it under the name "Purlie," as given to me. The highest retail price *I* ever got for it was 3*s*. 9*d*. per whole peck, including packages; and if Mr. F.'s insinuations about "four or five times its proper value being obtained for it" refer to this, it is, like most of his statements and insinuations in regard to me and my Potatos, utterly untrue; for I think even *Peerless*, if he will have it so, has not hitherto been retailed by seedsmen at very much below 3*s*. 9*d*. In the catalogue of an English seed-house, now before me, *Peerless* is quoted at 4*s*. per peck for this season. I do not think that Mr. Farquhar is the right man to begin to throw stones at another, when *he* sent *Henderson's Prolific* under that name, knowing it to be *Handsworth*, to Chiswick, to be grown and reported on in 1874 (see p. 180), and *Early Dunmisk*, that he got home from America, to get a certificate (p. 181) for his own honour and gain, and then sold 200 lb. of it to a London house for £10; and "Barron's Perfection," which came out some 12 years ago, and, I believe, got a certificate then, which also he sent to Chiswick to get another certificate (*vide* 1874 Report, p. 183), for his own delectation and magnification in the local papers as a successful horticulturist.

And now a word or two in reference to Mr. Dean's last. *He* should not insist that I said or meant what I never did—to lead the public to believe anything other than the truth. My *Caution* and my letter (p. 720) both plainly intimated the contrary of what he alleges. Then as to prices. He knows very well that *I* do not fix the London price, nor, of course, do I get *it* myself. And, besides, prices may surely vary according to season, demand, and fame. Then, as to *Johnson's Seedling*—I never before heard of it, and I never got a single tuber of any sort from the South of Scotland. It seems to me simply preposterous to pronounce so confidently as to absolute sameness, from similarity of tubers. Would it not have been but reasonable, taking the lowest ground, to have expected Mr. Dean to be generous enough to suppose that my Potato might possibly be superior, seeing it had proved itself so in competition? Such a possibility is certainly nothing new; and, to prove it, let me, without offence, refer to *Excelsior Kidney* (Dean), as described in the "Report of Potatos Grown at Chiswick in 1874," where it is stated (p. 177) that it is "A more erect-growing and much improved form of *Dawe's Matchless*;" and then in regard to this, it is stated on the same page that *Dawe's Matchless* is synonymous with *Webb's Imperial*, which all the world knows as of good quality. Then read as follows (same report and page):—*Silverskin Kidney* (Dean); *synonyms*—Sear's Seedling (Horley); Lady Abbess (Sutton). And in 1873 Report (p. 10) *Extra Early Vermont* is described as "very similar in all characters to Late Rose," only a few days earlier, and yet it was awarded a *First-class Certificate*.

This letter has stretched out to be somewhat lengthy, but perhaps it may not be considered very unduly so, considering the circumstances, and the fact that it is an easy matter for parties to fling about in few words rash and damaging assertions, without argument or proof. I need say no more. Let the impartial judge of the treatment I have received.

WM. PORTER,
Old Meldrum, N.B.

Jan. 18, 1876.

To the Trade.

Home-grown GARDEN and AGRICULTURAL SEEDS.

H. AND F. SHARPE'S Wholesale Special Priced LIST of the above Seeds of 1875 growth is now ready; it comprises all the best sorts in cultivation. The quality is very fine, and the prices will compare favourably with those of other growers.

Seed Growing Establishment, Wisbech.

Dwarf Maiden Peaches and Nectarines, true to name.

Price 50*s*. per 100.

THOMAS WARNER can still supply the following:—

PEACHES—Crimson Galande, Dagmar, Dr. Hogg, Early Albert, Early Alfred, Early Ascot, Early Leopold, Early Silver, Rivers' Early York, Lord Palmerston, Magdala, Nectarine Peach, Princess of Wales, Radclyffe, Sea Eagle, Stump the World.

NECTARINES—Albert Victor, Dante, Darwin, Elruge, Hardwicke Seedling, Humboldt, Large Elruge, Lord Napier, Pine Apple, Rivers' Orange, Stanwicke Elruge, Victoria, Violette Hative, Rivers' White.

The Nurseries, Leicester Abbey.

MESSRS.

Sutton & Sons

PRIZES at the MEETINGS

OF THE

Royal Horticultural Society, 1876.

EIGHTEEN

FAC-SIMILE OF MEDAL.

FAC-SIMILE OF MEDAL.

GOLD, SILVER and BRONZE MEDALS,

With valuable Money Prizes, amounting in all to nearly

ONE HUNDRED GUINEAS,

WILL BE OFFERED BY

MESSRS. SUTTON AND SONS

AT THE

Various Royal Horticultural Society's Meetings during 1876.

Full Particulars and Conditions of Competition gratis and post-free on application.

SUTTON & SONS,

THE QUEEN'S SEEDSMEN, READING.

RICHARD SMITH'S SEED LIST

CONTAINS

THE BEST KINDS

OF

VEGETABLE

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FLOWER SEEDS,

and forwarded Free on application.

SMITH'S No. 1 COLLECTION	£3 3 0
SMITH'S No. 2 COLLECTION	2 2 0
SMITH'S No. 3 COLLECTION	1 11 6
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SMITH'S No. 5 COLLECTION	0 15 0
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EXTRA LARGE COLLECTIONS from	£5 5*s*. to 10 10 0

The above are liberally and judiciously selected, and forwarded carriage free, excepting Nos. 5 and 6.

	Per packet.—*s*. *d*.
CUCUMBER, Smith's Fine Long Frame	1 6
,, Monro's Duke of Edinburgh	1 6
CAULIFLOWER, Veitch's Autumn Giant	1 6
CELERY, Sandringham Dwarf White	1 0
CABBAGE LETTUCE, Worcester Champion	1 0
COS LETTUCE, Worcester White	1 0
MELON, Eastnor Castle Green-flesh	1 6
,, Queen Emma	1 0
ONION, The Banbury	1 0
CYCLAMEN PERSICUM, splendid large flowering	1 0
POLYANTHUS, choice gold-laced	1 0
ASTER, Truffaut's French, 12 splendid colours	1 0
,, Victoria, 10 splendid colours	1 0
,, Betteridge's Globe Quilled, 12 splendid colours	1 0
GERMAN STOCK, large flowering, 12 splendid colours	1 0
PHLOX DRUMMONDII, 12 colours	1 0
PRIMULA, finest fringed	1*s*. 6*d*. and 2 6
CINERARIA, saved from finest flowers	1*s*. 6*d*. and 2 6
CALCEOLARIA, finest rich spotted	1*s*. 6*d*. and 2 6
CENTAUREA CANDIDISSIMA	1 0
PYRETHRUM, Golden Feather	0 6
ZINNIA, double, 8 colours mixed	0 6

The above Free by Post.

RICHARD SMITH, Seed Merchant, Worcester.

MR. LAXTON'S NEW PEAS FOR 1876.

MESSRS. HURST & SON

Have been entrusted with the introduction of the following Two First-class New Peas raised by MR. LAXTON, and which are recommended as being of very high quality and distinct:—

THE SHAH.

A short-strawed, early white wrinkled marrow, of the same height and as early as "Ringleader," described by the Royal Horticultural Society as having very full pods, produced abundantly, and containing from eight to nine very large Peas of very fine quality, and as being an exceedingly fine and and early prolific white wrinkled variety. First-class Certificate Royal Horticultural Society.

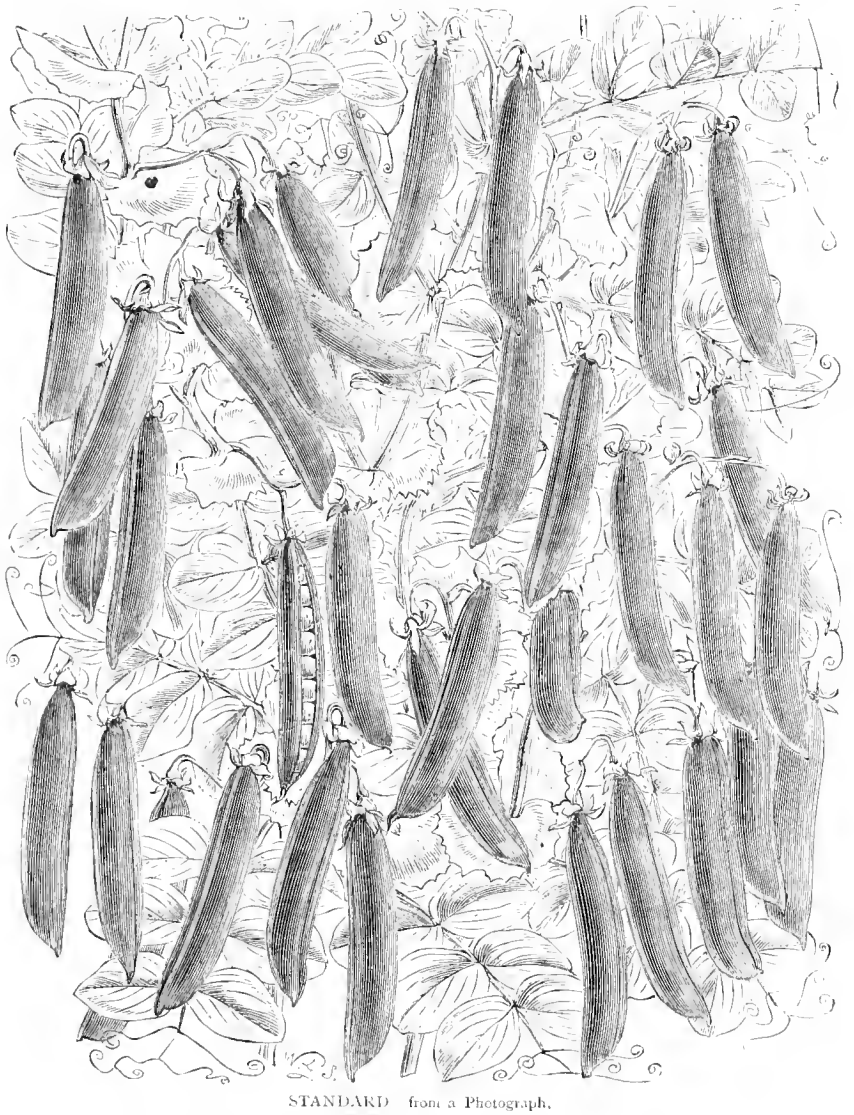
Price 5*s. per sealed quarter-pint packet.*

STANDARD.

Unquestionably the most useful maincrop blue wrinkled Pea yet raised, and will take the same place as a prolific market Pea of high quality amongst blue wrinkled marrows as "Fillbasket" has in round Peas. Described by the Royal Horticultural Society as having long curved pods containing from nine to eleven Peas of large size and excellent quality in each; and as being a very handsome and prolific Pea.

Mr. Laxton, in a letter to us, says, "I cannot find a fault with this Pea," and Mr. Gilbert, of Burghley, says of it, "It is certainly the best Pea I know." Height 3 feet.

Price 5*s. per sealed quarter-pint packet.*



STANDARD from a Photograph.

The following Novelties of 1875 *can also be supplied:—*

SUPPLANTER.

A first-rate Exhibition Pea of fine quality—the earliest of the "Veitch's Perfection" type. Height, 3 feet, handsome, and very prolific, producing very large pods in pairs; plant very robust and vigorous. First-class Certificate.

Price, 5*s. per sealed half-pint packet.*

CONNOISSEUR.

A most distinct and delicious late Pea, raised from "Ne Plus Ultra." Height 6 feet.

Price 5*s. per sealed half-pint packet.*

UNIQUE.

A very handsome and prolific dwarf early Pea with long deep green coloured pods, coming into use at the same time, and of the same height as "Little Gem." First-class Certificate.

Price, 5*s. per sealed half-pint packet.*

DR. HOGG.

An early "Ne Plus Ultra," coming in one week after Dillestone's. Height, 3 feet. The earliest green wrinkled marrow, very sweet, and of a beautiful deep green colour. First-class Certificate.

Price 5*s. per sealed half-pint packet.*

☞ **£20 will be offered in Prizes for Mr. Laxton's Peas in 1876, viz.:— £10 in Four Prizes at the Royal Horticultural Society's Show, in July next, for any six varieties introduced by us, to include the "Shah" and "Standard," 50 pods of each; and £10 to repeat the Prizes at the Society's Provincial Exhibition.**

"*Omega*," *the finest Late Pea, and* "*William the 1st*," *the Earliest Green Wrinkled Marrow, in quantity at Special Rates on application. For other varieties of Mr. Laxton's Peas, see our General List.*

HURST & SON, 6, LEADENHALL STREET, LONDON, E.C.

JOHN THOMPSON AND SON, NURSERYMEN, Doncaster, offer the following at about half their value, to effect a clearance of the ground: no better grown or rooted stuff could be desired:—

PEARS, 2000 Standard and 2000 Pyramidal, in good and leading kinds only, 5 feet stems, well headed, at 75*s.* per 100 for Standards, and 100*s.* to 200*s.* per 100 for Pyramidals.

APPLES, about 1000 Standard and 2000 Pyramidal, in all respects similar to the above, at 50*s.* per 100 Standards, 100*s.* to 200*s.* per 100 Pyramidals.

Also about 1000 ALDER, 6 to 10 feet, at 12*s.* per 100. 1000 MOUNTAIN ASH, 5 to 8 feet, suitable for stocks, at 10*s.* per 100. 3000 SYCAMORE, 5 to 8 feet, 10*s.* per 100. 1000 PLANES, 5 to 6 feet, at 8*s.* per 100. About 10,000 ELMS, common, 7 to 8 feet, at 20*s.* per 100; 8 to 12 feet, suitable for stocks, 30*s.* to 40*s.* per 100. 20,000 PRIVET, Evergreen, 3 to 4 feet, 25*s.* per 100. 1000 BLACK POPLARS, 12 to 15 feet, well headed, 40*s.* per 100. 1000 BIRCH, 5 to 8 feet, 10*s.* per 100. 500 HORSE CHESTNUTS, 10 to 15 feet, headed, at 50*s.* per 100. 1000 LIMES, 6 to 8 feet, 25*s.* per 100; 8 to 10 feet, 50*s.* per 100. 1000 OAKS, single, transplanted, 10 to 12 feet, fit for parks or avenues, 75*s.* per 100. 5000 LAURELS, 2 to 3 feet, 12*s.* per 100, 100*s.* per 1000. The whole of the above recently transplanted.

Trees and Shrubs on Sale.—Special Offer.

BENJAMIN WHITHAM,

The Nurseries, Reddish, near Stockport,

Has a large quantity of the following, fine healthy plants—must be cleared, the land being required for other purposes.

FRUIT TREES.

APPLES, Pyramids, 3-yr., heads, 3 to 4 feet, 6*s.* per dozen, 40*s.* per 100.

" half standards, stems 2 to 4 feet, 4 to 5 feet high, 7*s.* per dozen, 50*s.* per 100; 5 to 6 ft., 8*s.* per doz., 60*s.* per 100.

CURRANTS, Black, fine, 10*s.* per 100.

" Red, fine, 10*s.* per 100.

" White, extra fine, 16*s.* per 100.

STRAWBERRIES, Yates' Seedling, very fine sort, abundant bearer, extra, 3*s.* per 100.

GOOSEBERRIES, large show and dessert sorts, extra strong, 15*s.* to 20*s.* per 100.

FOREST TREES.

AREA THEOPHRASTA (Service tree), grafted sorts, 3 to 4 feet, 5*s.* per dozen, 30*s.* per 100; 4 to 5 feet, 6*s.* per dozen, 40*s.* per 100; 5 to 6 feet, 8*s.* per dozen, 60*s.* per 100, 6 to 8 feet, 9*s.* per dozen, 70*s.* per 100.

BEECH, all fine, stout, extra transplanted, 1½ to 2 feet, 3*s.* 6*d.* per 100, 25*s.* per 1000; 2 to 3 feet, 4*s.* per 100, 33*s.* per 1000; 3 to 4 feet, 6*s.* per 100, 45*s.* per 1000; 4 to 5 feet, 10*s.* per 100, 65*s.* per 1000; 5 to 6 feet, 20*s.* per 100; 6 to 8 feet, 30*s.* per 100; 8 to 10 feet, 50*s.* per 100.

CHESTNUT, Horse, 2 to 3 feet, 5*s.* per 100; 3 to 4 feet, 6*s.* per 100; 4 to 5 feet, 7*s.* per 100; 5 to 6 feet, 10*s.* per 100; 6 to 8 feet, 20*s.* per 100.

" " fine single specimens for avenues, very stout, straight stems, 12*s.* per dozen.

" " Scarlet, 5 to 6 feet, 10*s.* per dozen, 6 to 8 feet, 12*s.* per dozen.

LIME, fine stock, 2 to 3 feet, 7*s.* per 100; 3 to 4 feet, 10*s.* per 100; 4 to 5 feet, 15*s.* per 100; 5 to 6 feet, 20*s.* per 100; 6 to 8 feet, 30*s.* per 100; 8 to 10 feet, 70*s.* per 100.

PINUS AUSTRIACA, 1½ to 2 feet, 7*s.* per 100, 2 to 3 feet, 12*s.* per 100, 3 to 4 feet, 25*s.* per 100.

POPLAR, Lombardy, 2 to 3 feet, 4*s.* per 100, 35*s.* per 1000; 3 to 4 feet, 5*s.* per 100, 40*s.* per 1000; 4 to 5 feet, 6*s.* per 100, 75*s.* per 1000; 6 to 8 feet, 15*s.* per 100, 8 to 10 feet, 25*s.* per 100.

" Ontario, 4 to 6 feet, 8*s.* per 100; 6 to 8 feet, 12*s.* per 100, 8 to 10 feet, 25*s.* per 100.

" Balsam, 4 to 6 feet, 10*s.* per 100; 6 to 8 feet, 20*s.* per 100.

PRIVET, Evergreen, 1½ to 2 feet, 15*s.* per 1000; 2 to 3 feet, 20*s.* per 1000; 3 to 4 feet, 25*s.* per 1000; 4 to 5 feet, 30*s.* per 1000.

SYCAMORE, 2 to 3 feet, 2*s.* 6*d.* per 100, 20*s.* per 1000; 3 to 4 feet, 3*s.* per 100, 25*s.* per 1000; 4 to 5 feet, 4*s.* per 100, 30*s.* per 1000; 5 to 6 feet, 6*s.* per 100, 50*s.* per 1000.

" fine, 6 to 8 feet, 18*s.* per 100; extra strong, 8 to 10 feet, 45*s.* per 100.

EVERGREENS, ORNAMENTAL TREES AND SHRUBS.

AZALEA PONTICA, bedded, 4 to 6 inches, 6*s.* per 100, 50*s.* per 1000.

" " bushy, transplanted, 1½ to 2 feet, 6*s.* per dozen, 45*s.* per 100, 2 to 2½ feet, 9*s.* per dozen, 65*s.* per 100.

BOX, Green, 1 to 1½ foot, 3*s.* per dozen, 16*s.* per 100.

" 1½ to 2 feet, 4*s.* per dozen, 25*s.* per 100; 2 to 3 feet, 4*s.* 6*d.* per dozen, 30*s.* per 100.

LAUREL, Portugal, 1½ to 2 feet, 4*s.* per dozen, 30*s.* per 100.

" " very fine, 2 to 3 feet, 8*s.* per dozen, 60*s.* per 100.

" " extra fine round bushes, 3 to 4 feet diameter, 2½ to 3 feet, 12*s.* per dozen, 90*s.* per 100.

LEDUM LATIFOLIUM, bedded, 3 to 6 inches, 50*s.* per 1000 12 to 18 inches, 6*s.* per dozen, 40*s.* per 100.

MAHONIA (Berberis) AQUIFOLIA, 1½ to 2 feet, 10*s.* per 100; 2 to 3 feet, 15*s.* per 100.

RHODODENDRON, best hybrid, bedded, 3 to 6 inches, 8*s.* per 100, 60*s.* per 1000; 6 to 9 inches, 10*s.* per 100, 90*s.* per 1000; 9 to 12 inches, 14*s.* per 100.

" Ponticum, fine dwarf, round bushes, 1 to 1½ foot, 25*s.* per 100, £10 per 1000; 1½ to 2 feet, 5*s.* per dozen, 30*s.* per 100, 2 to 3 feet diameter, 2 to 2½ feet, 6*s.* per dozen, 45*s.* per 100; 3 to 4 feet diameter, 3 to 4 feet, 18*s.* per dozen, 150*s.* per 100.

" Cunningham's White, very bushy, 1¼ to 1½ foot, 50*s.* per 100; 1½ to 2 feet, 63*s.* per 100.

" best named sorts, bushy, 18*s.* to 30*s.* per dozen.

THORN, new double scarlet (Paul's), 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100, 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.

" Double Pink, 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100, 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.

" " White, 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100, 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.

" Single Scarlet, 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100; 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.

" Cockspur, 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100; 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.

YEW, English, fine, large stock, 9 to 12 inches, 12*s.* per 100; 1¼ to 1½ foot, 20*s.* per 100; 1 to 2 feet, 5*s.* per dozen, 25*s.* per 100; 2 to 3 feet, 7*s.* per dozen, 45*s.* per 100; 3 to 4 feet, 12*s.* per dozen, 80*s.* per 100.

" Irish, 2 to 3 feet, 8*s.* per dozen; 3 to 4 feet, 12*s.* per dozen

ROBERT NEAL, JUN., and GEORGE NEAL, NURSERYMEN, Wandsworth Common, S.W., beg respectfully to call the attention of Gentlemen and Others who are planting this Spring to their large and varied stock of HARDY SHRUBS, FRUIT, FOREST, and ORNAMENTAL TREES, &c., which are now in fine condition for transplanting. An early inspection invited.

CATALOGUES may be had on application.

Important to Potato Growers.

PRINGLE'S HYBRIDISED POTATO SEED.—The extraordinary success which has attended Mr. Pringle in his attempts to improve this valuable esculent—which has resulted in the production of the SNOWFLAKE and ALPHA, and last, though not least, the RUBY—has encouraged him to still greater efforts in his favourite pursuit of hybridisation, and we have now the pleasure of offering a very choice strain of seed saved by him, which is the product of numerous hybridisations, variously operated, with every care during the past favourable season, between the above-named and many of the best new and old varieties in cultivation, both English and American, and includes every strain, which Mr. Pringle will himself sow the coming spring.

In order to encourage the cultivation of seedlings in this country, as well as in European countries, where the importation of the Potato is prohibited for fear of the Colorado Beetle, he has decided to offer his seed for sale, and has placed his entire stock in our hands, that all who desire may have an opportunity of giving it a trial, with the absolute certainty of producing varieties almost sure to equal, if not to excel, any hitherto offered. To prevent imposition, the seed will be put in sealed packets, with the *fac simile* of our signature upon each packet.

The following Testimonial from one of the most successful growers of Potatos in America, is a convincing proof of the wonderful productiveness of this seed :—" Last spring I obtained from C. G. Pringle some of his Hybridised Potato Seed ; planted in the hotbed in the middle of April ; transplanted to the open ground May 10, and I dug from one plant 10½ lb., and from another plant 6 lb. of large, smooth, handsome Potatos."

Price, per packet of 25 seeds, *2s. 6d.* ; five packets, *10s.*, with full directions for culture. All orders enclosing remittance in postage stamps or Postal Order on New York or London, will be promptly answered by return post, and guaranteed to reach the purchaser. Prices to the Trade upon application.

Please address E. K. BLISS AND SONS, Seed Merchants, 34, Barclay Street, New York, U.S.A. For sale by

Hooper & Co, Covent Garden Market, London, W.C.
James Carter, Dunnett & Beale, Holborn, London, W.C.
Christmas Quincey, Peterborough, England.
Ernst Benary, Erfurt, Prussia.
A. Busch, Gr., Massow bei Zewitz, Pomern, Prussia.

Our new Illustrated POTATO CATALOGUE mailed free to all applicants.

Special Offer to the Trade.

FRUIT TREE STOCKS FOR SALE in IMMENSE QUANTITIES.

L. PAILLET, NURSERYMAN, Chatenay, near Paris, informs his Customers that he can supply for the present season any orders with which he may be entrusted, at the following prices :—

QUINCE STOCKS, extra fine, £1 8*s.* per 1000, £13 per 10,000 ; No. 1, £1 per 1000, £9 per 10,000.
PEAR STOCKS, 1 or 2-yr. old, extra, 1 to 2 feet, £13 per 10,0000 ; do. No. 1, 8 and inches up to 1 foot, £8 per 10,000
,, ,, transplanted, good, £15 per 10,000. [10,000.
APPLE STOCKS, 1-yr., splendid, extra, 2 to 3 feet, £13 per
,, ,, Doucin, splendid, extra, from layers, 2 to 3 feet, £13 per 10,000.
,, ,, Paradis, splendid, extra, from layers, 1½ to 3 feet, £13 per 10,000.
PLUM STOCKS, real St. Julien, 1-yr., extra, 1 to 2 feet, £14 per 10,000 ; do. No. 1, 8 and 9 inches up to 1 foot, £10 per £10,000. (N.B. St. Julien is the best Stock for grafting Peaches and Apricots.)
,, ,, real St. Julien, from layers, extra transplanted, £20 per 10,000 ; do. No. 1, do , £12 per 10,000. (N.B. St. Julien, real, from layers, is the best Stock to make fine and clean standards.)
,, Myrobolant, extra, £10 per £10,000 ; No. 1, £4 per 10,000.
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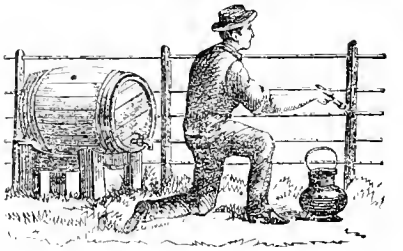

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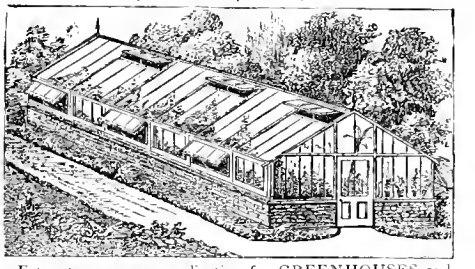

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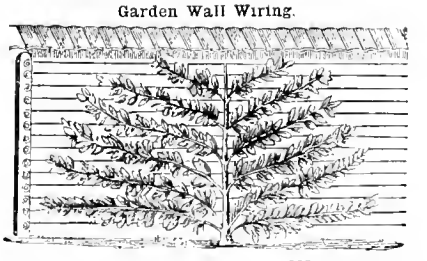

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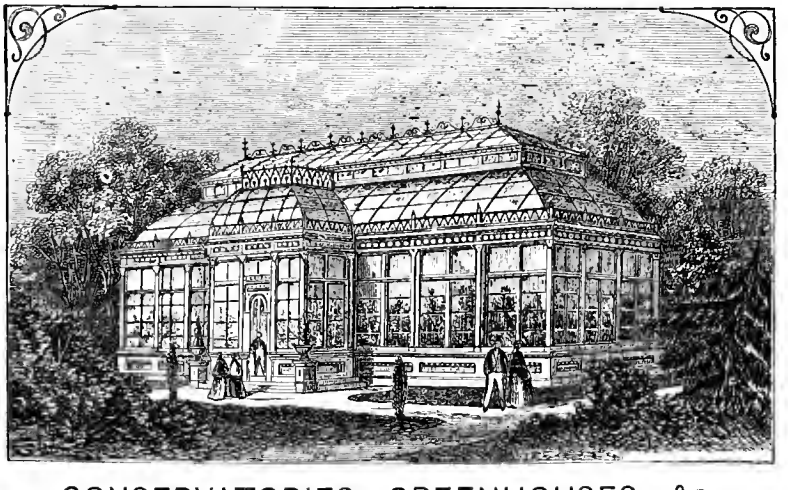

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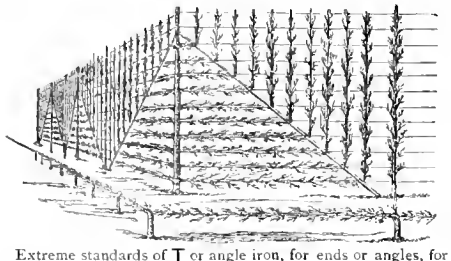

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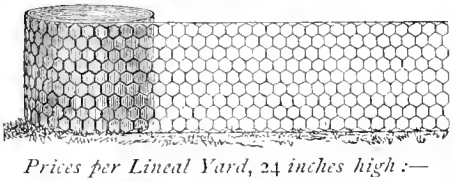

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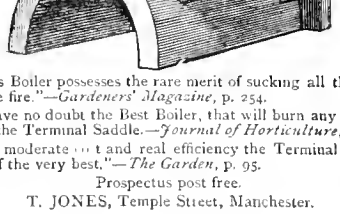

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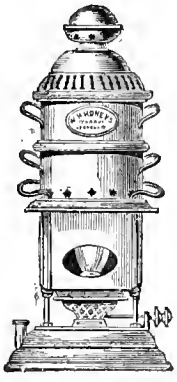

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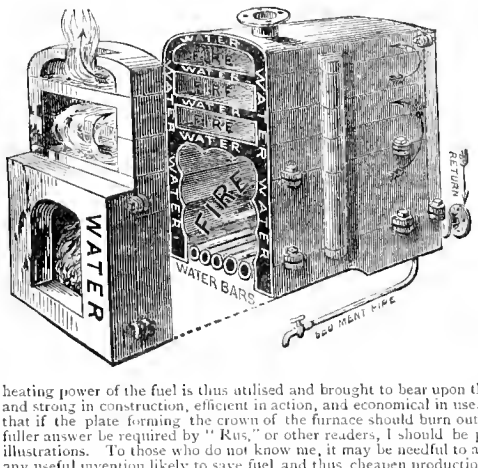
BY those best informed on the nature and subject of Heating by Hot Water, it has long been predicted that an Apparatus would be forthcoming possessing such merits as to wholly supersede all existing appliances, and to approach as near "**PERFECTION**" as can be imagined or expected.

H. CANNELL AND CO. now append the following invaluable correspondence, extracted from *The Field*, which clearly proves their

"VICTORIA HOT-WATER CIRCULATOR"
TO BE THIS
"DESIDERATUM."



January 16, 1875.

THE CIRCULATOR BOILER.—Seeing a question asked regarding the merits of Cannell's Hot-water Circulator, I cannot say too much for it. It is the simplest and most powerful, with the least amount of fuel, of any boiler I ever tried. The late frost has been ample.—CHAS. PENNY, *The Gardens, Sandringham*, *January* 12.

——In answer to "Rus," in last week's *Field*, I beg to state that Cannell's boiler, now called the Victoria Hot-water Circulator, DOES all it PROFESSES, and is one of the most powerful and efficient in the trade. We have had one very heavily weighted with work, heating six houses and a pit for more than a year, and it does its work well. It is economical, being so constructed as to absorb nearly all the caloric from the fuel before the products of combustion are discharged up the chimney. It must prove durable, for no joints nor vulnerable points are exposed to the fire, which expends its force on a series of iron flues or water jackets formed by the boiler. As to the final question—Will it burn up anything?—that will depend very much on the furnace, and the amount of draught provided. Mr. Cannell, the inventor of the boiler, burnt up anything and everything in his furnace at Woolwich, which I visited to master its details and test its efficiency before adopting it. We find here that this boiler and furnace burn up common coal or coke well. The best form of the boiler or circulator is the one that forms its own furnace by a series of water cars; the whole heating power of the fuel is thus utilised and brought to bear upon the water. I have no hesitation in adding that the boiler is simple and strong in construction, efficient in action, and economical in use. Each part of it is also independent and complete in itself, so that if the plate forming the crown of the furnace should burn out it can be replaced without injury to the other parts. Should a fuller answer be required by "Rus," or other readers, I should be pleased to give a detailed description of this "Circulator," with illustrations. To those who do not know me, it may be needful to add that I have no interest in the Victoria further than I take in any useful invention likely to save fuel and thus cheapen production, and tend to advance the science and practice of horticulture.'—D. T. FISH, *Hardwicke*.

January 23, 1875.

THE CIRCULATOR BOILER.—"In answer to your correspondent, 'Rus,' I beg to state that I have a 'No. 2 Circulator Boiler, attached to 2,500 feet of 4-inch piping, doing its work efficiently; and, as a proof, allow me to remark that, between Monday, the 28th, and Tuesday, the 29th, of December last, my black-bulb thermometer registered 0° (or zero), while the temperature of the stove at 8 A.M. on the 29th was 42°, difference 74°. It is only fair to mention that there were five houses besides kept at a temperature of 35° by the same boiler. I use good Scotch coal, but am convinced there is no boiler so economical as the Circulator; it will burn anything, but everybody knows that the better the fuel the more heat and the less work. Regarding durability it would be premature on my part to give an opinion further than this, that should one of the sections of the Circulator give way it can easily be replaced in a few hours without interfering with the piping—a most important matter."—PETER LONEY, Overseer, *Marchmont House, Dunse, N.B.*

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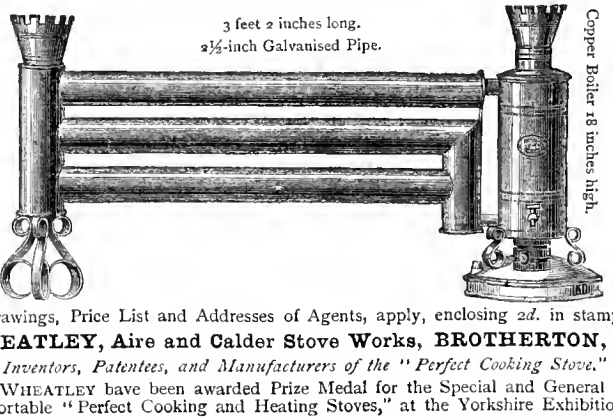

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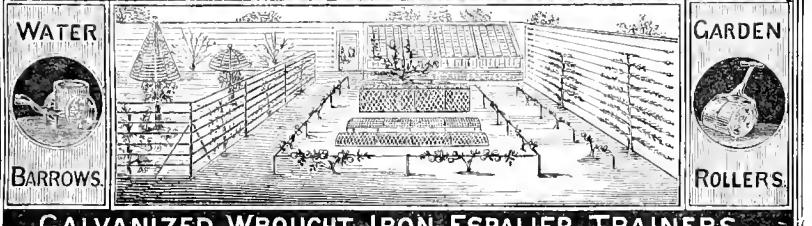

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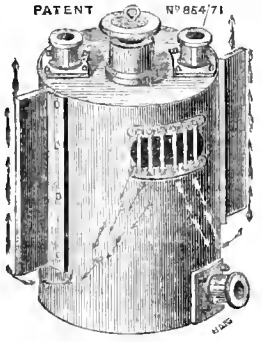
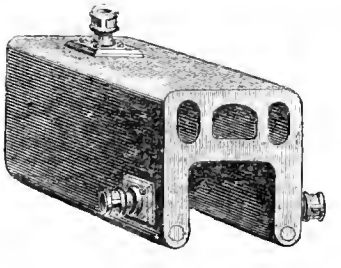


("EXCELSIOR" BOILER.)



("GOLD MEDAL" BOILER.)

EW PATENT "CLIMAX" BOILER (1874). See p. 666, 1874, *Gardeners' Chronicle.*
GOLD MEDAL" BOILER (Birmingham, 1872).
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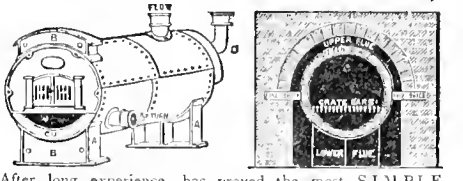

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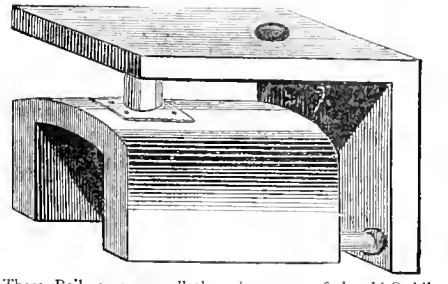
JONES'S PATENT "DOUBLE L" SADDLE BOILER.



These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements—viz, the water space at back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel; the cost of setting is also considerably reduced, and likewise the space occupied; at the same time these Boilers are simple in construction, and being made of wrought iron are not liable to crack. They are made of the following sizes:—

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20 ,,	18 ,,	24 ,,	400	8	0	0
20 ,,	18 ,,	30 ,,	500	9	0	0
24 ,,	24 ,,	24 ,,	700	12	0	0
24 ,,	24 ,,	30 ,,	850	14	0	0
24 ,,	24 ,,	36 ,,	1,000	16	0	0
24 ,,	24 ,,	48 ,,	1,400	20	0	0
28 ,,	28 ,,	60 ,,	1,800	25	0	0

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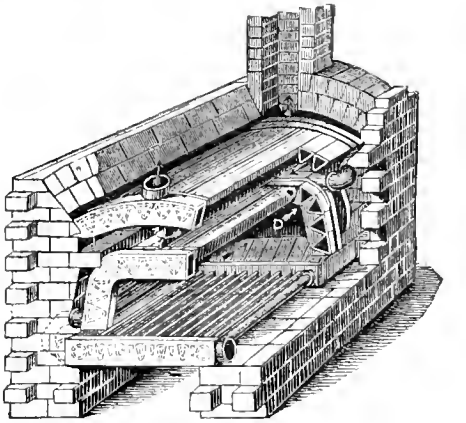

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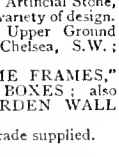

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PARTNERSHIP, JUNIOR, WANTED.—A Gentleman, who has had several years' experience, wishes to obtain a Junior Partnership in an established Nursery. References given. Letters, stating particulars and terms, to be addressed to E. W., 2, Alexander Terrace, Norbiton, Surrey.

City and Borough of Canterbury,

To GARDENERS and OTHERS.

THE COUNCIL of the CITY and BOROUGH of CANTERBURY, acting as the BURIAL BOARD, are desirous of receiving applications from persons possessing a knowledge of Gardening, Trees, Shrubs, and Planting, willing to fill the situation of SUPERINTENDENT or CURATOR, at the new CEMETERY for CANTERBURY, now about to be laid out. The duties will comprise Superintending and Assisting in the Laying-out and Planting, and also, when completed, in taking the General Charge of the Cemetery, and keeping the same in proper order, and the performance of the usual duties connected with the situation. The wages will be 30*s.* per week, with residence at the Cemetery free. The appointment will be made subject to the Bye-laws, Rules, and Regulations to be made by the Burial Board. Applications in writing, stating age and present or previous occupation, and accompanied by testimonials of recent date, to be sent in to my office on or before TUESDAY, February 22 next, endorsed "Application for Appointment as Superintendent of Cemetery." Only those candidates will be required to attend who may be written to for the purpose, and no travelling or other expenses will be allowed to any other candidate.—By order, REST WM. FLINT, Town Clerk.

Town Clerk's Office, Canterbury, January 21, 1876.

WANTED, a HEAD WORKING GARDENER, with taste for flowers; a married man, without incumbrance, to reside in lodge. Two Under Gardeners kept.—Apply, stating references, to A. B., Post Office, Langton, Tunbridge Wells.

WANTED, a good GARDENER, who understands Cows, and will undertake a Small Farm His Wife may have the washing. Wages for man, £1 per week and cottage.—V., The Cedars, Esher, Surrey.

WANTED, a married GARDENER, no children preferred; Wife can Manage Outer Bar of Hotel.—MANAGER, Woodhouse Spa, Horncastle.

WANTED, 25 miles from London, a GARDENER—single Man, who would live in the bothies with another. Must have thorough knowledge of Vines, Peaches, and Plants. Five Gardeners are kept. Wages £1 per week. Good character indispensible.—A. B. C., Mr. Graveney, Ironmonger, Slough, Bucks.

WANTED, a good WORKING GARDENER, married; must understand the cultivation of Flowers, Vines, &c., and make himself generally useful. A lodge and garden will be found.—Apply, by letter, prepaid, to E. M. DAVIES, Esq., Upland, Carmarthen, South Wales.

WANTED, a good WORKING GARDENER (SECOND), in the neighbourhood of Stamford Hill. Wages, 20s. a week.—Apply at 65, Friday Street, City, E.C.

WANTED, 25 miles from London, an UNDER GARDENER—a married Man, without family, age about 40, to live in lodge, and wife to attend the gate. Wages, 17s. per week, and milk. Good character and references indispensable.—A. B. C., Mr. Graveney, Ironmonger, Slough, Bucks.

WANTED, as UNDER GARDENER, a steady young Man, well acquainted with the Culture of Vines, &c. Wages 21s. a week.—Apply by letter to Mr. C., Springfield, Dulwich, S.E.

WANTED, a WORKING FOREMAN (INDOOR); must be a thoroughly practical sober man, who understands and can carry out the routine of Preparing and Forcing Flowers in quantity during the winter months. Three assistants and every facility for the work. State where experience gained and wages required to J. DELAMERE, Nurseryman, Bootle, near Liverpool.

WANTED, a WORKING FOREMAN, in a Market Forcing Garden, near London, to Manage the Men and successfully Grow Grapes for Market.—Apply, stating age and wages required, to C. W. ALDERSON, Langley Lane, South Lambeth, Surrey, S.E.

WANTED, in a Garden, where three are kept, an experienced Man as FOREMAN, competent, in the absence of the Head Gardener, to take charge. Must be a good Florist, and single. State references for character and ability, and lowest wages, to R. L. L., Esq., Sandown Park, Melksham, Wilts.

WANTED, a Young MAN with a knowledge of Greenhouse Plants; also a MARKET GARDENER—one accustomed to Jobbing preferred.—Apply with particulars, R. ROBINSON, Florist, &c., Greatham, near Stockton-on-Tees.

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County Asylum, Prestwich, Manchester.

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WANTED, immediately, an ASSISTANT in the Seed Department, for Counter Work.—Apply to WILLIAM PAUL AND SON, Waltham Cross, N.

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WANTED, an experienced PACKER of General Nursery Stock. Wages, 21s. per week. Unexceptionable reference required as to moral character and stability.—Apply, in own handwriting, stating age, and if married or single, to X. Y. Z., Hounslow.

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B. S. WILLIAMS, having at the present time several very excellent GARDENERS upon his Register, is desirous of placing them in Situations where great experience and trust are required. B. S. W. would at the same time beg to intimate that when a Gardener is applied for that the filling of the situation should be left with him, as that would prevent unnecessary correspondence and delay.—Victoria and Paradise Nurseries, Upper Holloway, London, N.

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GARDENER (HEAD), age 36, married.—GEORGE COATES, Gardener to John Harvey, Esq., Ickwell Bury, Biggleswade, Beds, begs to offer his services to any Lady, Nobleman, or Gentleman requiring the services of a thorough practical Man in every department in the profession. Four and a-half years' excellent character.

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GARDENER (HEAD).—Age 24; understands Vines, Pines, Melons, Cucumbers, Stove and Greenhouse Plants, Kitchen Garden, &c.—S. T., 38, Alfred Street, Billing Road, Northampton.

GARDENER (HEAD).—Thoroughly understands Stove and Greenhouse Plants, Forcing of Fruit, Flower and Kitchen Gardening. Four years' good character.—H. O., 1, Haven Place, Broadway, Ealing, W.

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GARDENER (HEAD, WORKING), where three or more are kept.—Age 32; married, no family. Well understands the management of a Gentleman's place. Good references.—M. S. GROOMBRIDGE, Tunbridge Wells.

GARDENER (HEAD, WORKING).—Single; well experienced in all branches of the profession. Can be highly recommended.—S. M., Mr. F. Knight, Riverhead, Sevenoaks, Kent.

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GARDENER, where one or two are kept.—Age 25, single at present, eight years' good reference as to honesty, sobriety, and experience.—G. SPICKETT, Weir Bank, Teddington, Middlesex.

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FOREMAN, in a Gentleman's Garden.—Four years' good character from last situation at Newstead Abbey, Nottingham.—W. B., Sherwood, Nottingham.

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ASSISTANT.—Aged 25; eleven years' experience. Expert Budder and Grafter, and General Nursery Work. Good character. State Wages, &c.—D. D., Post Office, Ashbourne.

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Opinion of

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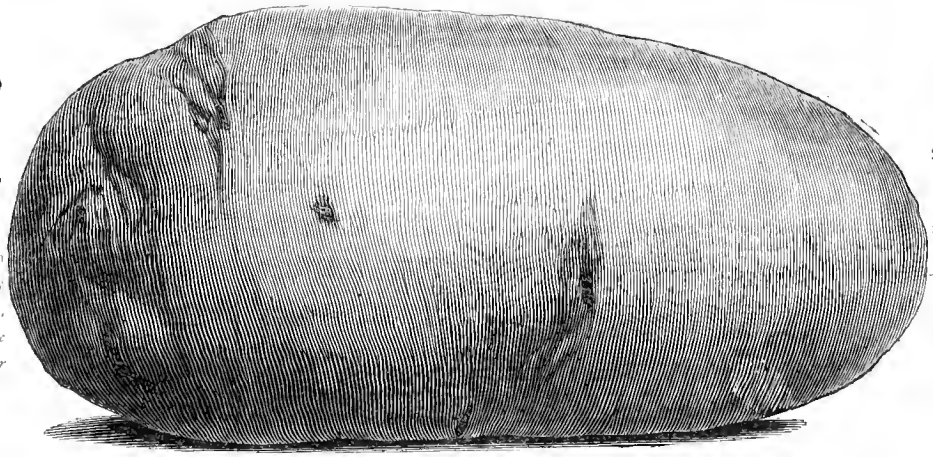

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Magnum Bonum Potato

Opinion of

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"The Magnum Bonum is a first-rate sort for the table, the flesh white, dry, and mealy; *the flavour all that can be desired.* When grown here for trial in 1874 the stools averaged 5 lb. to 7 lb. each of handsome roots. In 1875 the stools averaged 6 lb. to 9 lb. each, grown in ridges on my undrained clay.

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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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GRAND SPRING FLOWER SHOW, MARCH 15 and 16, in the Large Hall, Leeds Horticultural Gardens Company (Limited). Schedules on application.
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DEVON; GRAND SHOW.—The NEXT EXHIBITION of the TIVERTON HORTICULTURAL SOCIETY (open to all England), will be held on MAY 24 and 25, during the visit to the town of the Devon Agricultural Association.—Stove and Greenhouse Plants, £20 (Cup), £5; do. Fohage, £20 (Cup), £5; Azaleas, £15 (Cup), £5; Pot Roses, £10 (Cup), £3; Pelargoniums, £6 (Cup), £2 10s.; Ericas, £5, £2 10s.; Cut Roses, £1 and 10s. Schedules application to
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JAMES DICKSON AND SONS beg to draw attention to their large and Superior Stock of VEGETABLE and FLOWER SEEDS, and will be happy to send Priced Descriptive CATALOGUE post free on application.
108, Eastgate Street, Chester.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

WANTED, a quantity of 1-yr. MANETTI STOCKS Samples and price per 1000 to CRANSTON AND MAYOS, "Cranston's Nurseries," Hereford.

WANTED, COMMON YELLOW BROOM, for Cover Planting. Please to state size and price per 1000 to T. E., Melbury, Dorchester

Pinus Laricio

WANTED, 2000 of the above, 12 to 18 inches. Apply to
STUART AND MEIN, Kelso, N.B.

WANTED, strong Transplanted ASH, LARCH, and SPANISH CHESTNUT. State size, price, and quantity of each; also of any other strong FOREST TREES, to
RICHARD SMITH, Nurseryman, Worcester.

WANTED, strong, clean grown, well rooted, transplanted, SPANISH CHESTNUT, 2 to 3 or 3 to 4 feet. State quantity and price.
FRANCIS & ARTHUR DICKSON & SONS, "Upton" Nurseries, Chester.

MR. LAXTON'S NEW PEAS—For descriptions of "The Shah" and "Standard," also of "Unique," "Dr. Hogg," "Connoisseur" and "Supplanter"—Four First-class Certificates—see large Advertisement at p. 165 of this week's *Gardeners' Chronicle*.
HURST AND SON, 6, Leadenhall Street, London, E.C.

Transit Agency for Plants, Seeds, &c.

C. J. BLACKITH AND CO., late BETHAM & BLACKITH, Cox's and Hammond's Quays, Lower Thames Street, London, S.E.—Forwarders to all parts of the World.

ROSES.—Fine Dwarfs, on the Manetti, of all the leading varieties, 25s per 100.
WILLIAM IRELAND, Pilton Nurseries, Barnstaple.

STANDARD ROSES, fine heads and Stems, best sorts, only £3 10s per 100.
J. JACKSON, Nursery, Kidderminster.

The Oxford Roses, on Cultivated Seedling Brier.

GEORGE PRINCE'S Priced and Descriptive CATALOGUE now ready. All Roses are grown exclusively on the above stock at this establishment.
14, Market Street, Oxford.

New Roses for 1876.

H. BENNETT offers a careful selection of the above, in plants not to be equalled; unusually fine this season; ready in March. DESCRIPTIVE LISTS post-free.—Manor Farm Nursery, Stapleford, Salisbury.

VERBENAS.—Fine Stock Plants of the leading varieties, now ready, at 16s. per 100 to the Trade
JOHN KEYNES, Castle Street, Salisbury.

Vesuvius—Special Offer.

JOHN SOLOMON offers the above, good strong autumn-struck plants, from thumb pots, at 10s. per 100, £4 10s. per 1000, package included. Cash to accompany all orders.
Islington Nursery, Park Street, Islington, N.

VINES.—Fine CANES, some hundreds at 42s. per dozen for planting. FRUITING SIZED CANES, first-class quality, 10s 6d. each. Usual discount to the Trade. List of sorts on application
E. G. HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, N.W.

Vines, Vines, Vines.

B. S. WILLIAMS begs to announce that his stock of VINES is now in fine condition, and ready for sending out. It comprises all the leading kinds, strong Canes of Pearson's Golden Queen.
For prices and description see BULB CATALOGUE.
Victoria and Paradise Nurseries, Upper Holloway, London, N.

VINES.—A superior lot of fine CANES of all the leading sorts for Planting or Fruiting; will carry several fine bunches this year; 5s. each. L. W.'s system of packing saves half the cost of carriage.
LEWIS WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

Notice—Seeds, Seeds.

WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds.
CATALOGUES now ready, which contain every requisite, at fair prices, post-free on application.
Highgate, London, N.

PAMPAS GRASS.—Fine strong plants, in pots, by the dozen or hundred. Price on application to
SUTTON AND SONS, Reading Nursery.

Rhubarb Roots—Rhubarb Roots.

RHUBARB ROOTS—5000 strong Linnæus for Sale. Apply to
WM. EARL, Farmwood Nursery, near Newport, Mon.

CONNOVER'S COLOSSAL ASPARAGUS PLANTS, 4-yr., 5s. per 100, 40s. per 1000. Terms cash
HENRY MINCHIN, The Nurseries, Hook Norton, Oxon.

To the Trade.

SEAKALE, strong, 60s. per 1000; good Planting, 30s. per 1000; for cash only with orders.
RICHARD LOCKE, Red Hill.

Mangel and Swede.

JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself
Bardney Manor, Lincoln.

PARSNIP SEED.—True Guernsey Hollow Crown, 6d. per oz., free by post on receipt of stamps.
J. H. PARSONS, Market Place, Guernsey

CURRANTS and GOOSEBERRIES.—A large surplus stock of 3-yr. to 5-yr. Red Currants, 50s. per 1000; Black Currants, 70s. per 1000; Gooseberries, 100s per 1000. T. EVES, Gravesend Nurseries.

ASPARAGUS PLANTS, sufficient to plant 15 acres—from Connover's Colossal Seed, 10 acres, and from English Seed, the produce of fine plants, 5 acres.
Mr. R. FORMBY, Formby, near Liverpool.

For Sale.

VEITCH'S IMPROVED ASHLEAF KIDNEY POTATOS, 100 bushels at 7s. per bushel.
G. STEVENS, St. John's Nursery, Putney, S.W.

SALES BY AUCTION.

Orchids, Lilies, and Seeds.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, February 7, at half-past 12 o'Clock precisely, 1000 ODONTOGLOSSUMS, principally crispum, from New Grenada; 6000 magnificent bulbs of LILIUM AURATUM from Japan, in very fine condition; CONIFEROUS and other TREE SEEDS, just arrived; cases of ARAUCARIAS, and a consignment of GLADIOLI, LILIES, ANEMONES, RANUNCULI, and other bulbs for Spring planting.

On view the morning of Sale, and Catalogues had.

Plants and Bulbs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on WEDNESDAY, February 9, at half-past 12 o'Clock precisely, first-class Standard and Dwarf ROSES, CAMELLIAS, and other Greenhouse Plants, from Ghent; Specimen CONIFERS, and HARDY ORNAMENTAL and DECIDUOUS TREES and SHRUBS, FRUIT TREES, HERBACEOUS PLANTS, and an importation of GLADIOLI, ANEMONES, RANUNCULI, LILIUMS, &c., for present planting. On view the morning of Sale, and Catalogues had.

Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, February 14, at half-past 12 o'Clock precisely, a Collection of ESTABLISHED ORCHIDS, including—

Cattleya Eldorado splendens	Oncidium Marshallianum
Cypripedium Harrisianum	Cypripedium Dominianum
Batemannia Wallisii	Pescatorea Roezlii
Odontoglossum Roezlii	Lælia Wallisii
Oncidium superbiens	Bollea Lalindei
Pescatorea Dayana	Cattleya Dowiana
Oncidium macranthum	Odontoglossum odoratum
Chysis Limminghei	Dendrobium Hookerianum
Oncidium crispum	Masdevallia Harryana
Vanda Denisoniana	Odontoglossum nævium

And various other choice species.

On view the morning of Sale, and Catalogues had.

Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, February 14, at half-past 12 o'Clock precisely, an Importation of a large quantity, in good condition, of SACCOLABIUMS, just received ex "Khiva" from Bombay; also a quantity of the true and exceedingly rare white flowering DENDROBIUM BARBATULUM; and from Brazil, a quantity of the attractive SOPHRONITES GRANDIFLORA; also an importation from Ecuador of the new and beautiful ODONTOGLOSSUM CIRRHOSUM, just received from South America, in good condition. This superb new Odontoglossum is a much more handsome species than the still rare O. nævium, somewhat resembling it in colour and character, but infinitely superior. It produces fine strong branched spikes of blossom, each flower 3 to 4 inches across, while marked and spotted in the way of O. nævium, exceedingly chaste and beautiful. Also a large importation, in the finest possible condition, just received from Ecuador, of ODONTOGLOSSUM HALLII, many of them in huge masses, the largest and finest ever imported, with from twenty and thirty to forty bulbs each. This rare Odontoglossum is one of the most magnificent of the family. At the same time will be sold an importation from South America of a NEW ONCIDIUM, ONCIDIUM PENTADACTYLON. Plants of this Oncidium have not before reached this country alive.

On view the morning of Sale, and Catalogues had.

Important Sale of Imported Coniferous Tree Seeds.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, February 17, at half-past 12 o'Clock precisely, a large quantity of CONIFEROUS TREE SEEDS, just arrived, including:—

50 lb.	Pinus Lambertiana	3 lb.	Ceanothus integrinus
50 ,,	,, Fremontiana	3 ,,	,, prostrata
30 ,,	,, Sabiniana	10 ,,	Arctostaphylos glauca
20 ,,	,, Llaveana	10 ,,	Torreya californica
15 ,,	,, Benthamianum	5 ,,	Oreodaphne californica
10 ,,	,, Jeffreyi	25 ,,	Juniperus tetragona
5 ,,	,, Parryana	1 ,,	Fremontia californica
5 ,,	,, tuberculata	10 ,,	Eucalyptus globulus
20 ,,	Picea grandis	5 ,,	Libocedrus decurrens
5 ,,	Sequoia gigantea		

On view the morning of Sale, and Catalogues had.

Rare Lilies.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, February 17, at half-past 12 o'Clock precisely, a quantity of the best and choicest known LILIES, in good flowering Bulbs, including the beautiful Lilium Hansoni, now offered for the first time; the rare Lilium Wallichianum, the exceedingly beautiful Lilium Krameranum; also good bulbs of the handsome Lilium Bloomerianum excellatum, and some bulbs of Lilium tigrinum jucundum, a new Lily, which, although belonging to the "tigrinum" section, has glabrous leaves and green stems, with an entire absence of bulbils in the leaf-axils; flowers light cinnabar-red, marked in the lower half with black dots; and several thousand fine bulbs of Lilium auratum.

On view the morning of Sale, and Catalogues had.

Bagshot.

FIVE DAYS' UNRESERVED SALE of NURSERY STOCK (the Land being required for Building Purposes). Worthy the attention of the Trade, and of others largely engaged in planting.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Directors of the Heatherside Nursery Company to SELL by AUCTION on the Premises, The Heatherside Nursery, Bagshot, Surrey, on MONDAY, February 14, and four following days, at 11 for 12 o'Clock precisely each day, the first portion of the extensive Stock, covering an area of 150 acres, and comprising 20,000 Variegated and Green Hollies, 1 to 6 feet; 5000 Common and Portugal Laurels, 2000 choice named Rhododrons, 80,000 Austrian and other Pines, 2000 specimen Coniferæ and Evergreens, and thousands of other Shrubs; Forest and Ornamental Trees in great variety; 10,000 Standard and Dwarf Roses, 2000 Tea Roses in pots.

The stock may be viewed at any time. Catalogues may be had on the Premises, and of the Auctioneer, 98, Gracechurch Street, E.C.

N.B. Particulars and price of the FREEHOLD ESTATE, covering altogether an area of 267 acres, may be obtained on application to Messrs. PROTHEROE AND MORRIS.

Exeter.

IMPORTANT and totally UNRESERVED four days' SALE of an unrivalled collection of specimen EVERGREENS and CONIFERÆ, also thousands of SMALLER STOCK, extending over 100 acres, particularly worthy the attention of Noblemen and Gentlemen improving their estates, and also of the Trade and others largely employed in planting.

MESSRS. PROTHEROE AND MORRIS have been favoured with instructions from Messrs. Lucombe, Pince & Co., to SELL the above by AUCTION at the Exeter Nurseries, Exeter, on TUESDAY, February 8, and three successive days, at 10 for 11 o'Clock each day. The stock may be viewed at any time prior to the Sale.

1876.—Preliminary Notice of

FORTHCOMING SALES, by PROTHEROE AND MORRIS, Nursery, Market Garden, and Estate Auctioneers, Surveyors and Valuers.

FEBRUARY 22.—The EXOTIC NURSERY, Tooting, S.W. By order of Mr R. Parker. Selected assortment of well-grown Nursery Stock.

FEBRUARY 23 and 24.—WINDLESHAM, near Bagshot, Surrey. By order of the Mortgagee, with the concurrence of the Executors of the late Mr. George Baker, deceased. Choice and principally Thriving Young Nursery Stock.

Catalogues of the above may be had (when ready) of the Auctioneers, &c., 98, Gracechurch Street, E.C.

Enfield Town.

GREAT CLEARANCE SALE of about 45,000 TREES and SHRUBS, comprising Standard Apples, Pears, Plums, Walnuts, Cherries, Gooseberries, and Currants, specimen Shrubs of all the choice kinds, large quantity of Limes, Standard Roses, &c.

MR. F. W. SEARLE will SELL the above by AUCTION, on the Premises, Baker Street Nursery, Enfield, on WEDNESDAY and THURSDAY, February 9 and 10, at 12 o'Clock.

Preliminary.—Sale of a very Valuable Collection of Specimen and Half-specimen STOVE and GREENHOUSE PLANTS, the whole of which have been exhibited.

ARTINGSTALL AND HIND (the surviving Partners of the late Firm of CAPES, DUNN & Co.) beg to announce that they have received instructions from Messrs. E. Cole & Sons to SELL by AUCTION, about the middle of April, at their Nurseries, Withington, near Manchester, the valuable Collection of EXHIBITION PLANTS.

Catalogues will be prepared in due course, and further information may be had by applying to the Auctioneers, 5, Princess Street, Manchester.

To Florists, Walthamstow.

TO be LET on LEASE, in Summit Road, Walthamstow, a small compact NURSERY GROUND, of about half an acre, with Cottage and three large Greenhouses, one of which is 80 feet long, 14 feet wide, and heated by hot water. Immediate possession can be had. Rent £40 per annum. For further particulars, apply to

Mr. HOUGHTON, Solicitor, 15A, St. Helen's Place, London, E.C.; or to Messrs. PROTHEROE AND MORRIS, Auctioneers, 98, Gracechurch Street, London, E.C.

To Nurserymen, Seedsmen, Fruit Growers, Florists, and MARKET GARDENERS.

TO be LET, a comfortable DWELLING HOUSE, with SEED SHOP, STABLING, and commodious OUTBUILDINGS attached, large and well-stocked FRUIT GARDEN, several GREENHOUSES, VINERIES, and FORCING PITS, together with PASTURE FIELD and MARKET GARDEN GROUND, containing altogether about 8 acres, having a warm sheltered southern aspect, with excellent Water supply, and within 3 miles of the City of Bristol. The Proprietor, who will give every information, has carried on the Business for over ten years, and is retiring for satisfactory reasons.

A. Z., Post Office, Bristol.

TO be LET for a TERM an excellent set of HOTHOUSES, heated by 1800 feet of hot-water pipes, and fully stocked with ninety Grape Vines, a large number of Maidenhair Fern Plants, Roses, Camellias, &c. There is a ready market at hand for sale of the produce.

M. R., 6, Upper East Hayes, Bath.

FOR SALE, a First-class SEED, CORN, and NURSERY BUSINESS, in a large town in the West of England. Established 21 years; nine years' Lease. Proprietor retiring. Apply

Mr. JOHNSON, Hurst & Son, 6, Leadenhall Street, London, E.C.

ALEX. McKENZIE TESTIMONIAL.—The Executive Committee of this Fund would remind intending Subscribers that the LIST will be CLOSED on the 14th inst. Subscriptions will be received by the Secretary, Mr. J. BERTRAM, Alexandra Palace; or by the Treasurer, Mr. J. T. PEACOCK, Sudbury House, Hammersmith.

CABBAGE PLANTS.—Very strong stocks of the following kinds:—Robinson's Champion Drumhead, Enfield Market, and Red Pickling.

Apply to the Steward, Mr. T. DAVIES, Tangley, near Guildford, stating quantity required.

BLACK CURRANT TREES.—About 500 strong 3-yr. old trees for Sale, as good as can be grown. Price on application.

CHAS. CHESTERMAN, Market Gardener, 8, Southampton Street, Reading, Berks.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.

Mr. WEBB, Calcot, Reading.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

GRAPE VINES—fine Planting Canes of Black Hamburgh, 40s. per dozen.

Gold-edged POLYANTHUS, show PANSY and VERBENA SEED, Eckford's choice strains, 1s. 6d., 2s. 6d., and 5s. per packet. Price to the Trade on application.

HENRY ECKFORD, Nurseryman, Seedsman, and Florist, North Wilts Nurseries, Swindon.

Special Offer to the Trade, to Clear the Ground.

MULBERRIES, Standard, the finest lot in England; also extra tall and strong Standard PEARS. Prices low. Apply to

BENJAMIN R. CANT, Nurseryman, Colchester.

Verbenas, Verbenas, Verbenas.

WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.

Cemetery Nursery, Gravesend, S.E.

C. GUY AND SON beg to offer, for Cash, strong autumn-struck Plants of the following GERANIUMS:—Vesuvius, 8s. per 100; Maid of Kent, 8s. per 100; Mrs. Pollock (from single pots), 15s. per 100.

Monkton Nursery, Ryde, Isle of Wight.

The Best Lawn Mixture.

JAMES DICKSON & SONS' FINEST LAWN MIXTURE, for Forming New or Renovating Old Lawns, is VERY SUPERIOR to all others.

108, EASTGATE STREET, CHESTER.

To the Trade.

ALDER, 1-yr. old.—Sample and Price on application to

JOHN BLAKE AND SONS, Dangan Nurseries, Summerhill, Enfield, Ireland.

LARCH, 1½ to 2 feet, 20s. per 1000. Double Scarlet CHESTNUT, 10 to 12 feet, 60s. per 100; do., Double White, 60s.

J. JACKSON, Nursery, Kidderminster.

FOR SALE, 50 sacks LATE AMERICAN ROSE POTATOS, £6 per ton.

WANTED to PURCHASE—MYATT'S ASHLEAF (Seed), and PATERSON'S VICTORIA (Seed and Ware). Apply by letter, S., 14, Oxford Street, Reading.

Verbenas, Verbenas.

JOHN SOLOMON offers mixed sorts of the above, good strong autumn-struck plants, in store pots, with plenty of good cuttings, at 1s. per store-pot, package included. Cash to accompany all orders.

Islington Nursery, Park Street, Islington, N.

FRUIT TREES.—One of the largest stocks in the county, consisting of Standard and Pyramid CHERRIES, APPLES, PEARS, and PLUMS, from 70s. per 100. Also a large quantity of extra strong Standard and Espalier GREEN GAGES. Catalogues of

T. EVES, Gravesend Nurseries.

Apple and Pear Scions for Spring Grafting.

A. M. C. JONGKINDT CONINCK offers the above at low prices. A List of the sorts and prices on application.

Tottenham Nurseries, near Zwolle, Netherlands.

LARCH, 2-yr. Seedling, 9 to 15 inches high, fine, 6s. per 1000.

J. JACKSON, Nursery, Kidderminster.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy.

The Ottershaw Nursery, Chertsey.

To the Trade.

SEAKALE SETS, for planting, very fine, 30s. per 1000. 100,000 COMMON LAURELS of all sizes, from 1 foot to 5 feet, price on application.

WM. WOOD AND SON, Woodlands Nurseries, Maresfield, Uckfield, Sussex.

The Quickest Growing Forest Trees.

POPLARS, the true Italian, same as extensively planted on the Estate of the Duke of Leeds and other large properties in Yorkshire; also strong well transplanted FOREST and ORNAMENTAL TREES of all kinds, cheap. Samples and prices on application.

W. JACKSON AND CO., Nurseries, Bedale, Yorkshire.

NEW PEAR, "LUCY GRIEVE."—First-class Certificate; described in Dr. Hogg's new *Fruit Manual*, and in our own CATALOGUES.

E. G. HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, N.W.

GERANIUMS.—An offer wanted for 150 dozen, early autumn-struck, including Tricolors, Bronze, Crystal Palace Gem, Vesuvius, Tom Thumb, Christine, Stella, Glory of Waltham, Rebecca, Lord Palmerston, Little David, Shrubland Pet, Flower of Day, Bijou, Ivy-leaved; also for 40 dozen yellow CALCEOLARIAS.

Z. A. B., Post-office, Wallingford, Berks.

BEECH, BEECH, BEECH—2 to 3 and 3 to 3½ feet, well rooted, 7s. 6d. per 1000; also LAURUSTINUS, ARBUTUS, PORTUGAL LAURELS, PINUS INSIGNIS, CEDRUS DEODARA, THUJA GIGANTEA—all cheap.

SAMUEL BALE, Westacott Nursery, Barnstaple.

Black Italian Poplar.

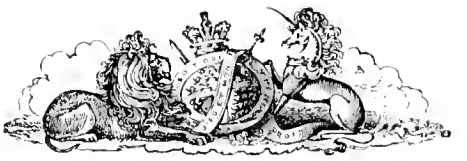
BENJAMIN REID AND CO., Forest Tree Nurseries, Aberdeen, make special offer in quantity of first-rate plants of this rapid-growing and profitable Poplar, 4 to 5 feet and 5 to 6 feet, at 20s. and 25s. per 1000 respectively. This timber tree has realised 40s. per tree, forty years old. The Trade also supplied.

R. AND F. ALLUM, The Nurseries, Tamworth, have a fine stock of the following, which they beg to offer at very low prices:—Dwarf ROSES, very strong, of leading kinds; also half-standard Roses with good heads; strong RED CURRANT TREES, Standard MORELLO CHERRY TREES, Common LAURELS, and MYOSOTIS AZORICA, DISSITIFLORA and ALBA. Price on application. The Trade supplied.

VEGETABLE and FLOWER SEEDS.—In these days of Handsome, Beautiful, and, we may add, Costly CATALOGUES, perhaps few can be satisfied now with a plain, common-sense one. To such, however, we shall be glad to forward ours, free on application. We undertake to supply really good Seeds at moderate prices.

W. P. LAIRD AND SINCLAIR, Nurserymen and Seedsmen, Dundee, Scotland.

By Her Majesty's Royal Letters Patent.



By Her Majesty's Royal Letters Patent.

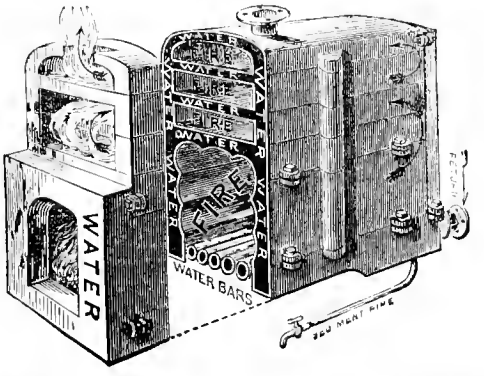
RIGHT IS MIGHT

PERFECTION!—PERFECTION!

THE "VICTORIA" HOT-WATER CIRCULATOR

is now openly pronounced, by all who have had the slightest experience with it, to be the only Boiler really adapted for its purpose; no other bears the merest comparison, and it is destined to become the only and most popular Apparatus suitable to the present day. It is replacing and superseding the most modern appliances, and hundreds of the so-called Boilers in Castles, Hospitals, Prisons, Warehouses, Churches, some of the largest Buildings and Horticultural Establishments, including the Botanic Gardens, Sydney, New South Wales, in which places the science and skill of Hot-water Engineering have been far more highly developed and advanced than hitherto ever before achieved.

Many eminent Men confirm our statement, that we give the same heat as any Tubular or Saddle, with half the fuel.



A BREAKDOWN

IS

UNKNOWN.

See Illustrated Prospectus including hundreds of Places where the "Victoria" Hot Water Circulator is fixed, and the respective lengths of Piping attached, and all Particulars, Testimonials &c. sent Post-free. Every Circulator erected by H. C. & Co. is Warranted for Ten Years, and any other Apparatus, defective, undertaken to be made perfect. As H. C. & Co.'s Engineering Business is strictly confined to Warming with Hot Water, all work is carried out far beyond the usual Style.

H. Carmell & Co.
48 & 49 King Street, Woolwich
and Berwick on Tweed

TRY HOOPER'S SEEDS this year.

ALL CHOICE NEW POTATOS.

SNOWFLAKE,	EXTRA EARLY VERMONT,
EUREKA,	AND
ALPHA,	BROWNELL'S BEAUTY
LATE ROSE,	

All perfectly true; a fact of importance to Gardeners.
HOOPER AND CO. are prepared to meet all competition in price, as they have enormous Stocks.

HOOPER'S COVENT GARDEN Stores, London, W.C.

The New Japan Apple.

PYRUS MAULEI, is now distributing, at 21s., 15s., and 10s. 6d. each. It is as hardy as the common Apple, blossoms at the same time; the flowers are of a vivid orange-scarlet, fruit of a bright transparent lemon colour, very fragrant, about the size of the Golden Pippin Apple, which is produced in the greatest profusion.
The jam of this season has been tasted by some of the best judges and connoisseurs, and pronounced exquisite, and perhaps superior to any English or foreign fruit.
W. MAULE AND SONS, The Nurseries, Bristol.

EWING AND CO.'S TRADE LIST, also TRADE and RETAIL LISTS of NEW ROSES for 1876, CLEMATIS, &c., are now ready. 10,000 GOOSEBERRIES, 6000 NUTS, strong, fine, and cheap; also ELMS, LIMES, CHESTNUTS, and other TREES for AVENUES, 9 to 20 feet, extra fine. LADY HENNIKER APPLE, 3s. 6d. and 7s. 6d. each. EWING'S MILDEW COMPOSITION, 1s. 6d. and 3s. per bottle.
Royal Norfolk Nurseries, EATON, near Norwich.

Bargains.

H. BLANDFORD, The Dorset Nurseries, Blandford, offers the following trees, which are exceedingly well grown, with plenty of roots and worth nearly double the money:—
CHERRIES, Morello, handsome fruiting trees, pyramids, 6 feet high, 25s. per dozen.
VINES, good planting canes of the following varieties, warranted true to name, viz.—Alicante, Bowood Muscat, Black Hamburgh, Buckland Sweetwater, Foster's Seedling, Gros Colman, Muscat of Alexandria, and Trebbiano, 3s. each, 30s. per dozen.
ROSE, Dwarf, very fine, leading varieties only, 50s. per 100.
ASPARAGUS ROOTS, 4-yr. old, 3s. 6d. per 100, 30s. per 1000.
ARAUCARIA IMBRICATA, 2 feet, fine, 30s. per dozen.
ARBOR-VITÆ (American), 7 to 8 feet, 21s. per dozen.
CUPRESSUS LAWSONIANA, 6 to 7 feet, specimens, 25s. per dozen.
CEDRUS DEODARA, 1½ foot, transplanted autumn, 1874, 12s. per dozen, 90s. per 100.
HIBISCUS SYRIACUS, 4 to 5 feet, bushy, 9s. per dozen.
THUJA AUREA, 1½ foot, well furnished, 25s. per dozen.
„ ELEGANTISSIMA, 1½ foot, 25s. per dozen.
HORNBEAM, 5, 6, and 7 feet, 10s., 15s., and 25s. per 100.
CHESTNUT, Horse, fine for avenues, 8 to 10 ft., 80s. per 100.
OAK, English, quartered, 7 to 8 feet, 50s. per 100.
SPRUCE, 1½ foot, 45s. per 1000.
WHITETHORN (Quick), 4-yr. transplanted, 2½ to 3 feet, extra stout, clean, and well rooted, 20s. to 25s. per 1000.
Special offer will be made to the Trade.

JOSEPH SMITH, JUN., has to offer the following, at per 1000:—
ALDER, 1 to 1½ foot, 10s.; 1½ to 2 feet, 12s.; 2 to 3 feet, 20s.; 3 to 4 feet, 28s. ASH, Mountain, 1½ to 2 feet, 15s.; 2 to 3 feet, 20s.; 3 to 4 feet, 25s.; 6 to 8 feet, 75s.; 8 to 10 feet, 110s.; 10 to 12 feet, 140s. BEECH, 1 to 1½ foot, 15s.; 1½ to 2 feet, 18s. BIRCH, 1 to 1½ foot, 15s.; 1½ to 2 feet, 18s. ELM, 1½ to 2 feet, 12s.; 5 to 8 feet, 45s. SPRUCE, 1½ to 2½ feet, 25s.; 2½ to 4 feet, 35s.; Scotch, 3 to 4 feet, 30s.; 3½ to 4½ feet, 35s. LARCH, 1 to 1½ foot, 15s. LIMES, 2 to 2½ feet, 45s.; 2 to 3 feet, 55s.; 3 to 4 feet, 75s.; 4 to 5 feet, 95s. MAPLE, Norway, 4 to 5 feet, 40s.; 5 to 6 feet, 55s.; 6 to 8 feet, 75s. OAKS, 2 to 3½ feet, 28s.; 3½ to 5 feet, 40s.; 5 to 8 feet, 60s. PINUS AUSTRIACA, 1½ to 2 feet, 20s.; 2 to 2½ feet, 25s.; 2½ to 3½ feet, 30s.; 3 to 4 feet, 40s. POPLAR, Black Italian, 2 to 3 feet, 20s; Ontario, 2 to 3 feet, 20s.; 3 to 4 feet, 35s.; 6 to 8 feet, 90s. PRIVET, Evergreen, 9 to 15 inches, 8s.; 1 to 1½ foot, 10s.; 1½ to 2 feet, 14s.; 2 to 2½ feet, 15s.; 2 to 3 feet, 17s. QUICK, 2-yr., transplanted, 8s.; 3-yr., 10s.; 4-yr., 12s. SYCAMORE, 4 to 6 feet, 30s.; 5 to 7 feet, 35s. WILLOWS, of sorts. LAUREL, Common, 9 to 12 inches, 25s.; 1 to 1½ foot, 35s. COTONEASTER MICROPHYLLA, 1 to 1½ foot, 70s.; 1½ to 2 feet, 90s.; do SIMONDSII, 2 to 3 feet, 50s.; 3 to 4 feet, 80s. RHODODENDRONS, &c.
CATALOGUE of General Stock sent on application.
Moor Edge Nurseries, Tansley, near Matlock, Derbyshire

CERASUS LAURO-CERASUS
CAMELLIÆFOLIA (the Camellia-leaved Laurel)—This extraordinary and elegant Laurel was raised by Mr. Wood, of Woodbridge, in Suffolk, on whose behalf we are now offering it for the first time to the public. The leaves are light green, like the common Laurel, but differ from it in shape in being elegantly curled, like a Camellia leaf, or more closely resembling in form the beautiful Croton volutum.
The effect of the plant, grown as a pyramid and well pruned, is peculiarly striking, and if planted close as an edging plant, and pinched well back, it produces a very neat and pleasing appearance.
We propose to distribute this well-known variety at the following low prices, being desirous of seeing it largely used, as it deserves to be, for the purposes above-mentioned:—Per plant, 5s.; per dozen, 42s. Special offer to the Trade.
J. AND C. LEE, Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

DAVID LLOYD AND CO. (LIMITED).
CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.
Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following:—
J. T. RUBERY, 8a, Rumford Place, Liverpool.
SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
R. AND J. TAYLOR, 17, Vachel Road, Reading. [ham.
AGENTS WANTED.

To the Trade and Others.

SURPLUS STOCK, CHEAP.
VINES, fruiting and planting; dwarf-trained PEACHES, NECTARINES, PLUMS, and CHERRIES; BLACK CURRANTS; LAURELS, Common, 3 to 6 feet; PRIVET, 3 to 5 feet; CHESTNUTS, Horse, 6 to 10 feet; Scarlet do., 6 to 8 feet; ELMS, 6 to 8 feet; MAPLES, Common, Norway, and Scarlet, 6 to 9 feet; POPLARS, Abele, Black Italian, and Balsam, 6 to 10 feet; Lombardy do., 6 to 12 feet.
The above are all clean and well grown. Price on application to
B. MALLER, The Nurseries, Lee and Lewisham, S.E.

A BARGAIN is offered in a lot of very extra strong BLACK HAMBURGH VINES, which must, on account of alterations, be moved out of a border in which they were planted to be fruited this year. They have never borne a berry, and would ripen 20 lb. to 30 lb. of fruit well. Strong Canes, with splendid healthy roots, 10s. 6d. each.
L. WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

HANDSOME LAWN TREES and EVERGREENS.
PICEA MAGNIFICA, true, 2 to 5 ft., 21s. each and upwards.
P. AMABILIS, true, 2 to 3 feet, 10s. 6d. each and upwards;
P. NOBILIS, 1 to 6 feet, 2s. each and upwards; P. NORDMANNIANA, selected varieties, 5 feet, 7s. 6d. each and upwards; P. PARSONSI, 4 to 10 feet, 15s. each and upwards;
P. NOBILIS GLAUCA, 2 to 5 ft. 7s. 6d. each and upwards.
CUPRESSUS LAWSONIANA, in fine selected variegated and other varieties.
RETINOSPORA, in great variety, variegated and others.
THUJA, CUPRESSUS, CEDRUS, and ABIES, in many varieties, and nearly every variety of CONIFERÆ, offered at very low prices, to effect a clearance.
Some of the above, being selected seminal varieties, are very magnificent specimens. They have been carefully transplanted and grown for Sale. Application, either personally or by letter, at The Gardens, Whitchurch Rectory, Edgware, N.W., will receive every attention.

AVENUE TREES.

	Girth 4 ft. from ground.
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10 inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8 „
MAPLES, Norway, 12 to 16 feet high ..	5 to 8 „
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10 „
„ Scarlet, 10 to 14 feet high	8 to 10 „
„ Double, 10 to 14 feet high	8 to 10 „
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10 „
ELMS, 15 to 18 feet	7 to 9 „

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.
Knap Hill Nursery, Woking, Surrey.

JAMES BIRD, of the American Nurseries, Downham, offers the undermentioned, in fine healthy condition—price on application:—
BIRCH, Common, 6 to 8 feet.
CHESTNUT, Horse, 8 to 10 and 12 feet.
ELM, Chichester, 10 to 12 and 14 feet.
OAK, Levant, 8 to 10 and 12 feet.
THORNS, Standard, named.
CHERRIES, Standard, named.
ABIES DOUGLASII, 8 to 10 feet.
CEDRUS ATLANTICA, 1 to 2 feet.
RETINOSPORA PISIFERA, 2 to 3 feet.
THUJA LOBBII, 3 to 4 feet.
BOX, Tree, 1½ to 2 and 2 to 3 feet.
CEDAR, Red, 2 to 3 feet.
CHESTNUT, Horse, 1 to 1½ foot.
„ Spanish, 1 to 1½ foot.
„ 1-yr. seedlings.
ACER NEGUNDO, 1-yr. seedlings.
LAUREL, Common, 1-yr.
VIRGINIAN CREEPER, fine stuff.

RICHARD SMITH'S SEED LIST
CONTAINS
THE BEST KINDS
OF
VEGETABLE
AND
FLOWER SEEDS,
and forwarded Free on application.

SMITH'S No. 1 COLLECTION	£3	3	0
SMITH'S No. 2 COLLECTION	2	2	0
SMITH'S No. 3 COLLECTION	1	11	6
SMITH'S No. 4 COLLECTION	1	1	0
SMITH'S No. 5 COLLECTION	0	15	0
SMITH'S No. 6 COLLECTION	0	12	6
EXTRA LARGE COLLECTIONS from £5 5s. to	10	10	0

The above are liberally and judiciously selected, and forwarded carriage free, excepting Nos. 5 and 6.

	Per packet.—s.	d.
CUCUMBER, Smith's Fine Long Frame	1	0
„ Monro's Duke of Edinburgh	1	6
CAULIFLOWER, Veitch's Autumn Giant	1	6
CELERY, Sandringham Dwarf White	1	0
CABBAGE LETTUCE, Worcester Champion	1	0
COS LETTUCE, Worcester White	1	0
MELON, Eastnor Castle Green-flesh	1	6
„ Queen Emma	1	0
ONION, The Banbury	1	0
CYCLAMEN PERSICUM, splendid large flowering ..	1	0
POLYANTHUS, choice gold-laced	1	0
ASTER, Truffaut's French, 12 splendid colours ..	1	0
„ Victoria, 10 splendid colours	1	0
„ Betteridge's Globe Quilled, 12 splendid colours ..	1	0
GERMAN STOCK, large flowering, 12 splendid colours	1	0
PHLOX DRUMMONDII, 12 colours	1	0
PRIMULA, finest fringed .. .. .. 1s. 6d. and	2	6
CINERARIA, saved from finest flowers .. 1s. 6d. and	2	6
CALCEOLARIA, finest rich spotted .. 1s. 6d. and	2	6
CENTAUREA CANDIDISSIMA	1	0
PYRETHRUM, Golden Feather	0	6
ZINNIA, double, 8 colours mixed	0	6

The above Free by Post.
RICHARD SMITH, Seed Merchant, Worcester.

CHOICE HYBRID GLADIOLI.
The Gladiolus being a special feature in our business, we respectfully invite Growers of this magnificent Autumn Flower to send for our CATALOGUE of Prize Varieties before making their annual purchases. In it all the best sorts are described, and the prices quoted are very moderate.
ROBERTSON AND GALLOWAY, Seed Merchants and Nurserymen, 157, Ingram Street, Glasgow.

Dwarf-trained Peaches and Nectarines, true to name.
Price 24s. per dozen, 150s. per 100.
THOMAS WARNER can supply fine trees of the following:—
PEACHES—Crimson Galande, Early Alfred, Early Ascot, Early Leopold, Early Louise, Early Rivers, Early Savoy, Early Silver, Rivers' Early York, Goshawk, Lady Palmerston, Golden Rathripe, Marquis of Downshire, Nectarine Peach, Radclyffe, Sea Eagle, Stump the World.
NECTARINES—Albert Victor, Prince of Wales, Rivers' White. The Nurseries, Leicester Abbey.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving Size, Price, Popular and Botanical Names, Derivations, Description, Form, Colour, Foliage, Growth, Timber, Use in Arts, Native Country and Size there, Situation, Soil, and other information, with copious Index of their many Synonyms. Free by post for six stamps.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

Chinese Arbor-vitæ.

FRANCIS R. KINGHORN has to offer at a low price a few hundreds of the above, from 3½ to 6 feet high, suitable for screens and hedges, all fine grown and well rooted.
Also VENN'S BLACK MUSCAT and DUKE OF BUCCLEUCH VINES.
Prices of each on application.
Sheen Nursery, Richmond, Surrey.

LILIUM AURATUM and all known Lilies, in superb Bulbs, at low prices.
DIOSPYROS KAKI—the grand new hardy Fruit. [&c.
HYPERICUM PATULUM—grand hardy Flowering Shrub;
See our advertisements in *Gardeners' Chronicle*, Nov. 19 and 26, 1875; also our CATALOGUE, free on application.
The NEW PLANT and BULB COMPANY, Lion Walk, Colchester.

HARDY AZALEAS for POTTING and FORCING.—Choice Belgic, American, and other hardy Azaleas, together with RHODODENDRON FRAGRANS and AZALEA AMŒNA are offered in nice compact plants, well set with bloom-buds, at 18s. and 21s. per dozen. Few plants are more acceptable for furnishing Cut Flowers or decorating the Conservatory throughout the early spring.
WM. MAULE AND SONS, The Nurseries, Bristol.

Abies excelsa aurea (the Golden Spruce).

MESSRS. J. AND C. LEE beg to announce that they now intend to send out this magnificent tree. When planted in the full sunlight the whole tree is suffused with the richest gold. First-class Certificate from the Floral Committee of the Royal Horticultural Society. Well-established plants, 21s. each. A few of extra sizes, 31s. 6d. and 42s. each. The usual allowance to the Trade.
Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

Vines, Vines—Dwarf Roses.

PLANTING and FRUITING CANES of Black Hamburgh, Black Alicante, Lady Downe's, Muscat of Alexandria, White Lady Downe's, Madresfield Court, Gros Colman, Mrs. Pince, Trentham Black, Buckland Sweetwater, Foster's Seedling, Dr. Hogg, Muscat Hamburgh, Royal Muscadine, and West's St. Peter's, 2s. 6d. to 5s. each; Waltham Cross, 5s. to 7s. 6d. each; Pearson's Golden Queen, 21s. to 31s. 6d. each.
DWARF ROSES, extra strong, 6s. per dozen.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

CHOICE SEEDS, &c.—
CUCUMBER, Beauty of St. Albans, the best of the Telegraph section, 1s. 6d. per packet.
„ Telegraph, true stock, 1s. per packet.
„ Duke of Edinburgh (Daniels), 1s. per packet.
SOLANUM CAPSICASTRUM, hybrids, from plants selected from the three best stocks in Covent Garden, 6d. and 1s. per packet.
LOBELIA PUMILA MAGNIFICA, 1s. per packet.
CELOSIA PYRAMIDALIS, saved from Mr. R. S. Yates' fine strain, 6d. and 1s. per packet.
LOBELIA PUMILA MAGNIFICA, seedling plants, 5s. per 100; plants from cuttings, 12s. 6d. per 100.
All orders prepaid.
J. BESTER, White Hart Lane, Tottenham, N.

SNOWFLAKE POTATO—Having grown and imported largely of this splendid new variety, we can offer FINE ENGLISH-GROWN SEED, price 6d. per lb.; 6s. per peck of 14 lb.; 21s. per bushel of 56 lb. Much cheaper by the sack or ton.
FINE IMPORTED TUBERS, same price. Orders of 21s. and upwards carriage paid.
P. M'Kinlay, Esq., Beckenham, a well-known authority, writing of this Potato in the *Gardeners' Magazine*, Jan. 15 last, says:—"My experience with American varieties has been somewhat extensive, and I find that they generally improve as they become acclimatised. . . . I have no doubt Snowflake will improve in quality, and will become one of the best in cultivation."
DANIELS BROTHERS, Seed Growers, Norwich.

New Cucumber for 1876.

LEE'S ALTRINCHAM DEFIANCE.—This Cucumber is quite a novelty, and is very distinct from anything hitherto offered to the public; it is a smooth variety, very dark green, a great cropper, and is quite unequalled in quality. Its average length is from 15 to 20 inches. The seed, which is now ready, will be sent out in sealed packets only, price 2s. 6d. per packet of five seeds. Usual allowance to the Trade.
From the Altrincham and Bowdon United Horticultural Benefit and Provident Society:—"Having seen Mr. Lee's Cucumber growing, as well as a brace before us, and taking into consideration the good qualities of it, we consider it to be one of the best ever offered to the public. We therefore name it Lee's Altrincham Defiance. (Signed) J. WALKER, Sec.
H. LEE, Florist and Landscape Gardener, Peel Causeway, Altrincham, Cheshire.

MR. LAXTON'S NEW PEAS FOR 1876.

MESSRS. HURST & SON

Have been entrusted with the introduction of the following Two First-class New Peas raised by MR. LAXTON, and which are recommended as being of very high quality and distinct:—

THE SHAH.

A short-strawed, early white wrinkled marrow, of the same height and as early as "Ringleader," described by the Royal Horticultural Society as having very full pods, produced abundantly, and containing from eight to nine very large Peas of very fine quality, and as being an exceedingly fine and and early prolific white wrinkled variety. First-class Certificate Royal Horticultural Society.

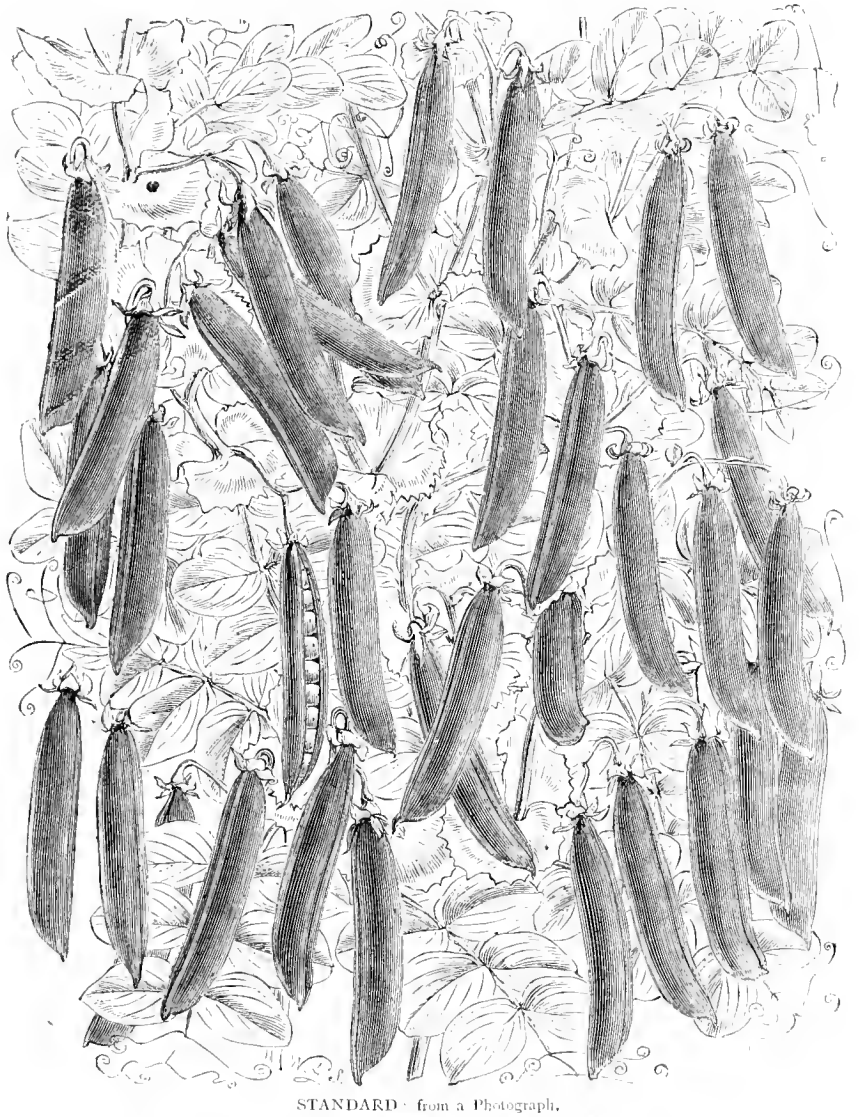
Price 5s. per sealed quarter-pint packet.

STANDARD.

Unquestionably the most useful maincrop blue wrinkled Pea yet raised, and will take the same place as a prolific market Pea of high quality amongst blue wrinkled marrows as "Fillbasket" has in round Peas. Described by the Royal Horticultural Society as having long curved pods containing from nine to eleven Peas of large size and excellent quality in each; and as being a very handsome and prolific Pea.

Mr. Laxton, in a letter to us, says, "I cannot find a fault with this Pea," and Mr. Gilbert, of Burghley, says of it, "It is certainly the best Pea I know." Height 3 feet.

Price 5s. per sealed quarter-pint packet.



STANDARD: from a Photograph.

The following Novelties of 1875 can also be supplied:—

SUPPLANTER.

A first-rate Exhibition Pea of fine quality—the earliest of the "Veitch's Perfection" type. Height, 3 feet, handsome, and very prolific, producing very large pods in pairs; plant very robust and vigorous. First-class Certificate.

Price, 5s. per sealed half-pint packet.

CONNOISSEUR.

A most distinct and delicious late Pea, raised from "Ne Plus Ultra." Height 6 feet.

Price 5s. per sealed half-pint packet.

UNIQUE.

A very handsome and prolific dwarf early Pea with long deep green coloured pods, coming into use at the same time, and of the same height as "Little Gem." First-class Certificate.

Price, 5s. per sealed half-pint packet.

DR. HOGG.

An early "Ne Plus Ultra," coming in one week after Dillestone's. Height, 3 feet. The earliest green wrinkled marrow, very sweet, and of a beautiful deep green colour. First-class Certificate.

Price 5s. per sealed half-pint packet.

£20 will be offered in Prizes for Mr. Laxton's Peas in 1876, viz.:—£10 in Four Prizes at the Royal Horticultural Society's Show, in July next, for any six varieties introduced by us, to include the "Shah" and "Standard," 50 pods of each; and £10 to repeat the Prizes at the Society's Provincial Exhibition.

"Omega," the finest Late Pea, and "William the 1st," the Earliest Green Wrinkled Marrow, in quantity at Special Rates on application. For other varieties of Mr. Laxton's Peas, see our General List.

HURST & SON, 6, LEADENHALL STREET, LONDON, E.C.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of
WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

JOSEPH SMITH, SEN., Tansley and Scotland Nurseries, near Matlock, Derbyshire, has for Sale:—
RHODODENDRON PONTICUM, 4-yr. old seedlings, not grown on bog, but on heath soil, with fine roots, stiff healthy plants, 3 to 4 inches high, 5s per 1000. Also Hybrid Catawbiense, named sorts, 7s 6d. per 1000, with transplanted, from 1 to 1½ foot up to 3 and 4 feet, at very low prices, which can be had on application.
OAKS, large quantity, 3 to 4 and 4 to 5 feet.
With a GENERAL NURSERY STOCK. Prices on application.

Extra Strong Vines in Pots.

DICKSON, BROWN, AND TAIT, SEED MERCHANTS, 43 and 45, Corporation Street, Manchester, can supply several hundred extra strong, well-ripened, short-jointed CANES, for Fruiting in pots or Planting, of the following varieties:—Black Alicante, Bowood Muscat, Buckland Sweetwater, Foster's Seedling, Gros Colman, Black Hamburgh, Lady Downe's, Madresfield Court, Mrs. Pince, Muscat of Alexandria, &c. Prices on application.

New and Genuine Seeds Only

Now ready, gratis and post-free,

BRUNNING AND CO.'S New Illustrated and DESCRIPTIVE CATALOGUE of the above for the present season, containing a selection of the choicest novelties, together with the most approved older varieties, profusely Illustrated, and contains a splendid Coloured Plate representing a group of choice Hybrid Gladioli, for the growth of which their Nurseries are noted. Forwarded post-free to all applicants.
ISAAC BRUNNING AND CO., The Yarmouth Seed Establishment, 1, Market Place, Great Yarmouth

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SELECT VEGETABLE and FLOWER SEEDS.—Amateurs and others who may be at a loss in making a suitable selection of Seeds for the Garden, will be greatly aided by referring to our Priced Descriptive CATALOGUE of VEGETABLE and FLOWER SEEDS for 1876, which will be sent free on application. All seeds delivered free of carriage as formerly.
THOMAS KENNEDY AND CO., Seed and Nursery Establishment, Dumfries, N.B.

EDWARD TAYLOR, NURSERYMAN, Malton, Yorkshire, offers as under:—
HOLLIES, Green, 9 to 12 inches, 10s. per 100; 1 to 1½ foot 15s. per 100.
COTONEASTER SYMONDSII, 2 to 2½ feet, 2s. per dozen, 12s. 6d. per 100.
LIMES, Red-twigged, about 6 feet, very fine, 30s. per 100.
DIELYTRA SPECTABILIS, 6s. per dozen, 40s. per 100.
SNOWBERRIES, 2 to 3 feet, 30s per 1000.
THORNS, LARCH, &c., transplanted; price on application.

Cabbage Plants—Cabbage Plants

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.
Wonersh Nursery, Guildford, Surrey

Special Offer to the Trade for Cash.

JOSEPH GREEN, The Nurseries, Garforth, near Leeds, has to offer:—
10,000 GOOSEBERRIES, 60s per 1000
10,000 RASPBERRY CANES, 30s. per 1000.
5,000 CURRANTS, Red and White, 5s per 100.
20,000 OAKS, English, 2 feet, strong, 20s. per 1000.
POTATOS, Myatt's Prolific, 20s per 12 stones.
" Haigh's Seedling, 20s. per 12 stones.
" Real Imperial Ashtop, 20s. per 12 stones.
" Belgian Kidneys, first-rate variety, 20s. per 12 stones.

EWING AND CO. beg to offer to the trade Dwarf-trained PLUMS, Victoria, Prince Engelbert, Kirke's, &c., very fine trees. NUTS, Cosford, white and frizzled Filberts. GOOSEBERRIES and RED CURRANTS, very strong and fine. PICEA PINSAPO, 3 to 4 feet. BOX, Pyramid, 2 feet. IVY, palmated, Raginetana, variegated sorts, &c., 2 to 4 feet, staked. ASPARAGUS, fine. See TRADE LIST, now ready.—Nurseries, Eaton, Norwich.

NOVELTIES.—More beautiful and choice than any that have been offered to the public for many years. Sweet-scented free-blooming hybrid RHODODENDRONS, AZALEAS, &c., which have received First-class Certificates of Merit.
DESCRIPTIVE PRICED LIST free on application to ISAAC DAVIES, Nurseryman, Ormskirk, Lancashire.

DAHLIAS, German, French, and Belgian; NEW GLADIOLI; LILIUM GIGANTEUM. Splendid seed, per 1000, 17s.; 500, 10s.; 100, 2s. 6d., free by post.
Our AUTUMN LIST will be sent, post-free, to all applicants.
ANT. ROOZEN AND SON, Overveen, near Haarlem, Holland.

To the Trade.—Seed Potatos.

H. AND F. SHARPE are prepared to make Special Offers of SEED POTATOS grown on their own Farms from the finest selected stocks. Their List this season comprises all the English and American varieties worthy of cultivation. The prices will be found very moderate.
Seed-growing Establishment, Wisbech.

Planting Season.

CHARLES BURGESS begs to offer the following:—Strong Standard, Pyramid and Dwarf-trained FRUIT TREES, ROSES, Evergreen and Deciduous FLOWERING SHRUBS, English OAKS, ELMS, and LIMES, up to 10 feet; Larch, Spruce, and Scotch FIRS, and a general Nursery Stock. Prices on application.
The Nurseries, London Road, Cheltenham.

ROBERT NEAL, JUN., and GEORGE NEAL, NURSERYMEN, Wandsworth Common, S.W., beg respectfully to call the attention of Gentlemen and Others who are planting this Spring to their large and varied stock of HARDY SHRUBS, FRUIT, FOREST, and ORNAMENTAL TREES, &c., which are now in fine condition for transplanting. An early inspection invited.

CATALOGUES may be had on application.

Prize Seeds.

WRIGHT'S GROVE and GIANT CELERIES and CUCUMBERS.

WRIGHT'S GROVE RED and GROVE WHITE CELERIES were awarded the First Prizes at the South Kensington Show on November 10 and 11, 1875; see *Gardeners' Chronicle* (p. 627), November 13. These have been proved to possess all the good qualities required in a first-class Celery. Per ¼ oz. packets, 1*s*

WRIGHT'S GIANT WHITE CELERY has a more robust habit and stronger growth than Grove White, combined with a fine flavour. It forms very solid hearts, which blanch easily. Heads have been grown weighing from 8 lb. to 10 lb. each. Per ¼ oz. packets, 1*s*.

The following have secured supplies for the coming season :—

Hurst & Son, London.
Dickson, Brown & Tait, Manchester.
Sutton & Sons, Reading.
B. Crossland, Sheffield.
S. Finney & Co., Newcastle.
C. & J. Lee, Hammersmith.
Samuel Yates, Manchester.
Laird & Sinclair, Dundee.
E. Holmes, Lichfield.
W. Smith & Son, Aberdeen.

CUCUMBERS:—Wright's Wonder, fine White-spine, and Wright's Improved Black-spine. These will grow 24 to 30 inches long, without neck or handle, are very prolific and of mild good flavour; fine for exhibition. Berks Champion, Improved Sion House, Masters' Early Prolific, Munro's Duke of Edinburgh, Long Gun, Telegraph. Per packet, 1*s*.

Cash with orders will have prompt attention. Trade price on application.

WILLIAM WRIGHT, Seedsman, Retford, Notts.

DAVISON AND CO., White Cross Nurseries, Hereford, offer the following :—

APPLES, Cider sorts, 7 to 8 feet, 22*s*. per dozen, £8 per 100, £75 per 1000.
,, Dessert, 6 to 7 feet, 18*s*. per dozen, £7 per 100, £65 per 1000.
ROSES, Dwarf, selected from Rose Catalogue, 8*s*. per dozen, 60*s*. per 100, £25 per 1000.
,, Standard, selected from Rose Catalogue, 16*s*. per dozen, £6 per 100, £50 per 1000.
AMERICAN ARBOR-VITÆ, 3 to 4 feet, 20*s*. per 100.
AUSTRIAN FIR, 2½ to 3½ feet, 15*s*. per 100; 3½ to 4½ feet, 25*s*. per 100; 5 to 6 feet, 35*s*. per 100; all fine [plants.
BEECH, Common, 5 to 6 feet, 12*s*. per 100.
BIRCH, Weeping, 5 to 6 feet, 10*s*. per 100.
COTONEASTER, 2 to 3 feet, 20*s*. per 100.
CHESTNUT, Horse, 6 to 7 feet, 25*s*. per 100.
LAUREL, Common, 4 feet, 30*s*. per 100.
,, Portugal, 2 to 2½ feet, 40*s*. per 100.
PINUS INSIGNIS, 3 to 4 feet, 70*s*. per 100.
SCOTCH FIRS, 7 feet, 25*s*. per 100.
THUJA LOBBII, 2 to 3 feet, 30*s*. per 100.
ABIES ALBERTIANA, 4 feet, 15*s*. per dozen.
,, DOUGLASII, 7 to 8 feet, 60*s*. per dozen.
,, NORDMANNIANA, 2½ to 3 feet, 27*s*. per dozen.
,, ,, very fine, 3 to 4 feet, 48*s*. per dozen.
,, PINSAPO, 4 to 5 feet, 72*s*. per dozen.
ARAUCARIA IMBRICATA, 2 to 3 feet, 42*s*. per dozen.
ACER, sorts, 9 to 10 feet, 18*s*. per dozen.
AILANTUS, 8 to 9 feet, 30*s*. per dozen.
BERBERIS JAPONICA, 3 feet, 18*s*. per dozen.
BEECH, Common, 7 to 8 feet, 9*s*. per dozen.
BIRCH, Silver Weeping, 9 to 10 feet, 9*s*. per dozen.
BIOTA AUREA, 1½ foot, 24*s*. per dozen.
,, ELEGANTISSIMA, 1½ to 2 feet, 42*s*. per dozen.
CATALPA SYRINGIFOLIA, 7 to 8 feet, 18*s*. per dozen.
CUPRESSUS LAWSONIANA, 4 feet, 12*s*. per dozen.
CEDAR, Red, 4 to 5 feet, 12*s*. per dozen.
CHESTNUTS, Horse, 7 to 8 feet, 12*s*. per dozen.
,, ,, Scarlet, 7 to 8 feet, 24*s*. per dozen.
LABURNUM, 9 to 10 feet, 24*s*. per dozen.
LIME, 10 to 12 feet, 20*s*. per dozen.
SYCAMORE, 7 to 8 feet, 9*s*. per dozen.
ONTARIO POPLAR, 12 feet, 18*s*. per dozen.
YEWS, Pyramid, 5 to 6 feet, 30*s*. per dozen; 8 to 9 feet, fine, 7*s*. 6*d*. each.
ASPARAGUS, Giant, 15*s*. per 1000; Connover's, 30*s*. per 1000.
SEAKALE, 2-yr., 10*s*. per 100.

Important to Potato Growers.

PRINGLE'S HYBRIDISED POTATO SEED.—The extraordinary success which has attended Mr. Pringle in his attempts to improve this valuable esculent—which has resulted in the production of the SNOWFLAKE and ALPHA, and last, though not least, the RUBY—has encouraged him to still greater efforts in his favourite pursuit of hybridisation, and we have now the pleasure of offering a very choice strain of seed saved by him, which is the product of numerous hybridisations, variously operated, with every care during the past favourable season, between the above-named and many of the best new and old varieties in cultivation, both English and American, and includes every strain, which Mr. Pringle will himself sow the coming spring.

In order to encourage the cultivation of seedlings in this country, as well as in European countries, where the importation of the Potato is prohibited for fear of the Colorado Beetle, he has decided to offer his seed for sale, and has placed his entire stock in our hands, that all who desire may have an opportunity of giving it a trial, with the absolute certainty of producing varieties almost sure to equal, if not to excel, any hitherto offered. To prevent imposition, the seed will be put in sealed packets, with the *fac simile* of our signature upon each packet.

The following Testimonial from one of the most successful growers of Potatos in America, is a convincing proof of the wonderful productiveness of this seed :—"Last spring I obtained from C. G. Pringle some of his Hybridised Potato Seed; planted in the hotbed in the middle of April; transplanted to the open ground May 10, and I dug from one plant 10½ lb., and from another plant 6 lb. of large, smooth, handsome Potatos."

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James Carter, Dunnett & Beale, Holborn, London, W.C.
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FINE NAMED LEADING KINDS, 1½ to 3½ feet, from £7 10*s*. to £10 10*s*. per 100.
HYBRID SEEDLINGS, leading kinds, 1½ to 3½ feet, from 50*s*. to 75*s*. per 100.
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KALMIA LATIFOLIA, 1 to 2 feet, from 50*s*. to 60*s*. per 100.
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All the above are very fine bushy, well grown plants, and are offered very cheap to effect a clearance.

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Cupressus Lawsoniana erecta viridis.

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Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices :—

3 feet high, 2½ feet in circumference, 30*s*. per doz.
4 feet high, 3 to 4 feet do., 42*s*. to 60*s*. per doz.
5 feet high, 4, 5 and 6 ft. do., 10*s*. 6*d*., 15*s*. to 21*s*. each.
6 and 7 feet high, 6 to 7 and 8 ft. do., 21*s*. to 31*s*. 6*d*. each.

No cuttings have been taken from the plants here referred to, which are simply perfect in growth and splendidly rooted.

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English and American Seed Potatos

Is now ready, and may be had gratis and post-free.

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THE QUEEN'S SEEDSMEN, READING.

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Vegetable & Flower Seeds
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Superior quality, Carriage free
Descriptive Priced list post free,
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THORNS, of sorts, Standard, per 100 or 1000
ALMONDS, Single, Standard, per 100
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APRICOTS, Moorpark, Dwarf Maiden, per 100
MUSSELL STOCKS, per 1000
YEWS, Common, 2½ to 3½ feet, per 100 or 1000
CHESTNUTS, Scarlet and other, per 100
ABIES DOUGLASII, 3 to 4 feet, per 100 [or 1000
LAURELS, Common, 2 to 3 feet, and 3 to 4 feet, per 100
APPLES and PEARS, Maiden, per 100 or 1000
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,, Red, fine, 10*s*. per 100.
,, White, extra fine, 16*s*. per 100.
STRAWBERRIES, Yates' Seedling, very fine sort, abundant bearers, extra, 3*s*. per 100.
GOOSEBERRIES, large show and dessert sorts, extra strong, 15*s*. to 20*s*. per 100.

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AREA THEOPHRASTA (Service tree), grafted sorts, 3 to 4 feet, 5*s*. per dozen, 30*s*. per 100; 4 to 5 feet, 6*s*. per dozen, 40*s*. per 100; 5 to 6 feet, 8*s*. per dozen, 60*s*. per 100; 6 to 8 feet, 9*s*. per dozen, 70*s*. per 100.
BEECH, all fine, stout, extra transplanted, 1½ to 2 feet, 3*s*. 6*d*. per 100, 25*s*. per 1000; 2 to 3 feet, 4*s*. per 100, 33*s*. per 1000; 3 to 4 feet, 6*s*. per 100, 40*s*. per 1000; 4 to 5 feet, 10*s*. per 100, 65*s*. per 1000; 5 to 6 feet, 20*s*. per 100; 6 to 8 feet, 30*s*. per 100; 8 to 10 feet, 50*s*. per 100.
CHESTNUT, Horse, 2 to 3 feet, 5*s*. per 100; 3 to 4 feet, 6*s*. per 100; 4 to 5 feet, 7*s*. per 100; 5 to 6 feet, 10*s*. per 100; 6 to 8 feet, 20*s*. per 100.
,, ,, fine single specimens for avenues, very stout, straight stems, 12*s*. per dozen.
,, ,, Scarlet, 5 to 6 feet, 10*s*. per dozen; 6 to 8 feet, 12*s*. per dozen.
LIME, fine stock, 2 to 3 feet, 7*s*. per 100; 3 to 4 feet, 10*s*. per 100; 4 to 5 feet, 15*s*. per 100; 5 to 6 feet, 20*s*. per 100; 6 to 8 feet, 30*s*. per 100; 8 to 10 feet, 70*s*. per 100.
PINUS AUSTRIACA, 1½ to 2 feet, 7*s*. per 100; 2 to 3 feet, 12*s*. per 100; 3 to 4 feet, 25*s* per 100.
POPLAR, Lombardy, 2 to 3 feet, 4*s*. per 100, 35*s*. per 1000; 3 to 4 feet, 5*s*. per 100, 40*s*. per 1000; 4 to 6 feet, 8*s*. per 100, 75*s*. per 1000; 6 to 8 feet, 15*s*. per 100; 8 to 10 feet, 25*s*. per 100
,, Ontario, 4 to 6 feet, 8*s*. per 100; 6 to 8 feet, 12*s*. per 100; 8 to 10 feet, 25*s*. per 100.
,, Balsam, 4 to 6 feet, 10*s*. per 100; 6 to 8 feet, 20*s*. per 100.
PRIVET, Evergreen, 1½ to 2 feet, 15*s*. per 1000; 2 to 3 feet, 20*s*. per 1000; 3 to 4 feet, 25*s*. per 1000; 4 to 5 feet, 30*s*. per 1000.
SYCAMORE, 2 to 3 feet, 2*s*. 6*d*. per 100, 20*s*. per 1000; 3 to 4 feet, 3*s*. per 100, 25*s*. per 1000; 4 to 5 feet, 4*s*. per 100, 30*s*. per 1000; 5 to 6 feet, 6*s*. per 100, 50*s*. per 1000.
,, fine, 6 to 8 feet, 18*s*. per 100; extra strong, 8 to 10 feet, 45*s*. per 100.

EVERGREENS, ORNAMENTAL TREES AND SHRUBS.

AZALEA PONTICA, bedded, 4 to 6 inches, 6*s*. per 100, 50*s*. per 1000.
,, ,, bushy, transplanted, 1½ to 2 feet, 6*s*. per dozen, 45*s*. per 100; 2 to 2½ feet, 9*s*. per dozen, 65*s*. per 100.
BOX, Green, 1 to 1½ foot, 3*s*. per dozen, 16*s*. per 100.
,, 1½ to 2 feet, 4*s*. per dozen, 25*s*. per 100; 2 to 3 feet, 4*s*. 6*d*. per dozen, 30*s*. per 100.
LAUREL, Portugal, 1½ to 2 feet, 4*s*. per dozen, 30*s*. per 100.
,, ,, very fine, 2 to 3 feet, 8*s*. per dozen, 60*s*. per 100.
,, ,, extra fine round bushes, 3 to 4 feet diameter, 2½ to 3 feet, 12*s*. per dozen, 90*s*. per 100.
LEDUM LATIFOLIUM, bedded, 3 to 6 inches, 50*s*. per 1000; 12 to 18 inches, 6*s*. per dozen, 40*s*. per 100.
MAHONIA (Berberis) AQUIFOLIA, 1½ to 2 feet, 10*s*. per 100; 2 to 3 feet, 15*s*. per 100.
RHODODENDRON, best hybrid, bedded, 3 to 6 inches, 8*s*. per 100, 60*s*. per 1000; 6 to 9 inches, 10*s*. per 100, 90*s*. per 1000; 9 to 12 inches, 14*s*. per 100.
,, Ponticum, fine dwarf, round bushes, 1 to 1½ foot, 25*s*. per 100, £10 per 1000; 1½ to 2 feet, 5*s*. per dozen, 30*s*. per 100; 2 to 3 feet diameter, 2 to 2½ feet, 6*s*. per dozen, 45*s*. per 100; 3 to 4 feet diameter, 3 to 4 feet, 18*s*. per dozen, 150*s*. per 100.
,, Cunningham's White, very bushy, 1¼ to 1½ foot, 50*s*. per 100; 1½ to 2 feet, 65*s*. per 100.
,, best named sorts, bushy, 18*s*. to 30*s*. per dozen.
THORN, new double scarlet (Paul's), 4 to 5 feet, 5*s*. per dozen, 35*s*. per 100; 5 to 6 feet, 6*s*. per dozen, 40*s*. per 100; 6 to 8 feet, 7*s*. per dozen, 55*s*. per 100.
,, Double Pink, 4 to 5 feet, 5*s*. per dozen, 35*s*. per 100; 5 to 6 feet, 6*s*. per dozen, 40*s*. per 100; 6 to 8 feet, 7*s*. per dozen, 55*s*. per 100.
,, ,, White, 4 to 5 feet, 5*s*. per dozen, 35*s*. per 100; 5 to 6 feet, 6*s*. per dozen, 40*s*. per 100; 6 to 8 feet, 7*s*. per dozen, 55*s*. per 100.
,, Single Scarlet, 4 to 5 feet, 5*s*. per dozen, 35*s*. per 100; 5 to 6 feet, 6*s*. per dozen, 40*s*. per 100; 6 to 8 feet, 7*s*. per dozen, 55*s*. per 100.
,, Cockspur, 4 to 5 feet, 5*s*. per dozen, 35*s*. per 100; 5 to 6 feet, 6*s*. per dozen, 40*s*. per 100; 6 to 8 feet, 7*s*. per dozen, 55*s*. per 100.
YEW, English, fine, large stock, 9 to 12 inches, 12*s*. per 100; 1¼ to 1½ foot, 20*s*. per 100; 1 to 2 feet, 5*s*. per dozen, 25*s*. per 100; 2 to 3 feet, 7*s*. per dozen, 45*s*. per 100; 3 to 4 feet, 12*s*. per dozen, 80*s*. per 100.
,, Irish, 2 to 3 feet, 8*s*. per dozen; 3 to 4 feet, 12*s*. per dozen

LARGE AVENUE TREES, EVERGREENS and DECIDUOUS SHRUBS. Must be cleared for Building purposes.
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Strong Fruiting Canes, 5s. each.
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Suttons' Ringleader Peas	Veitch's Perfection Peas
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Of true stocks, at moderate prices for large quantities.
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Black Hamburgh	Grove End Sweetwater
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Early Malingre	Muscat of Alexandria
Foster's White Seedling	Muscat Muscadine
Frankenthal	Royal Muscadine
Golden Champion	Royal Vineyard
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SPECIAL OFFER.
FIR, Larch, 3-yr., 1½ to 2½ feet.; 4-yr., 2½ to 3 feet.
LAUREL, Common, 2 to 2½ feet.
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ROSES, splendid Dwarf H.P.
YEW, Irish, 3-yr. and 4-yr.
THORN QUICKS, 2-yr., 3-yr., and 4-yr.
HAWS in large quantities.
All above held in large quantities; quality fine. For prices, &c., apply to
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Packing and Carriage Free, contains as under—

Peas in variety	7 pts.	Cucumber	1 pkt.
Beans	3 pts.	Endive	1 ,,
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Scarlet Runners	1 ,,	Lettuce	3 ,,
Beet	1 pkt.	Mustard	4 oz.
Borecole	3 ,,	Melon	1 pkt.
Brussels Sprouts	1 ,,	Onion	2 oz.
Albert Sprouts	1 ,,	Parsley	1 pkt.
Broccoli	4 ,,	Parsnip	1 oz.
Cabbage	4 ,,	Radish	6 ,,
Savoy	1 ,,	Spinach	1 pkt.
Carrot	3 oz.	Turnip	3 oz.
Capsicum	1 pkt.	Tomato	1 pkt.
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MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, February 14, at half-past 12 o'Clock precisely, a COLLECTION of ESTABLISHED ORCHIDS, including—

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ONCIDIUM SUPERBIENS.	BOLLEA LALINDEI.
PESCATOREA DAYANA.	CATTLEYA DOWIANA.
ONCIDIUM MACRANTHUM.	ODONTOGLOSSUM ODORATUM.
CHYSIS LIMMINGHEI.	DENDROBIUM HOOKERIANUM.
ONCIDIUM CRISPUM.	MASDEVALLIA HARRYANA
VANDA DENISONIANA.	ODONTOGLOSSUM NÆVIUM.

And various other choice species.

On view the morning of Sale, and Catalogues had.

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IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, February 14, at half-past 12 o'Clock precisely, an importation of a large quantity in good condition of SACCOLABIUMS, just received *ex* "Khiva" from Bombay; also a quantity of the true and exceedingly rare white-flowering DENDROBIUM BARBATULUM, and from Brazil a quantity of the attractive SOPHRONITIS GRANDIFLORA; also an importation from Ecuador of the new and beautiful ODONTOGLOSSUM CIRRHOSUM, just received from South America in good condition. This superb new Odontoglossum is a much more handsome species than the still rare O. nævium, somewhat resembling it in colour and character, but infinitely superior. It produces fine strong branched spikes of blossom, each flower 3 to 4 inches across, white, marked and spotted in the way of O. nævium, exceedingly chaste and beautiful; also a large importation, in the finest possible condition, just received from Ecuador, of ODONTOGLOSSUM HALLII, many of them in huge masses, the largest and finest ever imported, with from twenty and thirty to forty bulbs each. This rare Odontoglossum is one of the most magnificent of the family. At the same time will be Sold an importation from South America of a new Oncidium, ONCIDIUM PENTADACTYLON; plants of this Oncidium have not before reached this country alive.

On view the morning of Sale, and Catalogues had.

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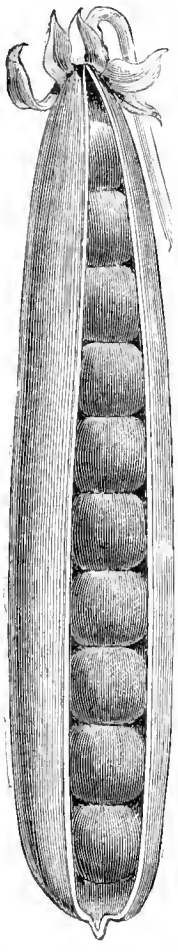

Suttons' Giant Emerald Marrow Pea.

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Suttons' Giant Emerald Marrow Pea.

(See Illustration.)

A NEW AND DISTINCT WRINKLED VARIETY, UNEQUALLED IN PRODUCTIVENESS, AND OF DELICIOUS FLAVOUR.

"I consider your 'Giant Emerald Marrow' to be altogether A SPLENDID PEA, quite distinct, decidedly an acquisition."—JNO. TOWILL, *Gr. to the Right Hon. the Earl of Glasgow.*

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Suttons' Duchess of Edinburgh Pea.

(See Illustration.)

THE BEST FLAVOURED PEA, remarkably productive, with handsome pods.

"I consider your 'Duchess of Edinburgh' THE BEST PEA GROWN, of excellent flavour, good cropper, and a decided improvement on any other variety.—ROBERT SOWERBY, *Gr. to the Right Hon. the Earl of Macclesfield.*

Per quart, 3s. 6d.

Suttons' Bijou Pea.

THE EARLIEST AND BEST dwarf wrinkled Pea; forces well, and is very prolific. Height, 18 inches.

"Your Dwarf Wrinkled Pea, 'Bijou,' has proved the earliest and best marrow Pea of its class I have ever grown."—T. LOCKIE, *Gr. to the Right Hon. Lord Otho Fitz-Gerald.*

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THE MOST PRODUCTIVE DWARF BEAN, and best variety for show purposes.

"I used 'Canadian Wonder Bean' for early forcing, and was well satisfied with the result. It is the best cropper I have seen, and as early as any kind in cultivation."—R. W. TODD, *Gr. to His Grace the Duke of Buckingham.*

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Suttons' Improved Windsor Bean.

LARGEST AND MOST PRODUCTIVE BROAD BEAN. Very prolific.

"Suttons' Broad Windsor Bean is a great improvement on the old Windsor, being much larger, both in pod and bean, and a considerably heavier cropper. It is the best Broad Bean for general crop."—GEO. ABBEY, *Gr. to Sir C. M. Palmer, Bart.*

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(See Illustration.)

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"Your 'Emerald Gem' is decidedly the earliest and best Pea I have grown yet, both in flavour and crop."—JOHN GIBBONS, *Gr. to the Right Hon. B. Disraeli.*

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(See Illustration.)

SUTTON & SONS have had repeated opportunities of observing this Pea during the last two seasons, and have the greatest confidence in recommending it to their numerous customers. Having received a large supply from Mr. Chas. Turner, they are enabled to send it to their customers in the original sealed packets at the same price retail as charged by Mr. Turner.

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"Your 'Sulham Prize' Celery is a very excellent early kind."—CHAS. PENNY, *Gr. to H.R.H. the Prince of Wales, Sandringham.*

Per packet, 1s.

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"Your Improved Dark Red Beet is a first-rate sort, with dwarf crimson-coloured leaves. Excellent for bedding."—WM. PATERSON, *Gr. to Her Majesty the Queen, Balmoral.*

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THE BEST SCARLET-FLESHED MELON. Handsome in form, finely netted, and of delicious flavour.

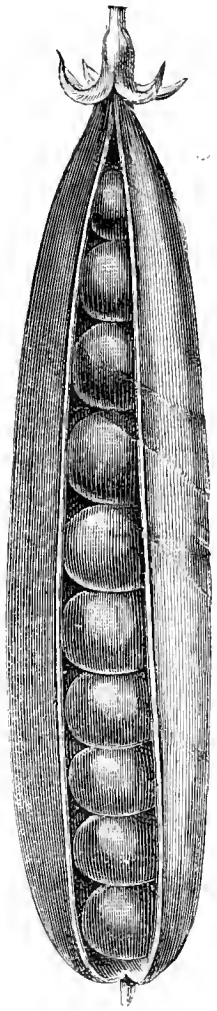
"I consider it the best scarlet-fleshed Melon yet in commerce, being A 1 in quality, appearance, and productiveness. His lordship, who previously had a prejudice against scarlet-fleshed Melons, pronounces this variety superb."—WM. WILDSMITH, *Gr. to the Right Hon. Viscount Eversley.*

Per packet, 2s. 6d.

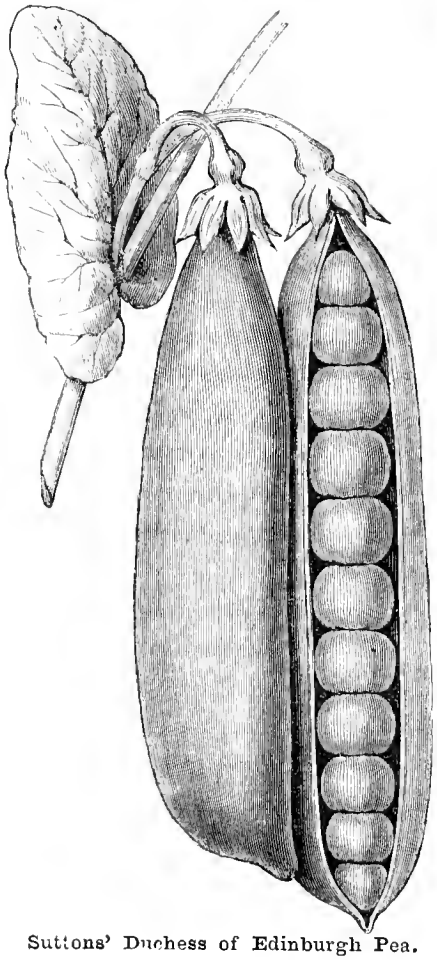
Suttons' Improved Reading Onion.

Of handsome shape, remarkably mild flavour, and an excellent keeper.

Per ounce, 1s.



Dr. Maclean Pea.



Suttons' Duchess of Edinburgh Pea.

Suttons' Duke of Connaught Cucumber.

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"Quite tender and deliciously flavoured; for beauty and quality cannot be surpassed."—SHIRLEY HIBBERD.

"The best I ever saw."—R. DRAPER, *Gr. to the Right Hon. Earl Vane.*

"Most excellent."—C. PENNY, *Gr. to H.R.H. the Prince of Wales.*

Per packet, 2s. 6d.

Suttons' Superb Calceolaria.

This splendid strain has been most carefully selected from the very finest flowers in cultivation.

"My Calceolaria plants, from seed purchased of you last year, are particularly fine, of very compact habit and beautiful in colour."—A. E. RUSSELL, Esq., *Dalnabreck, July 10, 1874.*

Per packet, 2s. 6d.

Suttons' Prize Cineraria.

Selected from the finest existing varieties.

"Our Cinerarias this year (from your seed) are splendid; they far surpass any I saw at the Botanical Gardens yesterday."—Mrs. A. ALLERTON, *Prittlewell, May 8, 1875.*

Per packet, 2s. 6d.

Suttons' Prize Cyclamen.

Most carefully saved from a splendid strain, and combines brilliant colours with flowers of the finest form.

Per packet 2s. 6d. Collection of six varieties, 5s

Suttons' Superb Primula.

The finest strain in cultivation, remarkable for its most beautifully fringed flowers, which are thrown well above the foliage.

"I cannot help saying that the Primulas from your seed have always given great satisfaction, but this year more than ever."—W. EDWARDS, Esq., *Wellington, January 21, 1875.*

Per packet, 2s. 6d.

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THE QUEEN'S SEEDSMEN,

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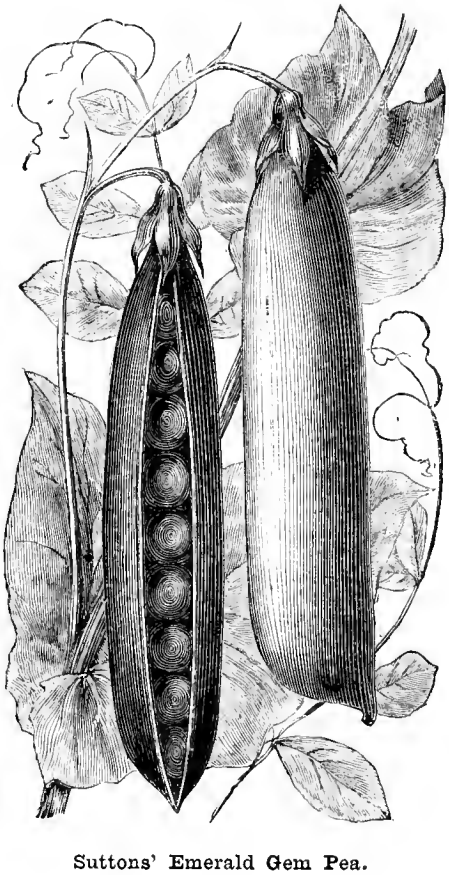
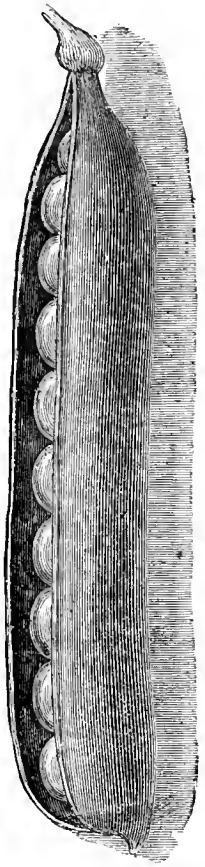


Suttons' Emerald Gem Pea.

THE BEST NEW PEA.

CARTER'S
COMMANDER-IN-CHIEF



"'Commander-in-Chief' and 'G. F. Wilson' are both Peas of great excellence."—R. GILBERT, *Burghley, in the "Garden," August* 14.

"'Commander-in-Chief,' a very prolific Pea, having large well-filled pods of large Peas, FLAVOUR EXCELLENT."—WM. PATERSON, *Head Gardener to Her Majesty the Queen, Balmoral Castle.*

Price per quart, 3s. 6d.

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"WITLOOF,"

A new Winter Salad.

Awarded a First-class Certificate, Royal Horticultural Society, Jan. 19, 1876.

This is a most distinct and entirely new Vegetable, somewhat resembling Chicory in habit. It produces a moderate-sized beautifully white heart, in shape similar to a Cos Lettuce; and, either eaten boiled or as a salad, it will be found a valuable acquisition to our short list of English Winter Vegetables. It is well known in Belgium, where it is most successfully cultivated to a large extent.

Dr. HOGG, the eminent Editor of the *Journal of Horticulture*, writes us as follows:—

"Witloof forms a most delicious vegetable. You ought to attach much more importance to it than to regard it merely as a salad plant."

Price, per packet, 1s.

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SATURDAY, FEBRUARY 5, 1876.

PLANT NAMES:
HOW TO PRONOUNCE THEM.

(*Concluded from p.* 137.)

SO far we have spoken of right and wrong pronunciation as if each was an absolute verity, coeval with Nature, independent of time, place, and human changes. The truth is, that pronunciation is, after all, arbitrary and changeful, and that what is called right and wrong to-day is simply what scholars and modern taste and opinion have agreed to consider so. Of course this does not absolve any one from abiding by the current usages. It is just the same with the recognised rules of pronunciation as with the established laws of the realm. They may be very different, and possibly in some respects not so good, as the laws which prevailed with the Spartans or the Hebrews. Granting all that might be claimed for the superiority of the latter, what we have to do in England is to bow to our own, and, *pari passu*, to give assent to all the existing canons. Enormous difficulties pertain to the theoretical true pronunciation of Greek and Latin. A very much wider field is here opened up, one that has given lifelong occupation to innumerable students for at least three centuries, and even now little more is certainly known about it than at the beginning.

Were it possible for the ancient pronunciation of Greek and Latin to be recovered—could Socrates and Cicero return to earth for a season, and tell us all about it—the probability is that, without going any further, the entire fabric of our botanical pronunciation would be toppled over, and the whole thing would have to be learned *de novo*. Books and essays by the score have been written upon the subject, but even if we can manage to keep abreast of them, they are only like torchlight cast into the margin of a winter fog. Ordinarily they are more than flesh can bear.* A man taunted with his wrong pronunciation may thus, with a certain show of reason, retort: "Tell me first what *is* the right pronunciation. Tell me how Plato and Demosthenes pronounced the language of Athens; how Virgil and Pliny handled that of Rome. Unfortunately, or, perhaps, fortunately, there are no means of ascertaining.

It is hard to imagine that the general system of pronunciation current with the ancients can anywhere have been transmitted in its purity. Portions of it are probably extant, but no one can say certainly where they are. The only fact which seems pretty well established is that Greeks, to begin with, probably pronounced their consonants much the same as we pronounce our own: *b*, as in bag; *l*, as in leg, &c. When we come to the vowels it is quite another matter, and the student is launched at once upon conjecture. Very curious light is thrown sideways on this great problem by the citation, in the ancient Greek poets, of the sounds uttered by animals, which, like human interjections, are everywhere consistent, and when preserved in literature serve as a kind of token of the sounds of the alphabetic characters employed to express them. In Aristophanes, for instance, the squeak of a pig is *κοῖ, κοῖ*, which seems to show that the Greek ι, or *iota*, was sounded, not as we read it to-day, like the *i* in *ice*, but like the modern French *i*, or as we ourselves pronounce the second *i* in the word *quinine*. In the same facetious author we have the cry of the peewit represented by *ποῖ*, which points in identically the same direction; and in another place, what European children utter as "bow, wow" (imitating a dog), is represented by *αὖ, αὖ*. To bark like a dog, in the same writer, is *βαῦ βάζειν*.

Another of the Greek comic poets, Cratinus, has the following most curious line:—

ὁ δ' ἠλίθιος ὥσπερ πρόβατον βῆ βῆ λέγων βαδίζει—

"But the booby goes saying 'Baa, baa,' like a sheep." If anything is to be found in this in the way of evidence, of course it is that the Greek *η*, the so-called *eta*, or long e, represented the substance of what is current in children's *baa*-lamb. As another example, take the Greek *οὖ*, which, if this class of evidence be legitimate, would seem to have been pronounced *oo*, as in the English *cool*, since the equivalent of the modern nursery *moo*-cow with the Greeks was *βοῦς*. Their way of representing the interjection we depict in *ugh*, was *ἰού*.

Turning now to Latin, it is certain that the sounds given by the ancient Romans to some of the letters they used, are entirely unknown, those for example, given to their alphabetic F, *ch*, *th*, *ph*, *rh*, *ei*, *eu*. The sound given to other letters is purely conjectural. The Roman *c* was probably representative of what in English is denoted by *k*, being sounded like the *c* in *cat*, never as *c* in *city*, though some contend for *ch*. The Roman *g* was probably always sounded as in the English *get* and *gird*, never as in *gentle* and *origin*; and the Roman *v* was probably representative of what in English is denoted by *w*, or perhaps by *oo*. Similar remarks might be made concerning the vowels; the pronunciation, for example, of the long *i* is thought to have had its counterpart, like the Greek *iota*, in the second *i* of *quinine*.

Such are the difficulties to be encountered in asking for the true pronunciation of Greek and Latin. Being insoluble, the wisest course, practically, seems to be to keep to the usages long since established by the scholars among our countrymen. But this opinion is by no means universal in England, and it must be unhesitatingly acknowledged that in England we are accustomed to pronounce Latin, more especially in regard to some of the vowels, in a way that many excellent students of the subject consider palpably erroneous; a far more true approach to the ancient method being made, they believe, in the Continental practice, with which latter our own has little in common.

In conformity with these, as they appear to most people, rather revolutionary views, at Rugby it is now the practice to pronounce "*Veni, vidi, vici*," not as others do, but as "Wany, weedy, weechy." How the Rugby scholars pronounce *vivida vis animi* we do not know—the first word of the three would apparently be *oui ouï-dà*; neither do we know how they read the celebrated Virgilian line—

"Neu patriæ validas in viscera vertite vires."

Fancy a congress of botanical and horticultural Pronouncing Bees, some content with the established English system, others aspiring to do as Cicero, that is to say, with the reformers, as Kikero, did. With the reformers the Grape Vine would be *Weetis weenifera*, and Viola would vanish in *Weeola*. Following suit, of course it would become right to say *Weeolets*—

"Weeolets dim,
But sweeter than the lids of Juno's eyes
Or Cytherea's breath."

We recommend our English gardeners to keep to the pronunciation which long use has sanctioned; possibly it may be in many points

* To any one caring to have his soul dried up by minute personal study of the matter, may be recommended, to begin with, as an early work, Theodore Beza, *De Vera Pronuntiatione Gr. et Lat. Linguæ Commentarii*, &c., 12mo, 1587; and as the best of the modern ones, as regards Latin, Dr. J. M. Donaldson's *Varronianus*, 8vo, ed. 2, 1852.

Vide Acharn. 780; Birds, 227; Wasps, 903.

erroneous when tried by the high classical theories, or conjectures rather; and in France and Italy it may be laughed at as another of our insularities, but it serves its purpose well, and is bound up with all the traditions and glories of English floriculture. The main point is to pronounce and accentuate accurately, according to the rules laid down by the accomplished men who declared for Viola and Vitis. Time is always well spent in learning how to pronounce conformably with the fathers of English Botany; in learning to say Cle'matis rather than Clema'tis, or worse still, Clem'atis; Anemo'ne instead of Anem'one; Gladi'olus, instead of Gladio'lus. It may be permissible, perhaps, to employ Clema'tis, Anem'one, and Gladio'lus, when the name is used as an English one, just as many Greek and Latin words which have been adopted into the vernacular are allowed to take English plurals. But we are speaking of the correct pronunciation of them as classical or scientific names. The same remark will apply to Erica, Epacris, Arbutus, and many others. The propriety of Gladi'olus is shown by the corresponding Luci'ola, Rhodi'ola, Laure'ola, Matthi'ola, Calli'ope, and fifty others. It may be conceded, at the same time, that for anything that can be demonstrated, Gladi'olus, in the opinion of the ancient Romans, would perhaps have been no better than Gladio'lus, as regards the sound given in England to the vowels. In Glorio'sa and Scabio'sa, the accent falls upon the *o*, for these two names are simply adjectives, as in Yucca gloriosa; while in Stratio'tes, as in Jasione, the *o* of the Greek root is long. Pronunciation may, perhaps, be with some people, like inability to learn to spell, a constitutional infirmity. We know a very good botanist who constantly transposes particular sounds, saying Disphycium, for instance, instead of Diphyscium. A bright little maiden pupil of ours used always to insist, as she sprang towards her pet Forget-me-Nots by the river-side, that instead of Myosotis, it ought to be Oh my so'tis! We leave to the Spelling Bee and the Pronouncing Bee conjointly the unfortunate wight who, through defect of tongue, instead of "Here the first Roses of the spring shall blow," read out—*noses. Leo Grindon, Manchester.*

New Garden Plants.

ODONTOGLOSSUM HUMEANUM, *n. hyb.**

When I opened the box containing the peduncle and a leaf of this plant, lately, by candlelight, I immediately was struck by the similarity of the flower to O. cordatum, though lip and bracts were those of O. Rossii. Shortly after came the letter of Mr. Harry Veitch explaining its history. This gentleman was some days since visiting at Mr. Burnley Hume's place, to see the Orchids. There the novelty flowered. He writes thus:—"I could not help thinking, from the formation of the sepals and the colouring, it must be a natural cross with cordatum! Thus I begged the bloom, and sent them over to you yesterday. It is a very curious plant at any rate, and the flowers differ both in form and colouring from any Rossii I have ever seen." I was much gratified to read Mr. Veitch had just my own feeling. It is a great satisfaction to see that excellent practitioner come to the same conclusion. I feel very pleased to name the plant after Mr. Burnley Hume, lately our assidnous fellow-workman and juror at Cologne. The flowers are very nice, and come very near those of Odontoglossum cordatum. The rhachis of the inflorescence is much thinner, only two-flowered, and the bracts very short, one-fourth the length of the stalked ovary, whitish green, not yellowish straw colour. Sepals shorter, straight, or nearly so, yellow at their ends, with cinnamon bars. Petals white, with a few (three) sepia-brown blotches at their base. Lip white, without brown blotches, not acuminate, with a yellow callus striped inside with red, and narrowed at its apex, in the way of O. Rossii. The leaf shows the peculiar venation of O. cordatum and maculatum.

Speaking just of the second natural mule of Odontoglossums, bloomed by Mr. Burnley Hume, when hundreds of collectors would be glad to flower one, I feel the duty to remark that Mr. Hume, when sending the spike of O. Murrellianum (see 1875, vol. iii., p. 653), had himself recognised its resemblance to O. Pescatorei and nævium. Having not acknowledged that, by oversight, I am lucky to have the opportunity do to so now. *H. G. Rchb. f., Jan.* 20.

MASDEVALLIA BARLEANA, *n. sp.**

This is a very gay scarlet-flowered Masdevallia while its next sister, M. amabilis, is deep purplish. It would rather appear to flower in rich profusion, Messrs. Veitch having kindly sent subsequently four flowers, which enabled me to state the constancy of the chief character I relied upon for the separation of the species from the other. The lateral sepals project as rounded, nearly æquilateral free triangles in the old M. amabilis. In this species they run internally one in another, they are connate in a straight line. Thus in M. amabilis you see between these two lateral organs included a long triangular sinus, while in this new species there is no sinus, but a full combination of the two sepals. The petals, too, are very peculiar. The flowers are like those of M. amabilis in extension. These two species have them smaller than the other members of this group—the high aristocracy of beloved Masdevallia. The plant turns out to be one of the new Peruvian discoveries of the very promising traveller, Mr. Davis. It flowered some months since with Messrs. Veitch, of the Royal Exotic Nursery. It is dedicated to J. B. Barla, Esq., Consul of Brazil and Director of the Museum for Natural History, Place Garibaldi, Nice, so well known for his orchidologic and mycologic works, as well as for his most special knowledge of the floras of Liguria and Sardinia, and now for thirty-two years my highly-valued correspondent. We may expect very useful works for further elucidation of the renowned English winter colony from Mr. Barla's pen and pencil. I saw the other day a manuscript in his hands. It would, however, be most desirable to have immediately a flora of Alpes Maritimes from Mr. Barla's pen, the more since M. Ardnino, who was a diligent compiler and collector, the author of the last flora of that region, decayed. Perhaps Mr. Barla, assisted by one of his intimate and most energetic friends, could help the innumerable English amateurs beginning with a winter flora, such as was intended to be written by our lamented Traherne Moggridge. It would also be very desirable that Mr. Barla, a man of high position and influence, and now bearer of a living Peruvian Orchid, gave the rich Niçois (called before the French days Nizards) the opportunity of seeing a collection of living tropical Orchids. Those lucky Niçois who have their avenues of Phœnix would appear to live in an unenviable ignorance of what is a stove Orchid when their bright light would produce such colours of the flowers as we can never see in our northern latitude, grumbling half our life under a grey or coffee-brown atmosphere. *H. G. Rchb. f.*

PLUMBAGO ROSEA.

IN reply to my query of December 11, as to how long Mr. Sheppard has had the Plumbago rosea in a presentable condition after being cut, he tells us that "he has had them in varying degrees of freshness for at least a week at a time." Are we to understand from this that he has kept them in a fit state to adorn the table of a lady's drawing-room for a week? if so I think I may safely say that he is the only gardener in the country that has done so. Although as he states, "a few expanded blooms close daily," still, if they are fit for a vase in a lady's room at the end of a week they certainly are presentable, but if not, they really cannot be so. As I previously stated, "I have grown the plant more or less for a number of years," and have frequently tested its lasting properties, but since this controversy has taken place in these pages, I have paid double attention to it and placed several plants in position as recommended by Mr. Sheppard, taking care to have all the expanded blooms picked off; I also placed the plants as far from the pipes as they could be got and from 4 to 6 inches from the glass, and put them in houses of varied degrees of temperature, ranging from 50° to 60° at 8 P.M. with a fall of 2° or 3° by morning. In these positions the plants have expanded their flowers, which on being tested are very little superior in lasting qualities to those cut from the back walls as previously described.

When I first wrote my object was to draw the attention of gardeners to a much neglected plant, which is worthy of a place in any stove or intermediate house, and which will give an abundance of bloom at this dull season of the year, which is its best property. "On the other hand, a great sacrifice is made if the flowers are cut; the scores of flowers at the points of the racemes will not expand, and those that are expanded will soon droop and wither. If the flowers would stand well after being cut, it would be a great acquisition." To which Mr. Sheppard replies, "If the plants were placed in moderate heat, so as to be near the glass some time before the flowers expand, they would be found to stand tolerably well in a cut state, if not placed on tables that are standing in rooms in too close proximity to the fires." Most certainly this is saying something in favour of the Plumbago as a cut flower. By the name intermediate house, is generally understood a house kept at a temperature ranging between that of a greenhouse and a stove, and this, I surmise, is what Mr. Sheppard means by "moderate heat." Plants recommended for cutting purposes are generally understood to be such plants or flowers as are suitable for floral displays in drawing-rooms, saloons, &c., and that can be depended on to retain a fresh appearance in the positions assigned to them for two or three days—a quality which the Plumbago rosea does not possess, at any rate I have also found it so.

Most gardeners that have to keep up a constant supply of cut flowers are aware of the superior lasting properties of flowers cut from plants grown in a comparatively cool temperature over those grown in anything approaching a strong moist heat, and would remove any desirable plants subjected to the latter treatment into a cooler house before the flowers got too fully developed; but I am satisfied there is very little benefit derived from moving Plumbago rosea, because I cannot recommend it as a plant for cutting purposes, except where flowers are merely wanted for a few hours only. When I described the position in which I have grown the Plumbagos here, I did not mean to say that such was the most appropriate or best position for them to occupy, but to show how naked, objectionable walls may be utilised by growing plants against them, which will present a charming appearance at the dullest season of the year. I may here remark that, owing to the construction of the houses, plants cannot be planted out, otherwise I should have been tempted to cover the walls with such indispensable subjects as Stephanotis, Bougainvillea, &c., consequently I grow the Plumbagos in pots to suit the limited space, and which produced the desired effect.

In reference to the rush of hot air amongst the plants from the return pipes, Mr. Sheppard is quite right as regards the centre house, but those in the other two houses have rarely been more than milk-warm until the severe weather we have lately experienced; and as I had tested the lasting properties of the flowers before this came on, I must say that neither the plants nor flowers were affected in the least degree by the pipes below them. "Of course thin-petalled flowers, such as the Plumbago rosea, cannot be expected to last long in any position, however favourable." I think all gardeners that know the plant will join me in endorsing this statement of Mr. Sheppard's; but I must confess that I hardly expected such a remark from one that has kept the flower "in varied degrees of freshness for at least a week at a time."

On the occasion of a large party here a few days ago, I filled a large trumpet-shaped vase, which stood upwards of 3 feet high, in the following manner:—In the centre I placed a shoot or branch of Croton longifolium, about 3 feet long, and thinned out the leaves where they were dense so as to avoid a heavy appearance. Around this I put four Poinsettias, the stems being fully 3 feet long, and the heads about 14 or 15 inches in diameter, and by running the thumb and fingers along the stems they were very readily made to assume an arching appearance. I then filled up with two more long shoots of Crotons, eighteen or twenty shoots, fully 4 feet long, of Plumbago rosea; a quantity of long fronds of Goniophlebium subauriculatum, Nephrodium molle, and Adiantum concinnum latum, also a long branching

* *Odontoglossum Humeanum*, n. hyb.—Cordatum × Rossii: pedunculo teretiusculo biloro; sepalis triangulo-acuminatis dorso carinatis; tepalis breve cuneatis oblongis acuminatis crispulis; labelli callo baseos bilobo, lobis semirotundis in partem integram semicylindricam dorso carinatam antice divergenti bilobam excurrente: lamina cordato-ovata acuta lobulata, crenulata; columna trigona superne amplata.—Sepala flavida intus pulcherrime castaneo-fasciata. Tepala albido-flavido, basi maculis paucis (3) brunneis. Callus luteus fasciis rubris. Lamina alba. Columna viridula.

* *Masdevallia Barleana*, n. sp.—Aff. M. amabili. Floris tubo arctiori; medio subito infundibulari; sepalo summo libero brevi triangulo; in caudam multo longiorem extenso; sepalis lateralibus multo majoribus extus semi-ovato triangulis inter se linea prope recta connexis (nec utroque sepalo porrecto æqualiter triangulo uti in Masdevallia amabili); tepalis ligulatis emarginato bilobis cum apiculo minuto interjecto; intus longitudinaliter oblique carinatis; angule exsiliente in ima basi; labello subcordato ligulato obtuso; columnæ androclinio acute alato.—Folia spatulata apice acuta. Tubus floris dorso aurantiacus, ventre albidus. Sepala intus cinnabarina.—Peruvia, Davis, ex col. dom. Veitch, celeberrimi plantarum vivarum mercatores.

shoot of Ficus repens twisted round the stem of the vase and trailed on to the table; the reservoir at the base of the vase was filled with Gymnostachyum Pearcei, shoots of Panicum, and Adiantum fronds. The position occupied by the vase was on a table in the centre of the drawing-room, and, viewing it from the entrance door, with the white wall behind as a groundwork to the flowers, it certainly had a charming effect, being a huge head of loose, graceful flowers. This vase was filled late in the afternoon, consequently it retained its freshness the whole of the evening, but on inspection the following morning the Plumbagos were all faded, owing to the dry air of the room from the heat of the fire and the gas-burners. This is one of many instances in which I have utilised the Plumbago for floral displays, and merely make mention of it as being the only good property it possesses for cutting purposes, viz., where flowers are required for a few hours only. *James Ollerhead, The Gardens, Wimbledon House.*

ROYAL HORTICULTURAL SOCIETY.

In the current number of the *St. James' Magazine*, Mr. W. A. Lindsay, the late Secretary of the Society, has an article devoted to its history, and which is in the main an explanation of the lecture given by him, and reported in our columns (1875, vol. iii., p. 346). The concluding paragraphs have at present special interest:—

"From 1860 to the present time matters have proceeded from bad to worse. 1862 and 1871 were the only years in which the income availed for the discharge of all the annual engagements, and in each year success was owing to the existence of an International Exhibition. In 1873 a Council composed largely of men known to the world of science was displaced by the Fellows, under great provocation, and their places were supplied by gentlemen instructed particularly to maintain the rights of the resident Fellows. Each successive Council has done its utmost to avoid failure, and these efforts appear still to be prolonged, but as yet with little result. Men of science begin to look on the Society with suspicion, and the residents at South Kensington seem to care little to support its garden.

"What, then, should be the cure for such prostration? We have shown, historically, that the Society has been remarkable for three special kinds of external work in addition to the internal labour of its committees and officials. These are:—

"1. The publication of papers on details of horticultural science.

"2. The mission of foreign collectors.

"3. The holding of exhibitions.

"In the latter the Society has now many rivals. The Royal Botanic Society, the Crystal Palace Company, and many other bodies scattered over the country hold these shows with success. It is a mere question of money. Whoever gives the largest amounts in prizes will secure the best exhibition. Consistently with retrenchment, the Society can maintain no pre-eminence in such work. The mission of foreign collectors is now undertaken by several of the principal nurserymen, and we believe that some of these expend a large sum every year in this branch of their trade. A practice which was of great value at a time when no individual in the country had energy to adopt it, ceases to be important when a large portion of the globe has been explored, and the remainder is being diligently investigated by private persons. The publication of papers remains, and in this special department the Horticultural Society has as yet no competitors; but to publish on a scale equal to the early *Transactions* the Society must expend large sums. Crippled as it is with a garden (and a debt), such as that in South Kensington, no such publication is possible.

"It appears then to follow, that either all scientific work of a kind to attract the public and maintain the world-wide reputation of the past, must be abandoned by the Society, or the garden at South Kensington must be given up. The garden itself is, horticulturally, a failure, and its beauty principally architectural. Flowers can only be brought there to expend the luxuriance they have elsewhere acquired. As a place for exhibition it is needlessly large. As a meeting-place for the local Fellows it may have some value of a social kind, but to maintain a garden with this object is hardly within the scope of the Society's work. Melancholy then as it is to confess that the brilliant scheme of 1860 has failed, it is impossible to resist this conclusion, and it would be foolish any longer to shut our eyes to it. A society which has contributed so much to the beauty of English life has some claims on the national gratitude, so long as it fills its vocation. It is our earnest hope, therefore, that its Council will ere long apply their energies to the liberation of the Society from its engagements, and to the resumption of scientific work at Chiswick. Some convenient office in London could again be opened where meetings might be held, and a new library be collected.

"In this way only can the extinction or degradation of the Society be avoided. But if no such restoration take place, and if it should appear that the mission of the Royal Horticultural Society has been fulfilled, it will have contributed in no small degree to science and art in England. Its publications form a library of important papers, and its labours have created the modern garden. Of the latter we have spoken. As to the former, it must suffice again to remind the student that no education in natural science can be considered even approximately perfect which has not included their perusal. There is no step in the ascent of knowledge which they do not illustrate; and as the reader rises from the consideration of the special flower to the comprehension of the class, and from the examination of such laws as govern heat and chemical action in relation to the vegetable kingdom, to that point at which all natural sciences appear to converge, he cannot but feel that, had it not been for the Royal Horticultural Society, his education must have begun at a far lower stage of knowledge."

——As I see that there is some talk of allowing the old Horticultural Society to fall to the ground, and of setting up a new one in its place, will you allow me to repeat my conviction, that into whatever difficulties the Society has fallen, and however much the Kensington tea garden may have hampered it as regards its legitimate horticultural work, no new society can possibly take its place, or do the work which the Horticultural Society ought to do, in promoting horticulture throughout England, as the old Society itself can do it, if it would do so. For instance, I have myself taken some interest in the Society, although living far from London, and have endeavoured (whenever I have had an opportunity of so doing) to promote the extension of its usefulness, and therefore the extension of its influence, and as a consequence of its resources, and I have for many years continued to pay four guineas a year (for which I have personally received but little return) in the hopes of one day seeing it prosper as it ought to do. But I should never think of doing this for a new society; I should keep my four guineas a year to be more profitably employed, and I am very sure that many old members of the Society, especially in the country, will do exactly the same as I should do in this matter. Allowing the Horticultural Society to fall to pieces will simply be ceasing to have an English Horticultural Society at all. There may be a London society and other local ones, but I do not believe in the possibility of forming another Royal Horticultural Society of England; and I am therefore convinced that the breaking up of the Horticultural Society would be a loss to English horticulture—how great I can hardly tell, but that it would be a perfectly irremediable one. *C. W. Strickland*, 5, *Crown Crescent, Scarborough, Jan.* 31.

IVY-LEAVED PELARGONIUMS.

The production of the various types of the Pelargonium, and especially of the Large-flowered or Show and the Zonal classes, goes on rapidly from year to year, and with the birth of new varieties there comes also, as a fitting reward to the toil of the raisers, substantial and valuable gains—gains in size, form, and colouring. Michael Angelo Buonarotti is credited with the following beautiful lines:—

> "Never did sculptor's dream unfold
> A form which marble doth not hold
> In its white block."

In like manner the highest ideals of the florists (by this term comprehending the men who were then engaged in improving the varieties of many of our popular flowers) are subject to realisation, such plastic material of expression doth Nature hold in its ever-bounteous hand, with which to give shape to the higher levels that mark the progress of gradual attainment.

The interesting hybrid Ivy-leaved Pelargoniums which Mr. John Wills reared a few years ago, by dint of much patience and trouble, after serving as a real floricultural sensation, appeared to fall back into comparative obscurity. A few attempts were made to improve them, with varying success, but little in the way of definite results flowed therefrom.

Two or three years ago Mr. J. George, of Putney Heath, the well-known raiser of some fine hybrid Nosegay Pelargoniums, took them in hand, and his usual good fortune did not fail him in his new venture, for he has produced some fine and striking varieties, which have passed into the hands of Messrs. E. G. Henderson & Son for distribution. They are all of free and vigorous growth, with bold trusses of large well-formed flowers. Their names are—Camallo, rich lilac tinted with rose, and with carmine lines on the upper petals; excellent form, the petals nicely overlaying each other. Duchess of Edinburgh, elegant blush-white, with violet and rose twin streaks on the upper petals, and a rosy-pink blotch. Miss Blanche, soft delicate lilac, with violet-purple streaks on the top petals; this variety has a neat well-branched dwarf habit of growth. Nemesis, clear carmine deepening into magenta, and shaded with crimson, the upper petals pencilled with violet; flowers of fine form, and very effective. The last of the quintette is St. George, deep lilac shaded with carmine, and this has a free vigorous habit of growth.

Now that hanging baskets are being so much employed in public buildings, and also in conservatories, these new hybrid Ivy-leaved Pelargoniums will be found very useful in helping the floral effect. For pillars, whether within doors or out, and for vases, baskets and raised beds, to which it is desirable to have a nice fringe—for window boxes and other uses to which drooping plants can be put—they are particularly well suited; and as the foregoing varieties possess tints and hues not previously possessed by the Ivy-leaved types, they will be additionally valuable. They can be made still more effective by blending with them some of the best of the variegated forms, such as Compactum, Duke of Edinburgh, the old Golden Ivy-leaf, Holly Wreath, and L'Elégante. Of older green-leaved types, well deserving of cultivation, there are Willsii, Willsii rosea, Argus, Lady Edith, the Old White, the Old Crimson, and Peltatum elegans. *R. D.*

OUVIRANDRA FENESTRALIS.

Recently I have observed that one of your correspondents seeks for a few hints respecting the treatment of that wonderful vegetable production, Ouvirandra fenestralis. I beg to inform him that in the first place it is absolutely necessary that the plants be grown in a large vessel of water, thus avoiding by the bulk of water any sudden change of temperature, which is found to be most injurious to the plant—so much so, that it not unfrequently kills it, or causes it so much injury that it takes many months to recover. The water should be kept to as near 70° as possible, and the vessel containing the plant should occupy a somewhat shady part of the stove. If too much exposed to the light it will be found that the plant rapidly becomes covered with a confervoid growth, which shortly causes the leaves to decay. It is an undeviating rule in plant growing to copy Nature as much as one is able, and as the Ouvirandra is found growing in rows near the margins and in proximity to where the small streams enter from the land, it is necessary to give the plant a thorough washing every morning; indeed the more frequently this is done the better, provided care is taken to have water the same heat as that the plant grows in, using a fine rose watering-pot, and holding it well over the plant so as to wash off any sediment that may have accumulated while the water was stagnant. It is also important that the leaves float on the surface of the water and do not remain underneath it as I have sometimes seen. Moderate sized plants (from twenty to thirty leaves) have been found to do best when their crowns have been from 4 to 5 inches below the surface, always being careful to have the water full to the brim of the tank, so that that which is poured over the plant from time to time may freely run off. It is best to use pure rain-water when it is obtainable, as it is much softer than that taken from wells, which in most instances is hard and unsuitable for growing plants, aquatic plants in particular.

Another grand point in growing this plant successfully is the soil, the best being good moderately strong yellow loam, with about one-fifth sharp sand and a small portion of thoroughly decayed vegetable mould, taking care to have ample drainage, although the plant grows in water. To keep all firm, use small pieces of stone or spar on the surface of the soil, in order to prevent it being rendered too light for the roots by frequent waterings. It is advisable to change the soil

in the pots about three or four times during the year, or more frequently if the soil has the least appearance of becoming sour or unhealthy. Some occasionally pour over the plants water that has had a portion of rich soil stirred in it, but I have invariably found it to damage the plant instead of benefiting it, although undoubtedly in its native habitation after heavy storms the banks become muddy, carrying the soil down the streams and covering the plants. The rivers are partially dried up during the hot season, leaving the Ouvirandras high and dry for some months, when the floods of the rainy season commence, the leaves appearing with great rapidity, and continuing to grow so long as they remain covered with water. I have not yet heard of any one who has tried the experiment of drying off the plants. It may possibly be of some advantage, tending to strengthen the tubers, by returning to them the sap of the leaves dried off. *Subscriber.*

—— The valuable suggestions which have been made by Mr. Eyles (see p. 138) regarding the culture of Ouvirandra fenestralis, or Lace-plant, may be made still more valuable if you will permit me to add an account of our mode of treatment, and the results attained.

As I consider the house or place where the plants are grown, a matter of the very first importance, let me try to give you a description of the place where we grow our plants, with such success as to excite the wonder and admiration of all who have had an opportunity of seeing them. In an intermediate house, at the end of a back stage used for growing a collection of Adiantums, stands the tank, 4 feet by 3 feet by 2 feet deep, surrounded by rockwork, so as to correspond with that end of the house which is used as a rock fernery.

A path winding amongst the rocks leads round two sides of the tank and into an Odontoglossum-house at a higher level; in this is placed a small tank to act as a feeder by means of a small pipe placed about 15 inches above the water level in the large tank where the plants are grown. The pipe is only used occasionally at its full force, as the merest drip at such a height suffices to give the necessary motion to the water below. As the tank is set perfectly level, and filled to the overflow, every drip, or the slightest motion, acts like the ripple on the calm lake, carrying every speck of dust or Conferva over the edge of the tank. By this means, together with a free use of the syringe, the water is kept pure and clear to the bottom, the leaves of the plants clean, healthy, and transparent. The Lycopodium, Panicum, &c., planted on the rocks around, often find their way into the water, as if to dispute possession with its true occupants, where, if they don't help to keep the water sweet, or in a good growing state, they at any rate look pretty. The water used is at the same temperature as the house the plants are grown in —ranging from 45° to 60° in winter, and seldom exceeding 75° as the maximum, with sun-heat in summer. There is no bottom-heat, standing on pipes, or any appliances of that kind.

As to the potting material employed we are not over-particular, but use an ordinary yellow loam that looks like brown mud after being a time in the water. Six-inch pots are the largest we use, supported in the water on inverted pots or otherwise, so that the crown of the plants is within an inch of the top of the water, allowing the leaves to float easily near to the surface, starting at right angles from the plant. Now as to the result of this mode of treatment, so much at variance with that generally adopted—"strong heat," with such an amount of "care and skill requisite," enough to frighten, as it often does, young beginners from ever attempting to grow such rare and interesting plants as the Ouvirandra, I may state that about four years ago Mr. Williams, of Holloway, sent us a few small plants—I suspect, after reading what Mr. Eyles says, that they must have been seedlings, but I have no doubt Mr. Williams can give the desired information; two of these plants we exhibited at Glasgow and elsewhere in large bell-glasses with very little damage, but one of the plants I was specially desired on no account to take out of the house, and that plant now measures 2 feet 6 inches in diameter, with over fifty leaves, large and small, many of them over 12 inches long by 5 inches broad. What they may be yet it would be difficult to guess, as they still keep growing from year to year, increasing both in size and beauty. *Robert Todd, Rawcliffe Gardens, Glasgow.*

OLD MAPLES.

As some apology for continuing my looks at old trees, as observed in numerous country rambles, I may adduce what Walter Savage Landor has said as a sentimental observer, without reference to botanical or physiological ideas. "Old trees," he remarks, "in their living state are the only things that money cannot command. Rivers leave their beds, run into cities, and traverse mountains, for money; obelisks and arches, palaces and temples, amphitheatres and pyramids, rise up like exhalations at its bidding; even the free spirit of man, the only thing great on earth, crouches and cowers in its presence; it passes away, and vanishes before venerable trees." Nevertheless, though old trees are not to be purchased except with the land on which they are located, perhaps I ought to say, in the interest of nurserymen and the lovers of arboriculture, that young trees are to be bought, and with the time that geologists are always asking for, they will become old, and their progress of growth may be watched with interest.

FIG. 29.—OLD MAPLE NEAR POWICK, WORCESTERSHIRE, 12 FEET GIRTH.

The Maple (Acer campestre), not being valued as a timber tree, has received but little attention from writers on forestry. Gilpin, indeed, treats it with contempt, as seldom seeing it "employed in any nobler service than in filling up its part in a hedge, in company with Thorns, Briars, and other ditch trumpery." But he afterwards admits that he had not met with specimens enough of this tree to form any opinion of its general character. From this it would appear to be but sparingly dispersed in the south of England, though of common occurrence in the midland counties; and, according to Mr. Selby, it does not extend to the most northern counties or to Scotland, "neither has it been found in Ireland." This seems rather strange, for the Maple is a sufficiently hardy tree, and is said to be indigenous in all the middle states of Europe. Selby, however, in his *British Forest Trees*, rescues it from the odium unjustly thrown upon it by Gilpin, as he says that "under favourable circumstances we have frequently seen it attain a size nearly approaching that of a tree of the first rank, with a handsome outline and picturesque appearance." But although the Maple, if left to its own efforts, will attain the dimensions of a forest tree, yet it can scarcely be praised as making a handsome appearance in woodland scenery. It seldom rises to any considerable height, though its branches may spread widely, but are mostly concealed in a dense mass of foliage, and in age the trunk becomes knobby and distorted. The flowers, being small, make no show in the spring, but when the winged seed-vessels are matured and become tinged with red in autumn, the declining sun lights them up in colorific splendour; and the Maple, contrasted with other trees in sober green, then becomes an object of beauty. The leaves before they fall assume a pale yellow tint, and well contrast with the sombre hues of other foliage.

Strutt, in his *Sylva Britannica*, gives an etching of a Maple growing in Boldne churchyard, within the New Forest, that Gilpin considered the largest (and probably the oldest) in England; and here, under the shade of this tree, and amidst the scenes he so much loved, he elected to be buried. Close to the ground this tree is stated to have been 12 feet in girth, and at 4 feet from the ground 7 feet 6 inches, and 45 feet in height. I have, however, met with several Maples in Worcestershire equal in magnitude to this "Boldne Maple;" and on the banks of the River Teme, near Powick, 3 miles west of Worcester, is one much larger, the trunk dividing into three huge arms, supporting a multitude of lesser branches and dense foliage. This wide-spreading tree measured 15 feet in girth near the base at the time when it was sketched, and would be much more higher up from the divarication of the boles. (See fig. 30.) It was rather more than 40 feet in height, and must be of very considerable age.

Another old Maple, in a very decayed state, and therefore older than the first mentioned, also stands on a bank not very far from the River Teme, between Powick and Worcester. This is remarkable from having a younger and very tall scion, itself of large size and with spreading branches, proceeding from the base of its old progenitors in a very singular manner, and may probably last as long (see fig. 29). The girth of the old and young boles combined exceeds 12 feet. *Edwin Lees, F.L.S.*

EARLY PEACH CROPS FAILING.

MOST people who are called upon for a supply of early Peaches will now have their trees in full bloom, and in many cases set, and although we have not had a very favourable winter here, yet it has been, comparatively speaking, mild, and vegetation is too far forward should the early spring be severe. But, to recur to my subject, the setting of early crops of Peaches in some hands is rather a precarious matter; last year, for instance, there were more failures in this way than I have known of for some years, no doubt through the winter being so unusually dull and foggy. I never remember so long a winter, nor one calculated to produce more evil results. It was the "rock" upon which more than one or two of the "craft" perished in this neighbourhood.

A good deal has been written respecting Peach culture in the pages of the *Gardeners' Chronicle*, by abler pens than mine; but the wholesale havoc that is sometimes made of Peach crops at the critical stage of "setting" renders it imperative that we should revert to the subject annually for the sake of beginners, and also to assist those who by a stroke of good luck, or otherwise, assume a position for which previous practice has scarcely prepared them. By this I mean that a man may be a thorough plantsman, and even manage seasonable crops of fruit tolerably well, but he might hopelessly fail in the management of very early fruit. My own observation leads me to think that the production of early Peaches and Strawberries especially, is more a question of time than many people seem to think. Hurried crops of the above, even if they are partially successful, are seldom up to the mark; and if appearance be at all appreciated on the dessert-table such crops are a long way from satisfactory, either to the gardener or to his employer. I have the satisfaction of serving an employer who prefers one good fruit to a dozen bad ones, so that I never go in for quantity; and the best Peaches I ever gathered were those from a house started on November 1, and the first fruit gathered on May 20 following, or almost six months from the time of starting. The wood was thoroughly ripened during the autumn, and although the trees had been forced for a long number of years

they were, nevertheless, in excellent condition, and the process of forcing was carried on slowly, every advantage being taken of sunny days. We always made it a point to have our maximum heat at 12 o'clock each day; this gradually decreased afterwards, and we were nothing alarmed if we found the thermometer standing at from 35° to 40° in the morning. During the setting period our treatment was, of course, humoured according to the state of the external atmosphere. In dull, foggy days we maintained a dry atmosphere, with, at all times, a slight chink of air. But no definite rule can be laid down upon this point; it is solely a question of weather and experience in the hands of the operator. During sunny days it was our practice to shut in and damp down the house for a time, taking care as soon as the moisture was absorbed to slightly open the ventilators again—I believe this dewing of the borders and paths and temporary shutting up to be very refreshing to the expanded flowers, and to greatly assist the work of fertilisation, but the weather must be suitable.

I am adverse to the practice of syringing the trees themselves when in full bloom, for the simple reason that it is not a safe one in everybody's hands. No doubt the syringing process is safe enough in the hands of the eminent fruit grower who has recommended it—I should have no hesitation in adopting the syringing system myself—but I should be careful in selecting my weather for carrying out the operation. I need not remind the readers of the *Gardeners' Chronicle* that we have usurpers in our ranks, and I think that if Mr. Simpson had seen one of those individuals apply a "cold bath" to some Peach trees in bloom, as I once did, he would hardly recommend the practice as a general one. It is not an essential in Peach forcing, and consequently there is no advantage in running any unnecessary risks.

I think it is also a mistake to carry "mulching" to the extent of manure-heaps on inside borders; all gardeners believe in reasonable mulching as being beneficial in more ways than one, but those plasterings of fresh cow manure which are too frequently used for imaginary purposes I cannot understand. Can we consider the powerful effluvia arising from fresh cow manure in a confined atmosphere as in any way assisting the process of fertilisation? I am at a loss to know why these manure heaps are applied at a time when the trees are at comparative rest? Is it not a settled question that the success of a fruit crop depends on the previous season's treatment? And is it not an equally settled point that the time to feed fruit trees is when they have used their stored-up sap? When the young growths are demanding a fresh supply of food from the roots, when there is both fruit and foliage to support, is in my opinion the most rational time to apply stimulants, and especially in the case of Peaches. I have proved to demonstration that two or three doses of manure in a liquid state are of more use than all the surface plasterings in the world; the last dose should be given immediately after the stoning period, when the Peach shows unmistakable indications of the last swelling and the trees are called upon for their last effort to complete the final swelling and ripening process.

Before I conclude these few hints on some points in Peach forcing it may be interesting to some of your young readers to point out the utility of the annual removal of young Peach trees when they have been neglected for any length of time. In the autumn of 1874 I lifted all the trees in one house here which had been barbarously treated and allowed to grow almost as they would for several seasons. The trees were diligently attended to during the previous summer and the equalisation of sap attended to as carefully as possible. It is almost "magical" what can be done with the finger and thumb during the season's growth. The trees were entirely lifted in 1874, and although they had been robbed by a quantity of knotty fleshy roots, which threw up suckers in abundance, yet they had a splendid lot of fibrous roots owing to the light leafy nature of the border in which they grew. We remade the border with stuff of the right sort and replanted the trees, and to my astonishment we had a heavy crop of fair fruit, but I am sorry to say we overcropped some of the trees, as indicated by several unshapely fruit; and were served rightly for our greed.

This autumn I again lifted the trees, and was amply repaid for all my trouble at the sight of such a mass of healthy fibrous roots. Necessity compelled us to remove the trees to a house with a south aspect for early work, and this operation was carried out when the leaves showed the first symptoms of having performed their functions. After being planted in their new quarters in a border again specially prepared for their reception, we mulched the trees, kept a close house, and syringed them once or twice daily according to the state of the weather until all danger of shrivelling was past, after which time the house was, of course, thrown open to allow the trees their period of natural rest.

I am strongly disposed to think that this annual shifting has caused the trees to plump their buds quicker than they otherwise would do. We shut the house up on January 1, and to-day (January 23) they are a beautiful mass of rosy and pink-tipped buds bursting with every promise of a moderate crop.

The greatest success I have ever known in the shifting of large Peach trees was carried out by Mr. Todd, gardener to the late Robertson Gladstone, Esq., Court Hey, and brother to the ex-Premier. It is a case well worthy of publication, as showing what can

Fig. 30.—Triple boled maple, 15 feet girth, near Powick.

be done with large fruit trees when people really understand what they are about.

When Mr. Todd was appointed head gardener to the late Mr. Gladstone, there was a new Peach range erected which was intended to be planted with young trees from the nursery. Mr. Todd would, however, have been unworthy of his "training" if he had acceded to such a slow mode of procedure; he had got his eyes on an outside wall of fine old trees which in Lancashire bear a crop about once in three years, and very wisely decided upon shifting every alternate tree from the outside wall into the Peach range. By this happy "hit" he not only filled his Peach-house for nothing with fruiting trees, but he also gave the trees on the wall a chance of extending themselves, which they did, and with the advantage of greater space of wall, and, consequently, greater chance of thorough maturation of the wood in our dull climate. These old trees, after being lifted and root-pruned, bore an abundant crop of excellent fruit. Those that were taken inside had of course every care taken of them; and, although the lifting process was carried out in January, 1874, the trees were allowed to carry a moderate crop the same year, and in the following autumn were partially worked under, the object being to again introduce a compost which was likely to be of a more lasting character than that in which they were first planted.

The success in this case was something wonderful, and at our local shows last year fairly astonished some exhibitors, who had hitherto not been accustomed to do battle with such a formidable opponent.

For the further benefit of your young readers, I may state that a few dishes of prize fruit were far from being Mr. Todd's object; on the contrary, the crop as regards quantity was beyond the average, and for size and "perfect finish" I have not seen its equal for some years.

Mr. Todd has been appointed as gardener at Roby Hall, and with a fine range of vineries and Peach-houses (the former with fine young Vines, some of which are in a prosperous state, some three years old, and the latter with some good old trees) at his command, I shall be much disappointed if I do not hear of him as being a successful exhibitor at some of our great shows before long.

Mr. Simpson, of Wortley Hall, may well be proud of his late pupil as a fruit grower, as I am of being his old companion of the spade. *W. Hinds, Otterspool Gardens, Liverpool, January* 23.

Foreign Correspondence.

BANGALORE. — The Bougainvillea spectabilis is out just now in full beauty at Bangalore and other parts of the Mysore province, and the effect of its large masses of bright mauve or peach-coloured bracts, with their small lemon-yellow trumpet-shaped flowers nestling between them, is gorgeous, the inflorescence being so abundant as to predominate greatly over the true foliage, which is of a sombre green. When the difficulty of flowering even a small specimen in this country is taken into consideration, a bare matter-of-fact description of the spectacle that lasts from this time to abont the end of February will be read probably with some expressions of doubt, but any one who has seen this grand and abundant climber "hanging its leafy banners out," to woo the extreme heat of a mid-day sun, would at once acknowledge that very "tall" writing would be necessary to exaggerate the reality. Driving about the pleasant station of Bangalore it may be seen, here, in great luxuriance, topping a large Mango tree, there covering an ugly outcrop of rock, or arranging itself naturally in the most tasteful way over a tangle of scrub, or an old wall, and almost everywhere overrunning a porch, or "pandaul" in front of a porch, or neatly headed down and well pinched in to a large standard, set in a conspicuous place in a bed or on a lawn. At the Lál Bágh it is trained over a long wall and up the pillars of the entrance gates, and also against the blank gable ends. About twelve years ago two were planted, one on each side of the front room of the superintendent's cottage; the stems, which are now as thick as one's leg, have been kept bare up to 7 feet, from which point the foliage branching out is supported on a double series of uprights, and spread over connecting pieces, so as to form a living verandah in front of each of the French windows. The growth is so strong that it has become possible, with proper support, to train some of the grosser shoots over the roof till they meet in a permanent floral arch, which will have a very striking effect. It is proposed also to grow Bougainvilleas on rough espaliers of upright stems 12 feet high, crossed with strong wiring, and to train them so as to form a backing to two borders of foliage shrubs and plants that skirt a broad walk some 100 yards long, the surroundings of which it is desired partly to conceal. It is considered quite feasible to do it in this way, and to produce at the same time a perfectly unique floral display at this time of the year, and a green screen at all times. The plant, as may be readily imagined from the above description, finds a most congenial habitat in the Mysore country. It seems to delight in hot, bright sun and dry weather, grows without any care whatever, and will stand almost any amount of neglect or hard usage in the way of pruning and shaping. In fact, it is so common that proper attention has not hitherto been paid to its capabilities as a magnificent plant for special and extensive display. What has lately been done in this direction is most encouraging, and an incentive to persevere. The large plant that was photographed three years ago, and figured at p. 181, vol. iii., 1875, of the *Gardeners' Chronicle*, covered a Casuarina tree in front of the Cubbon Hotel, but it was unfortunately almost entirely destroyed in the severe weather in June last. It grew up the tree gradually year by year, till at length it so completely enveloped it that nothing was visible of the support except here and there a few of its feathery sprays peeping out from a dense mass of the climber, whose vigorous growth bowed down the slender head of the friendly ladder by which it was enabled to climb so high. This gave the Bougainvillea a rather top-heavy appearance, but it was relieved by its strong colour-laden shoots, which, no longer finding anything to grasp, drooped in pendulous curves, and swayed about in the wind and sun in such a manner as to present the most sparkling play of light upon the rich mass of colour that to be justly appreciated must be seen. It is difficult perhaps to believe that the imagination has not, to some extent, been drawn upon in the above short description, but such is not in any way the case. It is sober fact, and had not this particular specimen been destroyed, it might have been made to attain a still greater height than 35 or 40 feet. It was the fault of the support, not of the growing power of the Bougainvillea that made it, after attaining that elevation, begin to turn earthwards again, and by its weight help to drag down the tree by which it gained it. Although it flowers so very freely and luxuriantly in the Mysore country, it does not seed; it is propagated by layering only. Can any of your readers give any information on this point, and if in its native country the little flowers bear seed, and if so of what kind?

The Poinsettia pulcherrima grows at Bangalore in the most abundant manner, without any care whatever. There are two kinds—the scarlet-crimson and the straw-coloured. Large shrubs of them may be everywhere seen, looking sticky and dry in the hot season, when they apparently take their annual rest; but on the setting in of the monsoon they come out in great splendour, the coloured bracts often almost overpowering the foliage. A large shrub of this kind on a carpet of bright green grass has a very excellent effect. Over fifty leaves have been counted in some tiers of bracts, and in 1874, when the unusual rainfall and intervals of hot sun forced vegetation on very much, several of the bracts in a specimen in front of my verandah were distinctly triangulate-lobed, like the true foliage. A few of these turned into true green leaves, and some of the lanceolate bracts were alternately green and red blotched. The flowers seemed larger than usual, and an effort was being made when I left to obtain permanently variegated leaves. The accidental variegation of 1874 was to be watched and reported on, but the year 1875 was characterised by a great want of rain, so that probably the opportunity was not offered. The Poinsettia grows most freely from cuttings, which strike very readily, and is a plant that finds a most congenial habitat there. The new P. pulcherrima plenissima—the sketch and dried specimens I saw at Mr. Veitch's—would probably do as well at Bangalore as its elder sister. In such case it would be a magnificent introduction, and I have already brought it to the notice of the Chief Commissioner of Mysore. On one occasion I found two large shrubs in the garden of a house I had just taken. It was just after the monsoon, and no care whatever had been taken with them. They were about 10 feet high, and were at once severely pruned down to 6 feet. The reason of the severe practice was that they obstructed the light from the windows of the study. After such treatment they looked very bare and woebegone for a time, but with a little attention to the root and soil they recovered at once, and put forth such a mass of brilliantly coloured bracts that to look long at in the full sunlight was almost too dazzling. The Duchess of Edinburgh Rose from all accounts should also do well at Bangalore. The Tea and Noisettes flourish to perfection, and I have taken steps to introduce them. *J. P.*

THE CONSERVATORY AT CHITT'S HILL HOUSE.

THE illustrations (figs. 31 and 32) on pp. 176, 177, represent the exterior and interior of a wood and iron conservatory, provided with all the improvements which long experience has suggested. Both the elegant and varied exterior (fig. 31) and the capacious and convenient interior (fig. 32) show a marked advance, as regards tasteful construction, beyond the ordinary dome-shaped or the rectangular curvilinear structures which were the types commonly seen in former days in an ordinary conservatory attached to a private dwelling of moderate size, and in which, besides the hard and monotonous lines of the building itself, the crowded arrangements of the interior entirely prevented its being visited with that degree of ease and comfort which such a building as that we now depict is calculated to secure. This is, moreover, a striking example of the way in which a skilful designer should and does encounter any obstructions, adapt himself to any conditions of site and glean from them new ideas of form and beauty. At a short distance from the house, directly behind the octagon end, as seen on the exterior view, stands a very fine specimen of the Araucaria, and its retention the proprietor very properly made a *sine quâ non*. Now the most obvious and ordinary way would have been to stop the conservatory short of this tree, but this very condition in skilful hands suggested the narrowing of the building at this point, so as to escape the tree, and led to the erection of the elegant octagonal dome represented in our view.

This handsome structure, which by the aid of photographs we are able to illustrate, has been erected for S. Page, Esq., at Chitt's Hill House, Wood Green, by Messrs. J. Weeks & Co., of the King's Road, Chelsea, who have long occupied a prominent position amongst horticultural builders and engineers.

We are indebted to these gentlemen for this opportunity of showing how greatly taste in designing such structures has improved, and we submit these figures with the greater satisfaction, as we look upon this as a model structure of its particular type. It is a structure which might be copied either in a complete or modified form as an appendage to any good villa residence or small mansion, which it would most tastefully embellish, and if somewhat amplified it might be made to adorn a more stately home. It is, however, as a well-designed conservatory for a villa or small mansion that we particularly invite attention to it, since there are thousands of such residences which are either altogether unprovided with suitable plant structures of this type, or which have to endure the presence of such as are flimsy and tawdry—the work of an ordinary builder, or heavy, inelegant, and otherwise objectionable from being left too much in the hands of an architect.

The size of the portion adjoining the residence is, in this case, 30 feet by 25 feet, with a height in front of 12 feet inside the building, the ventilating lantern being 24 feet high. The domical portion is an octagon of about 15 feet diameter, with an extreme height of about 30 feet.

It will be seen that the interior, instead of having the centre occupied by stages for pot plants, or by beds for planting out the subjects adapted for growing in such a house, is kept open for promenading, in which form it is obviously more enjoyable than when the promenading space is confined to a narrow pathway. The angles are intended to be filled with tastefully selected groups of plants, and the roof will, in due time, be furnished and festooned with choice creepers, while the front part is provided with a low stage next the upright sashes for choice flowering subjects brought in from the reserves. Basket plants could be suspended here and there from the roof, and specimens of Palms, Tree Ferns, and other effective subjects set in appropriate positions, so that one might walk in and out amongst or beneath them; while there would be still maintained throughout that luxurious breadth and freedom which under such circumstances is so enjoyable. *M.*

Garden Operations.

PLANT HOUSES.

GREENHOUSE HARD-WOODED PLANTS.—Hard-wooded plants at the present day are much more generally grown than formerly. Whatever purpose they are required for, it is necessary to look well ahead, so as to always keep up the supply of young stock coming on to take the place of such as get worn out or become too large. This is particularly the case when the plants are used for conservatory display, as here they are much more likely to suffer by getting bare at the bottom and unsightly through having to stand in close contact with other things. Inattention to this matter is frequently the cause of a deficiency when required. Two or three dozens of small plants each year will keep up a large stock, with ordinary care and attention. If these were not got in during the autumn no time should now be lost in procuring them, for if it is deferred until later on, they begin to make growth, which is checked and injured in transit, and the time for potting is delayed so as to interfere with the season's growth. Where the plants are not wanted for exhibition, and there is no particular object in growing delicate subjects, it is better not to include them. There are a number that may be grown in even the most select collections without danger of their ever producing a monotonous effect, when judiciously mixed with flowering subjects, and they are at all times interesting, but more especially in the summer season, when the greater portion of the blooming plants are over; and, as they get large, are most effective for standing in halls, corridors, and similar places on special occasions. The following will be found to answer the required purposes:—Aralia Sieboldii and its variegated form, A. Sieboldii variegata, Cordyline indivisa: a young plant or two of this handsome species should always be had coming on to take the place of older specimens that are apt to get out of order at the roots; the principal thing to observe in its cultivation is to grow it in good, strong loam, with enough sand added to allow the water to pass freely through it. Pot firm, treating it like a Pine, by not giving it too much root-room, and being careful not to over-water at any time, but especially during the winter and early spring, when the roots are making little progress. Dracæna australis and D. atrosanguinea—both of which rank amongst the best fine-leaved plants grown, and will last for years if fairly attended to; they do well in good ordinary fibrous loam, and grow rapidly if assisted with manure-water in the height of the growing season. Beaucarnea recurvata is another fine plant that grows freely, and from a small state, if abundantly supplied with water: it should be kept a few degrees warmer than a cold greenhouse in winter. Dasylirion plumosum is a fine variety of the common D. acrotrichum, that will last for a lifetime. A pair of these most elegant drooping plants, to stand opposite each other in a good sized house, are not surpassed by anything in cultivation. They delight in plenty of moisture at the root during the growing season, with an application weekly of manure-water. Yucca variegata, Y. albo-spica, Y. filamentosa and Y. Stokesii, the latter not unlike Y. quadricolor, with stouter leaves containing more colour. Phormium tenax variegatum, an erect and handsome New Zealand Flax, which will no doubt be much grown for conservatory use as soon as it gets more plentiful. Cycas revoluta, which is now being imported in the shape of plants with clean straight stems, from 6 to 12 feet in height, like Tree Ferns, to which they will form fine companions, equal in appearance, and preferable in some respects, especially in their not outgrowing the situation they are required for. To these may be added some of the handsomest Macrozamias, such as M. corallipes, M. cylindrica, M. elegantissima, and M. plumosa. These remarkable plants, natives of Australia, are destined to form quite a feature as conservatory subjects. They possess two properties that render them particularly valuable—they are easily grown, not liable to die off or get into bad condition, and when obtained in a size such as to make them effective may be kept any reasonable number of years. *T. Baines.*

FLOWER GARDEN.

Every means should be adopted to keep pace with the work, that it be done at the right time, as success is oftentimes as dependent on the season of its execution as on the mode of doing the same. All shrubbery planting operations should be brought to a conclusion as soon as possible now, and the strength concentrated on such works as verge cutting and levelling, surface dressing and regravelling walks, hedge clipping and making of edgings with Box, Arabis, Festuca glauca, Festuca viridis, Daisies, Polyanthus, &c. Make good from the reserve garden all blanks in beds of spring-flowering plants, and any that have been loosened in the ground by the late frost must be pressed firmly again into the ground. Beds of Tulips and Hyacinths are very forward, and should therefore be protected in the event of sharp frost: sticks hooped over them and covered with mats will keep them from injury. Beds and borders intended for the summer display, and that are now unoccupied, should be dug or trenched, and if the arrangements for planting are complete some of the hardy plants may be at once divided and planted. All the following we use largely, both as edgings to flowering plants and for covering the ground of succulent beds:—Sedum corsicum, S. glaucum, S. lydium, S. acre elegans, Saxifraga Aizoon, S. hirta, S. ceratophylla, Ajuga reptans, Aralia aurea variegata, Sempervivum calcarem, S. montanum, S. arachnoideum, Thymus corsicus, T. hirsutus, and the variegated kinds. All the above are also useful for covering mounds in rockery gardens and dotting about amongst Ferns, where thinly planted, to furnish the ground. Autumn-struck plants of Violas and Pansies may also be planted in their permanent place. The variety Blue Bell of the Viola cornuta Perfection type is the most continuous-flowering kind ever known, and the very best for summer bedding, as it never mildews or fails to flower from February to November. A few Roses, hybrid perpetual kinds, may now be pruned to induce earlier flowering; any still to be planted should be done forthwith, and the whole well mulched with rotten manure. The propagation of soft-wooded plants for the flower garden must now begin in earnest. Iresines, Coleus, Heliotropes, Petunias, Lobelias, Ageratums, and Verbenas, strike best in a moist heat, ranging from 70° to 75°. Pelargoniums, Mesembryanthemum cordifolium variegatum, and other tender succulents, require the same temperature without the moisture, or they soon damp off. The seeds of subtropical plants recommended to be sown in last Calendar should be potted off soon as large enough to handle; some of them, notably so the Castor-oil and Acacia lophantha, die if the roots undergo the least mutilation through division from the seed-pans; for that reason we usually sow these singly in small pots. If Pyrethrum Golden Feather be sown now under handlights, or on an open border with a sunny aspect, it will be in ample trim for the bedding season, and if sown thinly it may remain in the seed-plot till wanted. *W. Wildsmith.*

FRUIT HOUSES.

VINES.—Vines now showing fruit should be stopped at one or two joints above the fruit, except in the case of leading shoots, which should be allowed to ramble more freely; in some instances also it may be desirable to extend the side shoots to cover some defective break or vacant space. Keep the night temperature 60° to 65°, increasing to 68° to 70° during the time the Vines are in bloom. At this period syringing should be discontinued, and a rather dry atmosphere maintained. In very cold or dull weather, when air cannot be given daily, the clusters should be gone over towards the middle of the day and gently shaken, so as to disperse the pollen and induce the berries to set freely. In the most favourable weather this is necessary with some of the more shy setting kinds. Where the borders are inside the house due attention must be paid to keeping them well watered. If the drainage has been properly attended to in making the borders, water should be given liberally once a fortnight, or oftener if required. A light mulching of stable litter and droppings should also be placed over the whole surface; this, if sprinkled daily, assists in preventing rapid evaporation, and tends to promote a more equable moisture in the atmosphere of the house, while the Vines also show its beneficial effect by increased vigour and more rapid growth. Where late Grapes have been cut, the Vines should be pruned as soon as possible. Where grown on the spur system it is customary to prune back to one eye, but unless the Vines are in robust health and the wood thoroughly matured, this is sometimes carried to excess, the buds at the base of the last year's growth being occasionally found to break imperfectly, or otherwise to break weakly, and so show but small bunches. For these reasons it is preferable to cut to two buds, and unless required to fill a vacancy, rub off the weaker one as soon as the best show is perceptible. *W. Cox.*

MELONS.—The earliest plants will now be ready for turning out into the fruiting hills or pots—if the latter, which is far the better way, where quality takes precedence of quantity be adopted, the pots having been filled and plunged as already directed, place a single plant in the centre of each pot, keeping the top of the ball on a level with the rim. Lead the young vine three-fourths of the way up the trellis as it grows, pinch out the point, train out the side shoots horizontally, and stop according to the space they have to fill. Under the above treatment shy kinds become prolific, show at every joint, and if very early fruit is wanted, the first female blossoms may be impregnated and allowed to swell. Select fruit of equal size for the crop, otherwise the most favourably placed will take the lead. The Melon delights in heavy turfy loam, with one-sixth part of old mortar rubbish added. Stimulants should not be applied until after the fruit is set. Plants intended for pits and frames should be allowed to get well-established in the pots, when they may be stopped at the second or third rough leaf. Keep plunged near the glass to induce strong breaks, when they may be planted out, using a similar compost to that recommended for pots. Pot off young plants as they come into rough leaf. Look well after fermenting materials, protect from heavy rains, and keep a good supply of soil under cover in a dry airy shed. *W. Coleman.*

FIGS.—In the forcing of these trees in pots it is not sound policy to disturb them after they are plunged and growth is excited. In making up beds for these, care should, therefore, be exercised in selecting the most durable kind of leaves for the purpose, such as Oak, Beech, or Spanish Chestnut. These sorts got together in a dry state will produce the desired amount of heat throughout the entire period without molestation. From 70° to 75° at the roots will amply suffice; beyond this growth is oftentimes promoted too rapidly to be beneficial. Trees which have been subject to a course of temperate artificial treatment, superficially and otherwise, will by this time have made sufficient advancement in growth to need stopping. In the case of pot trees take out the point of all the shoots at about the fifth point, and leave the terminals unmolested on trees where a run of growth is desirable, as on such as are planted out and trained to walls or trellis. At this condition of growth the night temperature should not be less than 55° or 60° during daylight; slightly ventilate at 60°, and it may run upwards to 75° or 80° by sunshine, with a free circulation of air. Syringe twice daily, and keep the house generally moist. Trees in pots which are very fruitful should be encouraged by a surface-dressing of manure or manure and loam combined. This material will become filled with roots, and afford means of absorbing any stimulants which may be applied. Let succession crops be excited gradually: a night temperature of 50° to 55°, and 55° to 60° artificially in the day-time. *G. T. Miles, Wycombe Abbey.*

KITCHEN GARDEN.

With such a bad season as the last proved to be for ripening and harvesting some seeds there will be much difficulty in getting them up, and much care will therefore be required in preparing the land and taking advantage of dry weather for sowing the seeds. Peas especially appear to have suffered from the wet and cold during the early part of last summer, and as their vital powers are on that account at a low ebb it will be advisable to draw the drills some time previous to sowing, to allow the soil to dry, and, if at all retentive, to scatter some dry earth or ashes over the seeds before covering them in. As this is a crop that most aim at getting as early as possible, the little extra labour of sowing in boxes, pots, or pans of fine leaf-soil, and planting them out, is more than compensated for by the certainty of securing a full crop. Those now up should be sheltered and protected from severe frost by having some roughly sifted leaf-soil scattered up the rows, and as they become more advanced a few twigs of evergreen branches, to save them against cutting winds. To protect them from the ravages of slugs and sparrows nothing is better than soot scattered over them just after a shower, or when they are moist, and this answers the double purpose of stimulating and strengthening their growth. As a garden crop, Carrots are perhaps the most difficult to grow to get them fine and clean, as grubs of some kind generally attack them in highly cultivated ground, but a good dressing of soot dug in now, and another scattered over the crop after it is well up, will ensure having them in good condition. To get Brussels Sprouts early and of large size it is necessary to make the first sowing under glass, and as many other things, such as Celery, Cauliflowers, Lettuces, Leeks, &c., must now be sown in greater quantities than can well be accommodated in boxes or pans, a slight hotbed should be made up for the purpose. Sow in rows in light soil, keeping the same well up to the glass, to ensure strong, sturdy plants. Cauliflowers wintered in frames or under handlights should have air kept constantly on while the weather is at all favourable. Where hot-water pits are available for planting out French Beans, so that they can be afforded a slight bottom-heat, immense crops may be secured compared to what can be grown in pots, while they will last double the time in bearing. Afford to Asparagus a top-heat of 55° to 60°, and give air to colour and flavour it properly. A handful of salt thrown into the water and given when the roots require it will help to impart the latter. Keep the air of Mushroom-houses as damp as possible by syringing the pipes and other available surfaces, as a dry atmosphere is fatal to success. A temperature of 55° as near as it can be kept, and the air constantly charged with moisture, is the right thing for producing large juicy Mushrooms, short and strong on the stems. Where the necessary moisture in the air cannot be obtained from the house being too lofty, or in other ways unsuitable, cover the beds with nice clean hay, so as to keep them moist in that way. *J. Sheppard, Woolverstone.*

THE
Gardeners' Chronicle.

SATURDAY, FEBRUARY 5, 1876.

EVERY gardener is familiar with the manner in which LEAVES contrive to TURN THEIR UPPER SURFACE to the LIGHT, and acts on the hint so far as circumstances permit. Still the truth cannot be too well-known, and so we are induced to put on record the following illustration, which caught our eyes in the Aroid-house at Kew lately. Doubtless the occurrence must have often struck our Indian botanists, but, so far as we remember, or can ascertain from books, there is no record of it. There is a climbing plant common in Southern India and Ceylon, and which is known under the name of Pothos scandens. It is a plant little likely to attract the notice of any gardener who may be insensible to all beauty but that of outward form and colour, but it is one which a botanist looks on with interest by reason of the singular structure of its leaves. What we are now about to record will increase that interest. The leaves of this plant are similar to those of the Orange, in so far that the leaf-stalk is dilated into a flat green plate, like the blade of the leaf itself. This latter is jointed, by a well-marked articulation, to the stalk. Speaking then broadly, it may be stated that in this Pothos we have a leaf of two segments jointed in the middle. The object of this joint was beautifully shown in the shoot we observed at Kew. On that shoot, in some cases, the lower segment or flattened leaf-stalk was strictly parallel with the blade, leaf and stalk being in the same horizontal plane, thus: — ——, the shorter line representing the stalk, the longer one the blade. In some of the leaves the stalk and the blade were inclined to each other at various angles, as in ∠ or ⌜; in other cases the leaf-stalk was at right angles to the blade, thus: |——, the stalk being twisted at its base to allow of this change of relative position. By means of the twisting power, combined with the hinge-like movement of the blade on the stalk, the plant is enabled to place every leaf on the shoot in the very best position to secure the fullest exposure to light and air.

The conflicting requirements of different leaves on the same shoot are also dealt with by a satisfactory compromise, each leaf being made to assume such a position that while so placed as to gain as much advantage for itself as possible, it does not prevent its neighbour enjoying similar benefits.

The twisting of the leaf-stalks for the purpose indicated is so common a phenomenon, that it must be familiar to most of our readers. Mr. RUSKIN alludes to it in the fifth volume of his *Modern Painters*. In the cases to which this excellent observer alludes, the leaves, as of the Box, which primarily emerge from the stem in four rows, become arranged in two rows, one on each side of the shoot, so as to lie in one horizontal plane. This is brought about by the twisting of the leaf-stalks. We see similar illustrations in the Yew and in Hypericum calycinum, whose leaves are sometimes "decussate," as the botanists say (that is, each pair of leaves crosses the direction of the neighbouring pair at right angles), but in which, at other times, all the leaves are brought into the same horizontal plane by twisting of the stem and of the leaf-stalks. But in the instance of the Pothos, each leaf keeps its own position according to the point of its original emergence from the shoot, so that supposing the leaves to emerge in five rows from the stem, in five rows they remain. Each individual leaf here is twisted, bent, and adapted in a way peculiar to itself so as to ensure the results before mentioned. In the case of the Box or Yew the leaves are so twisted that each, no matter what its diversity of origin, assumes the same position as its neighbour. The instance we have called attention to above is the most complete and interesting case of the kind we know of. It is naturally in the young growing shoots, where growth is most active

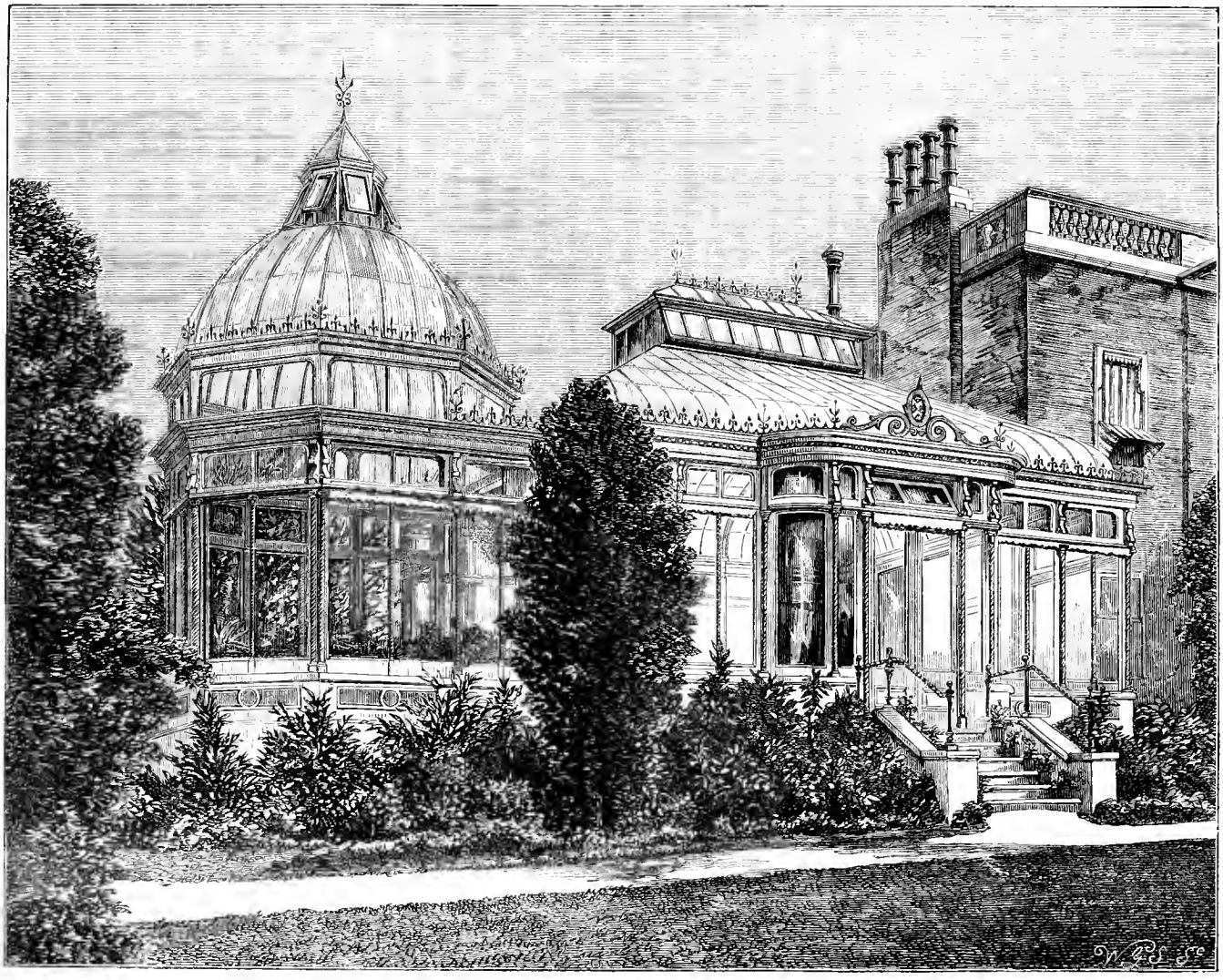


FIG. 31.—EXTERIOR VIEW OF THE CONSERVATORY AT CHITT'S HILL HOUSE. (SEE P. 174.)

that we see these phenomena exhibited most fully. In the older leaves the joints, as in their human analogues, get stiffer, and less inclined to move. The work is then entrusted to younger leaves, and the older ones enjoy the matters of "reserve," stored up partly by their own efforts in the past, partly by the work of the younger tissues in the present. The young shoots of the Pothos appeared to us to possess the gyratory movement common in climbing plants, and so well illustrated in Mr. DARWIN'S work on climbing plants, lately reprinted from the *Transactions of the Linnean Society*. It would be most interesting if some one with the requisite leisure would investigate the case of the Pothos, and determine the relative and reciprocal movements of the shoot and the leaves respectively. Meantime, we know enough to see of what advantage to the plant such requirements must be in the case of a climbing plant in a dense tropical jungle, and the intelligent gardener will see in it another instance of the importance of light and air in the case of plant growth.

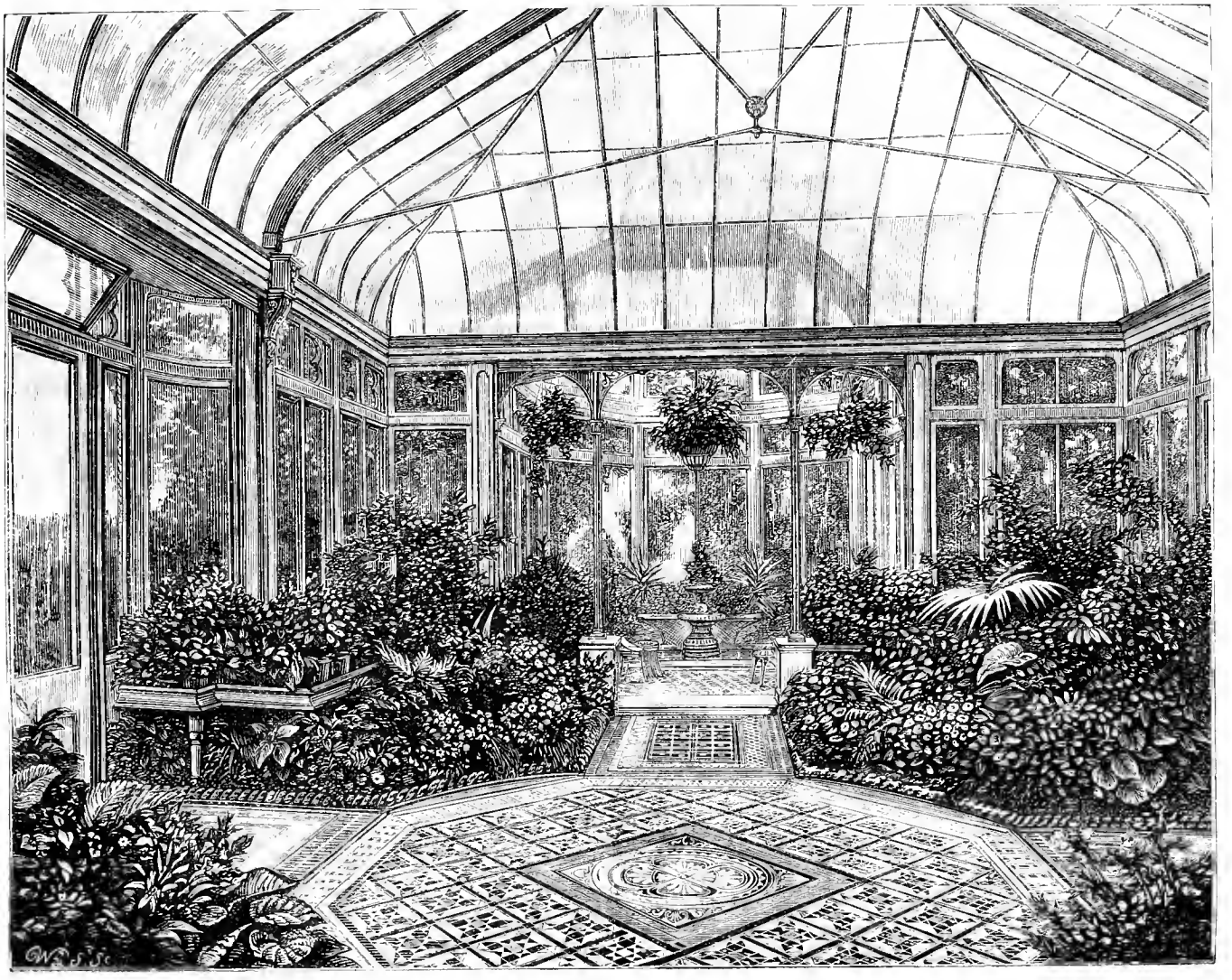


FIG. 32.—INTERIOR VIEW OF THE CONSERVATORY AT CHITT'S HILL HOUSE. (SEE P. 174.)

—— WHAT the result of the ANNUAL MEETING of the ROYAL HORTICULTURAL SOCIETY on Tuesday next will be is beyond our ken, even to surmise. Meantime it seems to us that the course that horticulturists should follow is to stick together, and act in concert, so that whenever and by what means the Society undergoes disruption, the horticulturists shall be able to claim as their right the title and functions of the Royal Horticultural Society. An entirely new society it would, we believe, be a mistake to attempt to found, but a thoroughly reconstructed society based on the old one, and inheriting by direct right its title, or if not that, then that of the Royal Horticultural Society of Great Britain, is within the bounds of possibility, by the aid of Parliament, or by petitioning HER MAJESTY. Separation alike from the "Commissioners" and the "local or Kensingtonian Fellows," appears to us to be absolutely essential; but in effecting the separation we must take care not to let either of the bodies we have named assume our title and privileges. Let us work with them as amicably as possible; let them arrange among themselves as to the Kensington garden and the debt; and let the horticulturists be wholly independent in the management of their own Society.

—— Lovers of Orchids in search of a new sensation should not fail to pay an early visit to the Clapton Nursery, where Phalænopsids may now be seen in such a wealth of beauty that even visitors familiar with that famous establishment have not seen before, and probably no one else, outside their native country. Between 200 and 300 plants are in flower, and the sight of the line of richly coloured flowers around a large span-roofed house is one to be remembered. The bulk of the plants are of P. Schilleriana, with a few of P. amabilis, and a good number of the new and rare P. leucorrhoda, and among each may be seen varieties more perfect in form and colour than we have ever seen before.

—— We have received a copy of the prize schedule of the INTERNATIONAL HORTICULTURAL EXHIBITION, to be held in DUNDEE, under the auspices of the Dundee Horticultural Society, for 1876. It has been decided by the Society to hold only one grand show this season, and to offer such an amount of prize money as, coupled with the spirit that may be expected to manifest itself among plant growers, will draw forth a keen competition; and it is hoped that all interested in the progress of horticulture will co-operate with the Society in making it a decided success. There are 209 classes, and the prizes being very liberal in amount, a good show may be confidently anticipated.

—— The gardeners in the neighbourhood of Wimbledon have long felt the desirability of occasionally meeting together "to peruse the various garden periodicals, and to discuss their merits," and have, as a result of such a desire made arrangements with the committee of the Village Club and Lecture Hall whereby the use of the latter for gardeners to meet in once a fortnight is guaranteed, and the committee will take in five additional weekly or monthly periodicals bearing on horticulture. Over forty gardeners have already entered their names as members, and the committee hope also to establish a library of standard horticultural works that are not within the reach of all, and therefore appeal to the kindness and generosity of friends to further that object, which cannot fail to be

advantageous both to employer and employed. Any desirous of subscribing are respectfully invited to forward their subscription to Mr. J. OLLERHEAD, Wimbledon House.

—— As evidence of the traffic in PINE TIMBER, (whether simply sawn or dressed) between foreign ports and this country, we may mention that an official return shows the town of Memel to contain fifteen steam mills and twenty windmills, all employed in the sawing of timber. The windmills, once a characteristic of this port, are gradually disappearing, the new establishments being all provided with steam-power.

—— In a recent report on the trade of Labuan we are told that the Dryobalanops aromatica, which yields the BORNEAN OR SUMATRAN CAMPHOR, is very rarely met with in the state which causes the secretion of the camphor in the crevices of the wood, not one tree in a thousand being found in this state, hence the high price of the camphor, the first quality of which is valued at £12 10*s.* per cattie in China. Its high value is on account of its slow evaporation, which renders it useful in embalming the dead. Its value as an article of export from Borneo increased from £1043 in 1873 to £2578 in 1874.

—— Mr. SHIRLEY HIBBERD's lecture on "The Cultivation of Hardy Fruits, with a view to Improvement of Quality and Ensuring Abundant Production," is announced for delivery at the Society of Arts, John Street, Adelphi, on Wednesday, at 8 o'clock. We are informed that tickets may be obtained on application to P. LE NEVE FOSTER, Esq., the Secretary, at the Society's offices, or to Mr. HIBBERD, Stoke Newington.

—— A little KNOWLEDGE of BOTANY, or, at least, a power of recognising common plants at sight, is a very desirable accomplishment in some cases. Here is a case in point. A child and sundry other persons partake of some broth, all become ill, and the child dies. Medical evidence, or, rather, medical opinion, which in this case especially are two widely different things, states that the broth contained arsenic in large quantity. On the other hand, there was no clue to the existence of the arsenic, whose presence seems, from the statement before us, to have been purely hypothetical. The medical paper from which we take this statement evidently considers that the "Parsley" put in to flavour the broth was the source of the mischief. This is what our medical contemporary states:—

"A portion of the so-called 'Parsley' which was put into the broth should have undergone a proper botanical examination. The young leaves of Aconite, if accessible at the season, may be easily mistaken for Parsley [?]; and the introduction of them by mistake would account for much which now appears mysterious. The substance which gave a green colour to the stomach should also have been examined. Some reference was made to the possibility of the Æthusa Cynapium, or Fool's Parsley, having been gathered by mistake and added to the broth: but this would not so satisfactorily explain the symptoms or rapid death. . . . The medical witness stated that some vegetable substance given to him for examination was 'ordinary Parsley,' and not Fool's Parsley; but his opinion on this point can hardly be received as satisfactory, when he immediately afterwards informed the coroner and jury that Fool's Parsley was the same as Water Hemlock!"

It appears to us that our contemporary's botany is rather rusty, as well as that of the medical witness, though it is true that a prudent *if* shields him from adverse criticism. At any rate, green leaves of neither Aconite nor Water Hemlock, which have not yet sprouted, nor of Fool's Parsley, which is a summer annual, would be accessible in any ordinary garden.

—— CLIANTHUS DAMPIERI, Deutsch Flagge or German Flag, was, says the *Hamburger Garten-zeitung*, raised by L. VIEWEG, of Wegleben, near Quedlinburg, from seed; and he has now, after three years' trial, found it to be constant from seed. Instead of the scarlet with a black centre of the typical C. Dampieri, this variety represents the German national colours—black, white, and red. The upper part of the flower is of a fiery scarlet, the centre is a glossy, deep, bluish-black, and the keel is pure white, with a sharply-defined red margin on the lower side. The separate flowers measure 3½ inches and upwards in length, and are borne in clusters of four to seven together. In habit it agrees exactly with the ordinary C. Dampieri, and it is an exceedingly free bloomer. Treated as an annual it is one of the most effective outdoor plants we have. The writer of this notice counted from 200 to 260 expanded flowers on each plant, at the beginning of August, in his garden. Its culture is of the simplest, and it by no means requires the nursing some people imagine. Although it flowers so freely it ripens comparatively little seed.

—— The Greek island of Andros, it is said, produces from 10,000,000 to 15,000,000 LEMONS annually. They are chiefly exported to Constantinople, the Black Sea, and the Danube, realising the average price of from £1 to £1 3*s.* per thousand. Large quantities of Citrons also are produced in the Island of Naxos, and exported to England, Austria, and Turkey. In Zea quantities of Valonia are produced: the quantity exported to England, Austria, Italy, Turkey, and Russia, amounting to near upon 2000 tons—the average price obtained being from £17 to £21 per ton.

—— The members of the Edinburgh Town Council have recently inspected the property at Inverleith, already alluded to by us and which it is proposed to lay out as an ARBORETUM. The area in question measures about 27 acres, and extends from the Water of Leith on the south to Inverleith Place on the north, with a width equal to about half its length. It lies along the western wall of the Botanical Gardens, and is nearly of the same acreage. Professor BALFOUR, who was present, considered that the ground was well fitted for the formation of an arboretum, both from the nature of the soil and the undulating character of the surface. He added that the Lords of the Treasury (Mr. SMITH and Lord SANDON), in their recent visit to Edinburgh, had expressed themselves highly satisfied with it. It was stated that the Government were prepared to lay out the ground and keep it up; so that the city would only be called upon to face the first outlay upon it—a sum of about £16,000.

—— In compliance with special requests from many of the members of the INSTITUTION OF SURVEYORS, the Council have arranged for a discussion of the provisions of the Agricultural Holdings Act, coming into operation on the 14th proximo. The discussion will be opened by Mr. D. WATNEY at the next meeting (Monday, February 7). The chair to be taken at 8 o'clock.

—— The *Annuaire de l'Horticulture Belge* is intended to fill the same office in Belgium that *Hogg's Year Book* and *Directory* do in this country. It is edited by the Professors of the School of Horticulture at Ghent. Business relations are now so intimate with Belgium that there are many readers in this country who may be glad to know of this useful little volume. It can be procured from the Secretary of the Cercle d'Arboriculture, 4, Boulevard du Château, Ghent.

—— The unequal distribution of rare plants in Switzerland is very remarkable, and M. ALPHONSE DE CANDOLLE traces relative richness in rare species to the earlier recession of the glaciers of the glacial epoch. RHINER, in his *Tabellarische Flora*, gives the following statistics of the number of peculiar species in the different cantons of Switzerland. Beginning at the richest, Valais has sixty-three species peculiar to itself, Tessin forty-eight, the Grisons thirty-five, and Vaud fifteen, whilst Lucerne possesses only two, Glaris only one, and Uri and Unterwald none, and not a single peculiar species is recorded from the vast canton of Berne! It is worthy of remark that it is the southern slopes of the Alps which are richest in rare species, and it is the chain separating Valais from Italy that yields nearly all the peculiar species of the canton, whilst that separating it from Berne is remarkably poor.

—— Dr. BOLLE, in a communication to the Botanical Society of Berlin on the species and varieties of the PLANE TREE in cultivation, states that the American Platanus occidentalis appears to be perfectly hardy in Germany. He also mentions that seed from the variety acerifolia of P. orientalis often produces plants showing a reversion to the typical form. And according to the same authority BOURGEAU found considerable forests of P. acerifolia in Lycia, and dried specimens exist from Syria.

—— Professor TYNDALL has been recently giving the results of some new experiments of his, which lead him to affirm, in opposition to the opinions of those who believe in SPONTANEOUS GENERATION, "that as far as inquiry has hitherto penetrated life has never been proved to appear independently of antecedent life." Another conclusion at which this eminent investigator arrives is that no amount of fetid gas has the power of producing epidemic disease so long as the organisms which constitute the true contagion do not gain access to the infusions. As this matter, difficult and obscure as it is, is one of great importance to gardeners as to physicians, we shall hereafter make some further comments on the matter.

—— M. KICKX, Professor at the School of Horticulture attached to the University of Ghent, has been created Chevalier of the Order of Leopold. M. VAN HOUTTE has received the decoration of Knight of the Order of St. Anne of Russia, and M. RODIGAS has been appointed Director of the Zoological Garden of Ghent. Such are the news we find in the *Revue de l'Horticulture Belge* for the present month.

—— At the inaugural meeting of the LANGSIDE HORTICULTURAL ASSOCIATION (Glasgow), on Tuesday last, T. GREENSHIELDS, Esq., in the chair, an address on the "Present Condition and Future Prospects of Horticulture" was delivered, to which we may probably allude in a future issue.

—— According to the *Monatsschrift*, PRINGLE'S ALPHA POTATO is one of the best croppers tried in the Berlin experimental garden. A certain M. DRESSLER is reported to have raised 25 kilogrammes—upwards of 53 lb.—from one tuber, by cutting it into as many pieces as it had eyes.

—— The cultivation of COFFEE IN THE ISLAND OF RÉUNION or Bourbon is rapidly dwindling away. We are told the infatuation for the Sugar-cane has led the planters to destroy the Coffee plantations, in order to replace them by the cane, upon which are founded hopes too soon destroyed. Some few planters have resisted this temptation, and now congratulate themselves upon it. The Coffee plant produces regular crops, and is not exposed, like the Sugar-cane, to a thousand contrary chances. Cyclones have, without doubt, upon these crops, as upon all the others, a detrimental effect; but the value of this fruit, whose average market price is £4 per cwt., can always compensate for any failure in the crop. Moreover, the expense of cultivation is far from being as great as that required for the Sugar-cane. The quantity produced does not exceed from 400 to 600 tons annually. Formerly it reached from 3000 to 4000 tons.

—— A writer in the *Weinzeitung* asserts that the Vine louse, PHYLLOXERA VASTATRIX, was known to the ancients, though from some cause, or causes, it never spread to a very dangerous extent. The writer calls attention to a passage in STRABO's description of Illyria, p. 316, which runs thus:—"POSIDONIUS also mentions the bituminous soil of the vineyards of Seleucia Pieria, which is dug as a remedy against the Vine louse. Saturated with oil it destroys the insect before it can creep up to the branches." It seems to us more probable that something else was intended.

—— According to reports from San Francisco the largest GRAPE VINE known in the whole world is growing at Montecito, near South Barbara. It is supposed to be little less than 100 years old, and the girth of the stem is 5½ feet. The foliage covers a surface of 10,000 square feet, and it has borne the fabulous quantity of 6 tons of fruit annually for some years past.

—— We have received the *Index Seminum Horti Monspeliensis*, or list of seeds offered in exchange by the Montpellier Botanic Garden, for 1876. It includes about 2000 species. We have also the *Delectus Seminum quæ Hortus Botanicus Imperalis Petropolitanus pro mutua commutatione offert.*" This list comprises upwards of 3500 species and varieties, including many very interesting things. It is inti-

mated on the Montpellier "index" that lists of *desiderata* must be sent in before the first day of March. Lists received after that date will be put aside.

—— The third part of the *Beitrage zur Biologie der Pflanzen* contains the following articles, the substance of some of which we shall probably give at greater length on another occasion: —History of the Development of some of the Rust Fungi, by Dr. J. Schroeter; Investigations on the Resistance to Evaporation offered by the Epidermal and Cuticular Structures, by Dr. L. Just; Trial of some Disinfecting Substances by observing their Effects on the Lower Organisms, by Dr. J. Schroeter; on One-sided Acceleration of the Flowering of some Catkin-like Inflorescences from the Effects of Light, by Dr. A. B. Frank; on the Function of the Bladders of Aldrovanda and Utricularia, with a plate, by Dr. F. Cohn; on the Development of the Genus Volvox, with a plate, by Dr. F. Cohn; Researches on Pythium Equiseti, with two plates, by Dr. R. Sadebeck; Researches on the Bacteria (second series), with two plates, by Dr. F. Cohn; Contributions to the Biology of the Bacteria, by Dr. E. Eidam.

——The first article in the *Gardener* for the present month touches on the climatal features of certain districts of India in relation to Orchid growing, and the writer very wisely insists on the necessity of endeavouring not so much to imitate natural conditions, in which we must of necessity fail to a great extent, as to adapt our practice to the means at our disposal in this country—a truth we have frequently urged on the attention of cultivators. Good articles on Rose forcing, Amaryllis culture, and other practical subjects, follow, together with notes on Asters, ornamental shrubs, and many others. From some meteorological data given, we learn that the rainfall of Drumlanrig last year amounted to 56.2 inches.

—— The *Gartenflora* for December, 1875, comprises coloured illustrations of Alonsoa acutifolia, Eupatorium Kiralowii—a curious hardy or half-hardy perennial, with spotted stems, linear-serrated, sessile leaves, and tufts of whitish flowers in panicled heads; Beschornera tubiflora, a Mexican Bromeliad, is an old inhabitant of our stoves. The editor, Dr. REGEL, contributes an article on insectivorous plants, and is clearly not disposed to pin faith on the statements of English experimenters on this point.

Home Correspondence.

Saxifraga Burseriana.—This charming Saxifrage, the earliest of the white-flowered species, is now in bloom in Messrs. Backhouse & Son's nurseries, at York, where it is grown both on the rockwork and in an open border in a low situation. A plant in the border opened its first flower on the 28th ult. and has now several flowers fully expanded. They are of large size, and of a fine pure white colour, and are produced in great abundance—a single flower, on a scarlet foot-stalk, springing from the centre of each of the numerous rosette-like clusters of glaucous subulate leaves, which form the compact tufted foliage of the plant. For two or three days before bursting into bloom the scarlet flower-buds (about the size and shape of large Peas), thickly dotted amongst the tiny leaves, present a very striking and pretty appearance. The habit of this Saxifrage is particularly neat and distinct, and when in full flower it is one of the most beautiful plants of the genus. *Ebor.*

Tailless Dogs.—I am a Warwickshire man, and have seen the kind of dog Mr. H. Russell refers to; but they are not tailless, as they have a stump about 2 or 3 inches long, and are spoken of as "bob-tailed." It is a common practice to cut lambs' tails, yet I have never seen or heard of a lamb being born without a tail, though perhaps it is possible. I should think it a rare occurrence for a dog to be pupped without a tail, especially as a result of the parents having their tails cut off. If "bob-tailed" is implied, then it is nothing unusual, as, for instance, the Manx cats and pigs are often seen with but short tails or, rather, stumps of tails. *C. F.* [*Rem acu tetigisti.* EDS.]

Camellias Dropping their Buds.—As no one seems to have answered the inquiry on this head in your number of January 22, it may be of use to your correspondent if I say what my own case is. I grow only some two or three dozen, but as they are now in full bloom in my small house, and I have hardly lost a bud, I may perhaps help your correspondent. My practice is not to pot annually—I think every two or three years is sufficient. I do not turn my plants out-of-doors at all; that may answer when proper care is given to them, but they are likely not to be watered regularly, or else to be drenched by the heavy autumnal rains, and so they are placed all the summer under a Vine in my small house, and transferred in October to the greenhouse. Then, when the buds begin to swell in December, I apply from that on to the blooming time two or three doses of Standen's manure, varying in quantity, according to the size of the pots, from a teaspoonful to a tablespoonful, but I am sure the summer treatment is the great point, and when I have (as last year) turned out every plant I have come to grief. *D., Deal.*

Special Prizes.—Special prizes for special subjects at flower shows are very commendable things when the prizes are appropriate and the subjects for competition are selected with some regard to their usefulness. Too often, however, the subject for reward consists of rubbish offered under the guise of novelties; so that the whole thing drifts into a mere advertisement. Nurserymen and seedsmen have hitherto led the way in this matter, but I see from a schedule of the Southampton Horticultural Society, before me, that the brewers are now going in for the good thing, one company offering as a 1st prize for nine varieties of Potatos a kilderkin of Vienna prize medal ale! Is this a suitable prize for competition at a flower show? What are managers of exhibitions about to allow such incongruous subjects to defile their programmes? *Anti-Humbug.*

The Weather in Yorkshire.—To-day, January 31, has been quite a summer's day, the thermometer in the shade registering 55° nearly all day; it has been the means of bringing out a quantity of yellow Crocuses at this place, which I think is rather unusual for the time of the year; in fact, should this forcing weather continue for a fortnight longer, our beds will be in full bloom. I may add that our garden is exposed to the north, south, and east winds; in fact, it gets the full benefit of the rising sun, facing full east. *Jos. C. Nicholson, Halifax.*

Veitch's Autumn Giant Cauliflower. — With me this season this Cauliflower has been all that I could desire. I usually make three sowings, and the first one was made in the second week in April. From that sowing we began to cut fine solid heads the first week in September (much earlier than usual); the second sowing was made in the third week in April, and the last one in the second week in May. From the last two sowings we have been cutting from three to four dozen weekly up to within the last ten days, it being so thoroughly protected by the foliage, having withstood the late severe weather. It has now proved itself to be a really valuable variety, which may be had in use by successional transplanting from four to five months in the year. *E. Gilman, Wootton.*

Open-air Ice-Stacks.—The idea of forming an ice-stack out-of-doors no doubt is, or ought to be, old and simple, though different methods are adopted, as your several correspondents explain. The best and simplest way that has ever come under my notice was performed at the seat of the Right Hon. the Earl of Roden, Tollymore Park. We excavated a round hole or pit 3 or 4 feet deep, throwing the contents on the surface; a few fagots were put in the bottom and covered with straw, and there was a drain from the pit. The ice kept much better there than in the ice-house; the pit has been opened at least twice a-week for supplies, and I have seen more than a cartload thrown out when it was required to be filled in the following season. There is straw put around the sides, and of course the ice carried up as a stack, first covered with straw, then 6 inches of soil, and afterwards neatly thatched. I have kept ice till August in an open shed covered with sawdust, which I believe to be the best thing to use. *A. D., Courtlands.*

Plant Names: How to Pronounce Them.—As one who has often felt much perplexity on this subject, I should like to express the pleasure I experienced in reading the article under this title in your valuable paper of the 29th inst. Hundreds of your readers, like myself, have felt how difficult it is to arrive at the true pronunciation of many botanical terms in constant use—to attain, in fact, "the higher platform of aural civilisation, the region of the invisible and the tangible, that one of which the protective vestal virgins are music and refined speech," and to which, it is said, the pronunciation of Greek and Latin names belongs. My first impression was, what an enviable position the writer of that article occupies on this high platform in company with the "vestal virgins," knowing to a dead certainty how to pronounce all the long and difficult names that come before him to the perfect satisfaction of these two protective beauties! My second impression was, surely there must be some correct and universally acknowledged method of pronouncing the difficult words in question! After a little reflection, however, it occurred to me that pronouncing these names is not such plain sailing as may be inferred, for even the writer of that article differs in pronouncing Jasione from many who are not altogether ignorant of the language from which the word is derived. I then took down my latest editions of Babington's *Manual* and Hooker's *Student's Flora* from the shelf—the one emanating from Cambridge, the other from Kew—and glanced at a few of the words that have given me trouble, but the beautiful "vestal virgins" could not have exercised their protective influence at either of these places so as to secure uniformity in the above-named books, or perhaps these virgins are like botanists, not quite agreed on the subject. I cull a few examples, marking the respective authors by the initial letter of his name:—H., Ranunculus auri'comus; B., R. auric'omus. H., Corydalis clavic'ulata; B., C. clavicula'ta. H., Sisymbrium Irio; B., S. I'rio. H., Senebiera corono'pus; B., S. coro'nopus. H., Radi'ola; B., Radio'la. H., Ornitho'pus; B., Orni'thopus. It would be easy to extend this list but your space forbids. At one of the Hereford Fungus forays (I think in 1874) a clergyman was out with the Woolhope Club collecting all the fungi new to him, and asking their names from those who were considered authorities in the matter, and he became so bewildered by the divers modes of pronunciation of the generic and specific names that he begged at the evening meeting, in a most imploring manner, that the authorities would agree amongst themselves on the proper pronunciation, and not dishearten students like himself by such a diversity. "I take a plant to one," said he, "and am told it is an Ag'aric; to another, and he calls it an Aga'ric. I remove a curious fragile plant from a dung-heap, and am told by one it is a Cop'rinus, by another a Copri'nus. I then collect from a stump some leathery looking fungus which one calls a Pol'yporus, while another assures me it is a Polyp'orus. Do tell me which is the correct way of pronouncing these names!" I am sorry to say the only comfort this embarrassed student got was being laughed at for his pardonable impatience. If there be a botanist in Great Britain who can set the Woolhopians right on these and other doubtfully pronounced words, let him by all means communicate with the secretary about attending the next foray, for I feel quite sure Dr. Bull will give him a kindly and hearty welcome, and he will find at least two willing learners to sit at his feet, namely, the puzzled clergyman, and your obedient servant, *W. P.*

Dracæna australis.—We have a very handsome specimen of this plant on the lawn. It has twelve stems very picturesquely grouped, and, being tolerably hardy, it might be used more freely in shrubberies than is at present done. It bloomed abundantly this summer, and even resists sea breezes fairly. *Thomas C. Bréhaut.*

Horticultural Spelling Bee. — In a copy of the *Evening Echo* before me there is a paragraph descriptive of Mr. John Wills' floral decorations on the opening of the Royal Aquarium, in which the readers are treated to such words as "croteus," "dracaenas," "aranearia excelsæ," "Frices Elastica," "and many others that are among the choicest spoil won by collectors from English gardens." Would not a Horticultural or Botanical Spelling Bee do much good among reporters? *R.*

Limekiln Heating.—In reply to "Grape Grower" (p. 147), I beg to say that I have had a limekiln in use here about nine months, and I find it to answer right well in every respect. If "Grape Grower" means business I would recommend him to come here and see for himself. If he comes he should stay not less than two days and two nights (if he can stay a week all the better), and work the kiln himself under my instructions. It will take him about two hours in twenty-four. If he comes I feel certain that he will not go away disappointed with the system, and if he is I will guarantee to pay his expenses. I trust that he is not one of those unfortunates that are subject to water on the brain instead of limekiln; I have limekiln on the brain, and it is the best thing that I ever had on it, as regards heating. As regards the kiln at Hatfield being discontinued I should think not, as it was doing its work so well when I saw it. If anything was wrong it had too much work to do. It has been stated that Mr. Bennett said more in favour of limekiln heating than was fair, but from my experience with the system I believe that he has not said one word too much; and as regards him not adopting it for himself, I think he gave quite sufficient reason for not doing so. *Benjamin Coombe, The Gardens, Wiston Park, Steyning, Sussex.*

Heating: Limestone as Fuel.—It is refreshing to read so clear and sensible an article on the subject of heating as the one by Mr. Kinnear. He has ex-

plained sufficiently clearly I hope for every one to understand, what every one who knows anything about the principles of the production of heat knows well enough—that the amount of heat given out by burning a certain quantity of any kind of fuel is a known limited quantity, and that no arrangement of stoves, or water-pipes, or limekilns can possibly cause the heat given out to exceed that limit. But most people do not perceive this without having it clearly explained to them, as Mr. Kinnear has done. I have often had a difficulty in persuading people that such things as Mr. Honey's portable vaporising stove, and Messrs. Heap & Wheatley's portable hot-water circulating boiler, which are advertised in your columns, cannot possibly give out more heat than the gaslight or lamp which heats them would do without the stove or hot-water apparatus. What all these contrivances do is to retain the heat and distribute it more slowly and from a much larger surface, so that in place of heating a small quantity of air to a high degree, the heat given out heats a very large quantity of air to a less degree. In all cases of heating rooms or plant-houses this is just what is wanted, and therefore contrivances of this kind are useful, although they do not produce any more heat. The limekiln may do something in this way, but no doubt, as Mr. Kinnear says, the *rationale* of Mr. Cowan's system is really this: that lime-burning is a profitable trade where there is a sale for lime, and that any one who chooses to carry on that trade can pay for the heating of his hothouses out of the profits of it. *C. W. Strickland.*

—— Mr. Boyd Kinnear has been misinformed as to the quantity of coal required to burn limestone. He states that it requires one-third of its weight, whereas 1 ton of average coal will burn 5 tons of limestone. This error does not affect his calculation, which is substantially correct; yet I am afraid that a person unacquainted with chemistry would have difficulty in following it. But it does not require a knowledge of science or elaborate calculation to see the absurdity of regarding chalk in the light of fuel. Mr. Moule's letter, advocating the use of chalk as fuel, and stating the millions of pounds which would be saved by its adoption, appeared in the *Times* two or three years ago. It was answered at the time by several letters clearly proving Mr. Moule's opinions to be wrong. Mr. Cowan's system has also been before the public several years, yet I have not heard of a single gas company or large steam-user having adopted the use of chalk as fuel, even when it rose to the famine prices of the last few years. If a man knows of a system which will give heat free of cost, or at much less cost than is possible now, I ask your readers, why should he trouble to buy a vineyard to try the system, and attempt to spread the system by the aid of advertisements? He has only to go to some of the large coal consumers (and there are many manufacturers who use 50 tons per day), and show them how to do it, and his fortune would be made at once. If it once became known that a manufacturer was able to obtain his steam or heat at half its present cost by Mr. Cowan's system it would be adopted by every manufacturer in twelve months. I would remind "A Grape Grower" that the cheapest mode of producing steam is also the cheapest method of heating a vinery, and would recommend him to make careful inquiries to ascertain the most economical boiler in the market, for I have no doubt that he will find that the best modern boiler will use only half the coal required formerly. *S. E.*

—— I have neither time nor inclination to reply to your correspondent's criticisms on my letter of January 1 on "Chalk as Fuel." It concerns me little whether your readers shall be influenced by his science rather than by my facts. Those facts he has ignored, while my admission he has misrepresented. Let your readers go on to the discovery of those practical improvements in heating houses, which in my former letter I said are yet to be developed. Amongst these I would suggest, though I shall not attempt to prove it, that out of the hydrocarbonic system of warming churches and schools there may be formed a plan, according to which, while the heat shall be more durable and constant and more healthy, there shall be, even without the use of chalk or limestone, a saving of from 30 to 50 or 60 per cent. in fuel. If any one should wish to know more about this, he will be pleased to address his enquiries, not to me (for I cannot find time to reply to them), but to Messrs. Girdlestone, C.E., 5A, Garrick Street, Covent Garden, W.C. *Henry Moule.*

Mistleto.—In reference to Mistleto as an ornamental garden addition, it may perhaps interest some who are inclined to follow up the idea to suggest that it will grow well on the Rose. About seven years ago a healthy young plant made its appearance on the old gnarled stem of a Rose trained up one of the supports of an ironwork arcade in the gardens at Sedbury Park, near Chepstow. The Rose being of old standing, and only used as a stock for budding, I do not know the exact kind, but the Mistleto throve on it about a yard from the ground, and made a pretty though probably rather an injurious addition to the rough old stem. It was perhaps not quite as luxuriant in its growth as on the Apple, but of a particularly full rich green, and prospered till about two years ago, when I ceased to have personal knowledge of it, but understand it is now a handsome bush. In the many remarks on the growth of Mistleto, it would be interesting if some observer acquainted with the subject would give the age that this plant is supposed usually to attain. The only case I am acquainted with in which the Mistleto died apparently from causes within itself, and quite irrespective of anything manifest in the state of the bough it grew on, or surrounding circumstances, was that of the plant mentioned at p. 518 of your volume for 1850, as then growing "luxuriantly" on an Oak of about seventy years of age at Badamscourt, near Chepstow. This bunch being highly prized (and fortunately so highly placed as to be out of reach of marauders) continued uninjured and frequently figured in lists of authenticated specimens of Mistleto on Oak, till about five years ago, when I noticed it looked out of health, and had a shrivelled appearance as of want of sap, and the plant slowly died away till by the summer of 1873 nothing but black stumps remained. There was no change noticeable in the Oak before or after to account for the death of the parasite, but for some time before the Mistleto sickened I had not noticed that it continued to increase in size, and (being resident close by) I had every opportunity of watching it during the known part of its life. The difference in the internal state of an Oak bough at seventy or ninety years of age seems (conjecturally) unlikely to be sufficient to affect the health of the parasite, nor from the Oak bough continuing in vigour could the parasitic growth be so embedded by the yearly increase in the bough as to stop the passage of the sap. The Mistleto grew in enormous quantities in the neighbourhood, but though occasionally seeing sickly or half-dead plants, this is the only case in which the steady failing was noticeable from the "luxuriant" condition in which it was first observed, and connected with the rarity of the occurrence of the plant on the Oak may be of some interest to those acquainted with the habits of the plant. *O.*

Willows.—The Willow breaks in Lawson's nursery, Edinburgh, are at present very attractive. Those who admire a shot bed in the garden might have by Willows an effective rainbow appearance in their covers. In the nursery the Willows are arranged very precisely—red, orange, yellow, green, purple, violet. Blue is all that is a wanting to complete the prismatic colours. In fact when it first struck us, the light being peculiar, we looked around to make sure that there was not the other end of a rainbow visible. Passing up and down the high road, that Willow ground is quite a pleasure; as are the Poplars in the next break during the summer. A glance showed one where each sort ended, by the different twitter and dancing of the foliage, as well as by the white underside of the Abele leaves. No day was calm enough for none to be in motion. I often wondered if any of the scores who daily go along the Granton Road enjoyed these young trees as we did, or the boundary lines of Balsam Poplars in spring, so deliciously aromatic they were. To live near a public park may be a very fine thing, but give me tree nurseries where the stock is constantly changing, and being young is of brightest colour and sweetest smell, and electric in the twittering and tinkling of leaves. *F. J. Hope, Wardie Lodge, January*, 1876.

Rollisson's Unique Pelargonium.—This is very apt to sport as described p. 84. About twenty-five years ago the Lilac sport went under the name of "Glorianum," or "Lilac Unique." *F. J. H.*

Black Holly Berries.—Some weeks ago, a few days before Christmas, I noticed that a somewhat singular-looking Holly tree in this neighbourhood had a number of perfectly black berries on it. As the tree is enveloped in Ivy, I, at the first glance, thought that the black fruit I saw must be the berries of the latter plant, but I recollected that it was too early by some months for Ivy berries to have changed their hue, and a closer inspection showed me that the berries grew on the stems of the Holly. There were not only clusters of black and clusters of scarlet berries on the same spray, but actually clusters formed of black and coloured berries, all the same shape, and all presenting the same smooth, glossy appearance. I was puzzled, and mentioned the subject in my communication of the next week to *Land and Water*. A gentleman contributor advised me to get some of the clusters and send them to the Horticultural Society, but a deep fall of snow prevented my obtaining any in time, and when I was able to procure some, about ten days ago, I found the black berries had began to shrivel; they had a shrunken look, but the scarlet were full and bright as ever. A gardener in the village tells me that the berries are frost-bitten, and the correspondent of *Land and Water* before alluded to advises me to write and describe the particulars to you. Are Holly berries ever discoloured by frost? and, if so, is frost likely to have affected them in such a partial way? or can the fact of Ivy having so entirely enveloped the Holly tree account for the singular appearance of the berries? *Helen E. Watney, Berry Grove, Liss, near Petersfield, Hants, Jan.* 29.

Herbaceous and Alpine Plants. — Having occasionally seen in your pages many excellent instructions for the culture of the above, I have dared to ask you to bear with me while I tell you how I do with mine. I must premise by stating that on two sides of my house is a border 5 feet wide, which I try to keep tidy all the year round. Along these borders are alternate diamond and oval figures, severally edged with evergreen alpine plants, as Sea Pink, Campanula nitida, Draba aizoides, and small-leaved Saxifrages and other suitable plants. In these figures I have Snowdrops, Aconites, Crocus, &c., to be succeeded by-and-by with Geraniums, Calceolarias, &c., during summer; by this arrangement I have a gay border all summer, and when the frosts of autumn have caused the removal of the Geraniums, &c., the edgings of the alternate figures give a pleasing look to the borders all winter. In another border only 2 feet wide, devoted to dwarf-growing plants, I have a series of small diamonds and ovals in which are planted my best things, as double blue Hepatica angulosa, double Violet, Primrose, &c., all severally edged with little alpines, as Veronica repens, Draba aizoides, Antennarias, &c. This arrangement forms many pretty combinations, and the little evergreen edgings guard the valuable plants when under ground from the spade of the gardener. Another advantage is being enabled to give the requisite soil to some plants necessary to their good growth; as, for instance, in one little diamond, 2 feet by 1½, filled with a few spadefuls of peat soil and planted with Philesia buxifolia, Andromeda fastigiata, Menziesia empetrioides, and edged with two dozen or so small flowering plants of Rhododendron Chamæcistus, about 2 to 3 inches high. This figure, when the plants are in flower, is a gem in its way. I have another border, not figured like the above, devoted to annuals but edged in its entire length (70 yards) with double white, yellow, and lilac Primroses. Primula japonica I also have an edging of, but it is coarse. Along some walks I use as edgings Erica herbacea, Vinca minor, Silver-grass, and Viola cornuta perfecta, and other plants, so that in this way a pleasing variety meets the eye. For small figures, such plants as Draba aizoides, Veronica repens, Sedums of sorts, Saxifraga Bucklandi, oppositifolia, and other small-leaved sorts are most suitable; for large figures such plants as Sea Pink, Gentianella, Lychnis dioica, Veronica candida, &c., are eligible. Every one of course cannot follow my plan with the plants named, but if they like it they can begin with Sea Pink, Dalsies, and London Pride, till they gather stock of better things. *Joshua Oldman.*

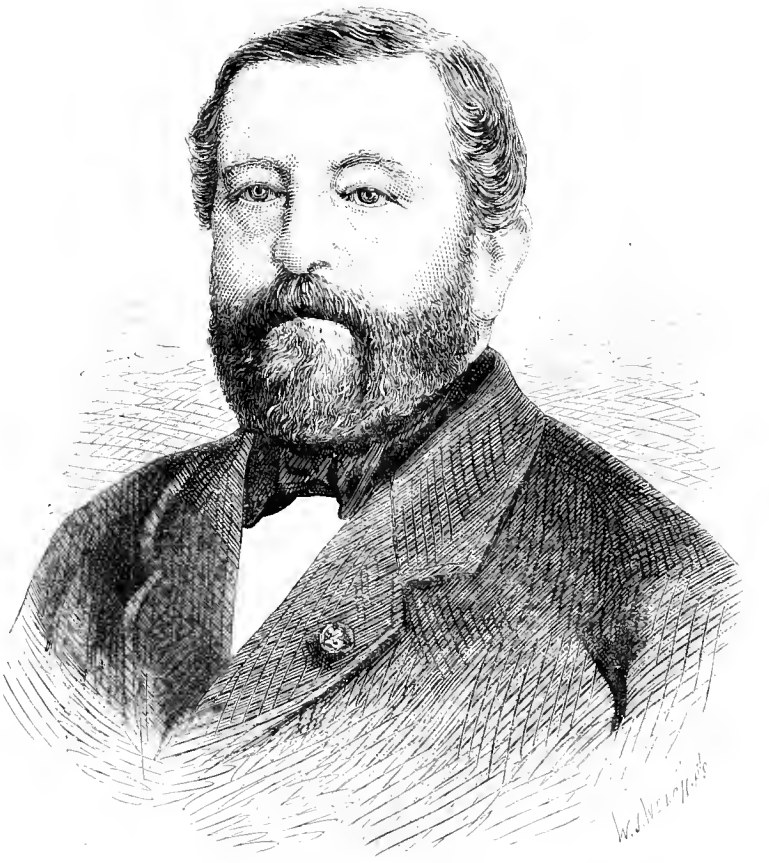
"Thrum."—I am glad to see the derivation of the word "thrum" in the *Gardeners' Chronicle* of the 22d inst. In the dictionary it is defined as "the ends of a weaver's thread." Afloat, we apply it to the short pieces of hemp inserted in a mat, corresponding to the pile of a Turkey carpet, and a thrummed sail is prepared in the same way to stop a leak. The fagged-out appearance of a thrum is not unlike the thrum-eye of a Polyanthus. *H. K.*

Reproduction of the Mushroom Tribe, and the Alternation or Change of Sexes.—Not having time when they appeared to read Mr. Worthington Smith's articles on the reproduction of Coprinus radiatus (*Gardeners' Chronicle*, new series, vol. iv., pp. 487 and 519), I put them aside for perusal at leisure. On reading them through, I find one or two remarks (p. 521) on the sex of seeds or spores which I do not quite understand. The writer says:—"If sex is once allowed in seeds and spores, then we must be prepared to allow sex in pollen and spermatozoids. A spore or ovule must be considered female, whilst unfecundated or still in the ovary, but when once fertilised it combines both sexes, and cannot be other than hermaphrodite. . . . In diœcious plants the seeds are capable of producing either sex, are not themselves male or female, and even the great fleshy root-stock of Bryonia dioica will be male in one place, and if removed to a different position, be female." Now, I have hitherto understood that hermaphroditism was the capability of performing the functions of both sexes, or the possession of both classes of organs, and not simply the property of bearing both sexes, and therefore I cannot see why ovules should be regarded as female before fertilisation. Being a vital germ, which only by impregnation can develope into a male, a female, or an hermaphrodite individual, according to the nature of its species, the ovule itself would seem to possess no attribute of sexuality, or at least of no one sex alone. The individual or organ bearing the ovule must, of course, be either female or hemaphrodite. I am ignorant of what may be known respecting the

laws (and doubtless such exist) which govern the reproduction of the sexes in plants and animals, though Mr. Smith says it is quite unreasonable, in his opinion, to imagine seeds or spores (unimpregnated) to be of different sexes. I raise this question here because I do not feel sure whether he really intended his remarks to apply to dicecious plants, and that unfertilised ovules of dicecious plants should be regarded as female, whether they grow into male or female individuals. But from his remarks on Bryonia one must come to that conclusion. I believe there are well authenticated instances of some Palms, Chamærops for example, producing only male flowers for a number of years, and then a season has arrived when the same individuals have borne none but female flowers. I should like to know whether the statement that the same root-stock of Bryonia will produce male and female flowers under different conditions, is founded upon unimpeachable observation. I have never before seen any record of the circumstance. I know from several years' observation that the same plants have retained their sexuality, having collected the flowers of both sexes in quantity, year after year, from the same individuals, the male and female plants being distinct from each other. In the Hop gardens it is the practice to plant only a certain proportion (a very small one) of males, and it frequently happens that at picking time a number of males are marked for grubbing, because there is an undue proportion of them, or more than is absolutely necessary for fertilisation. But I do not remember having heard that females had changed into males. [See *Gardeners' Chronicle*, 1852, p. 597. Eds.] It would certainly be interesting to have more definite information on this point. *W. B. H.*

The True Service Tree.—Having been for some time in search of plants of the true Service Tree (Pyrus domestica), and having received from nurseries the wild Service Tree, the White Beam Tree, the bastard Mountain Ash, and even the Water Elder in answer to my orders, I shall be much obliged to you if you will kindly tell me what plant I am likely to obtain if I send an order for "Area Theophrasta" mentioned in an announcement in your advertising columns, of which I send you an extract. I cannot find Area as a genus in Lindley's *Vegetable Kingdom*, and "Theophrasta," used here as a specific name, I find mentioned as a genus belonging to the order Myrsinaceæ in the same work. I should be glad to procure the Service Tree, and would order it under any name that it suited the fancy of the nurseryman to give it, but if he has the true Service Tree (Pyrus domestica) why does he call it "Area Theophrasta?" I observe the Society for Promoting Christian Knowledge in a recent publication, entitled *Beauty in Common Things*, gives a representation of what they call Service Tree berries, which they surely are not. *R. E., Jan.* 29. [We do not know what Area Theophrasta is. Eds.]

Veronica Andersoni.—In a garden at Brighton with a south aspect I have some shrubs of this Veronica, planted as cuttings five years ago, and which have not been disturbed since. These are now about 6 feet in height, and are covered with bloom from July usually till January. Last December, however, they were much cut about by the severe frost, and though they rallied, and I was able to gather some blooms in January, the return of frost has destroyed both foliage and flowers for this season. They do not, as far as I am aware, stand the winters in the English counties north of London, being little more than half hardy. The climate of Sutherland, especially in the neighbourhood of Dunrobin, is so favourable for many tender plants, as Fuchsia, Escallonia, and the like, that the Veronica Andersoni would have a better chance there than in many places in England less favoured by geographical position, and its unrivalled beauty gives it a large claim for encouragement. *W. E. Heathfield, Arthur's, St. James' Street, S.W., Jan.* 29.



LE COMTE DE KERCHOVE DE DENTERGHEM.

COMTE DE KERCHOVE.

Among the more eminent patrons of horticulture Charles Comte de Kerchove, of Denterghem, occupies no second rank. We are glad, then, of the present opportunity of laying before our readers the portrait of a gentleman to whom horticulture is under such deep obligations. Charles de Kerchove, a member of one of the oldest families in Flanders, was born at Ghent, in 1819. He studied civil engineering, and took high honours at the School of Engineering of the city of his birth. On leaving this he speedily entered on a political career. Selected as "Conseiller Provincial" for the canton of Ghent in 1851, he filled this office until 1864, when he was elected member of the Chamber of Representatives for Ghent, a position to which he has several times been re-elected. In 1857 he was elected by the electors of the city as "Conseiller Communal," and the late King Leopold appointed him Burgomaster of the city. It was in this capacity that he presided over the splendid receptions given to the English Volunteers in 1872. On the accession of the present King the Burgomaster, following the old ceremonial custom in the Flemish towns, entertained his Majesty at a grand banquet.

During the terrible outbreak of cholera, and during the disastrous floods, which occasioned so much distress in the city, as well as during the riots consequent on the strike of workmen in Ghent in 1863, M. de Kerchove acted with energy, firmness, and discretion. By his prudent counsels, and the influence he exerted over the workmen, the strike was terminated without bloodshed.

Recently, on an occasion of a similar character, the Burgomaster succeeded in a few hours in terminating a strike among the engineers, and had the satisfaction to receive, at the same time, the thanks both of the employers and of the artisans. In recognition of his efforts during the cholera epidemic of 1866 M. de Kerchove received a magnificent testimonial, signed by more than 20,000 of his fellow citizens.

In 1848 M. de Kerchove's official connection with horticulture began. In that year he became a member of the Royal Society of Agriculture and Botany of Ghent. He soon became a successful exhibitor at the various floral contests. In 1859 he became Honorary President of the Society, and presided in this capacity over the great exhibitions of 1868 and 1873, which were reported in our columns at the time. He manifested on these occasions that cordial good feeling and splendid hospitality which seems to be innate in our Belgian friends in all grades of society. On the death

of M. de Ghellinck de Walle, Count Kerchove was nominated President of the Society, and also of the Cercle d'Arboriculture. It was in this latter capacity that he received, in September last, the representatives of the pomology of France, England, Holland, and Germany, and once again the hospitality of the Burgomaster and his associates was put to the test, and excited the grateful wonder of its recipients at its lavishness, which was only equalled by the hearty good-will and kindly feeling with which it was associated.

The winter garden of Count Kerchove, one of the most important structures of its class in Europe, has been figured and described in our pages (1875, vol. iii.), and it is now one of the sights of Ghent, the Burgomaster with characteristic liberality according the freest possible access to it. The Count's special predilections are Palms, Tree Ferns, Orchids, Camellias, and Azaleas. Count Kerchove is one of the Vice-Presidents of the Federation of the Horticultural Societies of Belgium, a Commander of the Order of Leopold, and bears other titles of honour and distinction.

Law Notes.

SUPREME COURT OF JUDICATURE: EXCHEQUER DIVISION.—(*Sittings at Nisi Prius, before Baron Bramwell, and a Special Jury.*)—*Hood* v. *Willis.*—This was an action for an alleged assault. The defendant pleaded "Not Guilty" and a justification. The case had previously been partly heard, and adjourned until Jan. 25. (Mr. Powell, Q.C., and Mr. Hollings appeared for the plaintiff; Mr. Day, Q.C., and Mr. A. L. Smith for the defendant.)

The plaintiff is a gardener, and was formerly in the employ of the Archbishop of Canterbury, and the defendant is a shipowner, residing at Cardigan House, Richmond. In the early part of May last the plaintiff was in the service of the defendant as gardener, at a salary of 22*s.* per week, and having the use of a lodge. On the 3d of that month the plaintiff was sent by the defendant to the Richmond Railway Station to fetch some Orange trees, but, as they had not arrived, he was compelled to return without them. The next morning the defendant accused the plaintiff of not having been to the station, and of having been drunk, and gave him notice to quit. On being sent again to the station, the plaintiff found the Orange trees, and brought them back with him. In the afternoon of that day he went into the cow-house to milk a cow, and fell asleep, in which condition he was found by the defendant's brother James, who also accused him of being drunk, and scolded him. On the morning of May 5 the defendant again accused the plaintiff of being drunk, and shortly afterwards, while the plaintiff was at breakfast in his lodge, the defendant, accompanied by his brother James and a sailor in their employ, entered the lodge, and, according to the plaintiff's case, committed the assault complained of. The plaintiff's statement was that he was thrown upon his back and bumped severely on the floor until he became insensible, the blood gushing from his nose and mouth, and that while in that condition he was thrown with much violence down the lodge steps, and was kicked in the sides and back. In consequence of this attack he had sustained considerable internal injuries, he had vomited and passed much blood, and was still unable to work by reason of the weakness of his back. The defendant turned the plaintiff's wife and his goods into the road, and refused to pay the plaintiff his wages, the amount he had laid out on behalf of the defendant for seeds and roots, or to let him have his tools. The plaintiff now sought to recover compensation in damages for the unjustifiable treatment he had received at the defendant's hands. The defence was that the plaintiff, having been drunk for some days and exceedingly insolent, was ordered to leave on the morning in question, and, on his refusing to quit until he had been paid certain sums which he claimed, the defendant and his assistants had put him off the premises with as little violence as possible. Any slight injury which the plaintiff had received was due to the violence he had himself offered in resisting his removal.

His Lordship, in summing up, told the jury that, whether the plaintiff was the best or the most drunken gardener in the world, if his master ordered him to leave he was bound to go, and if he refused, his master was justified in removing him without unnecessary violence. The case of the plaintiff was an extraordinary one, and the conduct attributed to the defendant was such as scarcely any one but a garotter would be guilty of. It would be for the jury to say whether, looking at the evidence, the plaintiff's story could be believed.

The jury returned a verdict for the defendant. *Times.*

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, FEB. 2, 1876.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Jan.	In.	In.	°	°	°	°	°	°			In.
27	30 14	+ 0.38	53.1	37.3	15.8	45 0	+ 6.0	40 3	84	S.	0 00
28	30 14	+0.38	49.3	35 6	13.7	42.2	+ 4.0	39.6	90	S. : S.S.W. : S. : S.E.	0 00
29	30 16	+ 0.39	50 3	27.9	22.4	38 3	0.0	33.8	84	S.E. : S.S.E.	0.00
30	30 18	+0.42	48.9	31.4	17.5	41 4	+ 3.0	39.1	92	S.	0 02
31	30 20	+0.43	57.0	43.2	13.8	49.5	+11.0	44 3	83	S.S.W. : S.W.	0.00
Feb.											
1	29 96	+0.19	49.4	39.8	9 6	43.9	+ 5.3	37.2	76	S. : S.S.W. : W. : WNW	0.00
2	30.05	+ 0.29	50.2	38 5	11.7	43 7	+ 5.0	38.4	81		0.11
Mean	30.12	+ 0.35	51.2	36.2	15 0	43 4	+ 5 0	38 9	84	S.	sum 0.13

Jan. 27.—A very fine bright day.
— 28.—A fine day. Partially cloudy. Fog in morning.
— 29.—A fine clear day. Cold and foggy before 8 A.M. Dense fog prevailed in London till noon; very fine and clear here all day.
— 30.—A dull day. Slight rain fell at 2 P.M. and 7 P.M.
— 31.—A very fine bright day. Warm.
Feb. 1.—A fine, but dull and cloudy day.
— 2.—A fine day, light clouds. Rain fell before 8 A.M.

—— During the week ending Saturday, Jan. 29, in the neighbourhood of London the reading of the barometer at the level of the sea increased from 30.42 inches at the beginning of the week to 30.62 inches by the evening of the 24th, decreased to 30 36 inches by the morning of the 26th, increased to 30.40 inches by the evening of the same day, decreased to 30.30 inches by the afternoon of the 27th, increased to 30 36 inches by the morning of the 29th, and was 30 33 inches at the end of the week. The mean reading for the week was 30.41 inches, being 0.28 inch above that of the preceding week, and 0 46 inch above the average.

The highest temperatures of the air observed day by day varied from 53° on the 27th to 43° on the 23d. The mean weekly value was 49°. The lowest temperatures of the air observed night by night varied from 28° on the 29th to 37¼° on the 27th. The mean for the week was 32°. The mean daily range of temperature in the week was 17°, the greatest range in the day being 22¼° on the 24th, and the least 11½° on the 23d. The mean daily temperatures of the air, and the departures from their respective averages, were as follows:—23d, 37°.4, — 0°.1; 24th, 41°.7, + 4°; 25th, 37°.5, — 0°.3; 26th, 40°.5, + 2°.6; 27th, 45°, + 6°.9; 28th, 42°.2, + 4°; 29th, 38°.3. The mean temperature of the air for the week was 40°.4, being 2°.4 above the average of sixty years' observations.

The highest reading of a thermometer with blackened bulb in vacuo, placed in sun's rays, was 90° on the 27th. The lowest readings of a thermometer on grass with its bulb exposed to the sky was 23° on the 29th; the mean for the several low readings was 27¾°.

The direction of the wind was variable, and its strength very gentle. The weather during the week was very fine, and the sky partially cloudy. No rain fell during the week. Fog prevailed before 8 A.M. on the morning of Saturday, the 29th.

In England the highest temperature of the air observed by day was 57½° at Sheffield, at Leicester and Hull 47° was the highest temperature in the week, the mean from all stations was 51°. The lowest temperatures of the air observed by night in the week was 25° at Manchester, at Liverpool was 35°; the mean value from all stations was 29°. The range of temperature in the week was the greatest at Truro, 29°, and the least at Liverpool, 14¾°; the mean range from all stations was 22°.

The mean of the seven high day temperatures was the largest at Truro, 51¾°, the smallest at Nottingham, 42°, and the mean value from all stations was 47°. The mean of the seven low night temperatures was the smallest at Newcastle-on-Tyne, 31°, and the largest at Truro, 40¼°; the mean from all stations was 35½°. The mean daily range of temperature was the greatest at about London, 16¾°, and the least at Nottingham, 8½°; the mean daily range from all stations was 11¾°.

The mean temperature of the air for the week from all stations was 40¾°, being 1¾° lower than the value for the corresponding week in 1875. The highest was at Truro, 45¾°, and the lowest at Nottingham, 37½°.

The amounts of rain measured at Truro and Birmingham were both a quarter of an inch, at Bristol six hundredths of an inch fell, but at most other stations no rain fell; the average fall over the country was three-hundredths of an inch.

The weather during the week was generally very fine, but fog was prevalent.

In Scotland the highest temperatures of the air ranged from 56° at Edinburgh to 50° at Dundee and Paisley: the general average being 51½°. The lowest temperatures of the air varied between 27° at Greenock and 38½° at Glasgow, the mean value being 34°. The mean range of temperature in the week from all stations was 17½.

The mean temperature of the air for the week from all stations was 44½°, being 5½° higher than the value for the corresponding week in 1875. The highest was at Edinburgh, 46°, and the lowest at Greenock, 42½°.

The amount of rain measured at Greenock was 1¼ inch nearly; at Paisley nine-tenths of an inch fell; but at Aberdeen four-hundredths of an inch only was measured. The average fall over the country was half an inch.

At Dublin the highest temperature was 56½°, the lowest 40¾°, the range 15¾°, the mean 48¼°, and the rainfall 0 02 inch.

JAMES GLAISHER.

Enquiries.

He that questioneth much shall learn much.—BACON.

95. CHEAP KNIVES.—If your correspondent "O." (see p. 23) would do me the kindness of sending the address of the "cutler who sells cheap knives of sufficiently good quality at 1*s.* a-piece," I should be much obliged to him. They would be very useful elements in Christmas trees, cottage and garden prizes, &c., in my country district of Bucks. *E.*

Answers to Correspondents.

APPLES: LETTUCE: *W. W. H.* 1, Blenheim Orange, Woodstock Pippin, Northwick Pippin, and Kempster's Pippin, are synonymous names for the Blenheim Pippin. 2. The story about the Lettuce is all moonshine.

BOIS IMMORTEL: *G. E. B.* Erythrina umbrosa.

BUG ON CONIFERS: *J. S.* If a single tree you might try dilute methylated spirit, but if a plantation or nursery quarter, we should recommend grubbing and burning, if the plants are all affected like the specimen sent.

CUPRESSUS SEEDS: *W. B. J.* Most of the seeds sent are worthless, not having been fertilised. Sow the sound seeds in pans, and place them in a cold frame.

DRYING PLANTS: *A Young Gardener.* Take five or six sheets of old newspapers. On the top one lay your leaf, or whatever it is, carefully and neatly. Then place on the top five or six more dry sheets of paper, then more leaves, and so on. Place on the top a piece of board the size of the paper, or a little larger, and on the board some heavy weight—stones or bricks will do. Have ready some more dry paper, and, after one or two days, shift your leaves from the damp to the dry sheets, proceeding as before. If you use plenty of dry paper it is rare that more than two shifts are required; but this will vary according to the succulence of your specimen. You will soon learn by practice and experience better than we can tell you. This is the simplest and least costly plan, but there are many other plans which might be adopted. Newman's Botanical Drying Paper is the best, if you do not mind the cost; and a latticed board is better than a solid one, as it permits a current of air passing through the mass.

GARDEN NETTING (see p. 148): Mr. J. W. Haythorn, Clumber Street, Nottingham, provides all sorts of net for ladies' use, and answers any inquiry made with an enclosed stamp by return of post. *G. E. O.*

GREENHOUSE PLANTS: *Young Gardener.* Acacia Drummondi, A. dealbata, Aphelexis macrantha purpurea, A. macrantha rosea, Cassia corymbosa, Chorozema cordatum splendens, C. varium Chandleri, Clianthus magnificus, Correa Brilliant, C. cardinalis, Crowea elliptica, C. saligna latifolia, Daphne indica alba, D. indica rubra, Genista fragrans, Lasiandra floribunda, Luculia gratissima, Neriums, Mitraria coccinea, Pleroma elegans, Polygala Dalmaisiana, P. oppositifolia, Statice profusa, S. imbricata, Witsenia corymbosa, Epacris Eclipse, E. Vesuvius, E. Sunset, E. salmonia, E. miniata splendens, E. Lady Panmure, E. hyacinthiflora candidissima, and E. hyacinthiflora carminata. These are all plants that can be grown with a moderate amount of attention; some or other of them will be in flower the whole of the year, and when used amongst soft-wooded things give variety, and do away with the sameness that threatens

to make the plant-houses of the present day little more than receptacles for collections of Zonal Pelargoniums, with here and there a Fuchsia or a Lily stood amongst them.

HOYAS: *H. D. S.* We will endeavour to meet your wishes in a week or two.

LAWN WEEDS: *H. H.* The plant is Prunella vulgaris; its presence indicates poverty of soil. Have it carefully forked out, scatter fresh seed of some of the fine lawn grasses, and dress with a rich compost, containing muriate of ammonia.

LOMARIA GIBBA: *A Young Gardener.* The plant will do well in a cool house, but is not sufficiently hardy to stand frost.

NAMES OF FRUIT: *F. B.* The Pear is Glou Morçeau; the Apple most probably Rosemary Russet, but not quite certain.

NAMES OF PLANTS: *A Subscriber.* Fabiana imbricata. Tradescantia zebrina is frequently used as a bedding plant in subtropical gardens.—*H. M. M.* Sparmannia africana.—*C. B.* 1, Thaius maculata; 2, Cymbidium sinense.—*J. Lawrence.* A species of Milla, which we cannot name from a flower alone.—*Mrs. Rowland.* The seed-vessel of the common Honesty, Lunaria biennis, nat. order, Brassicaceæ.—*Rev.* Pieris argyræa.

NOTICE TO QUIT: *W. J. C.* If you have no agreement to the contrary, and hold the land on a yearly tenancy, whether you are a nurseryman or not, you can only claim six months' notice to quit, such notice being given so that your tenancy expires on the same quarter-day as that on which it commenced.

PELOTAS BERRIES: Can any of our correspondents tell us what these are?

TWIN MUSHROOM: *G. Breese.* Many thanks. It is a very curious specimen, and we have sent it on to Mr. Worthington Smith.

☞ FOREIGN SUBSCRIBERS sending Post Office Orders, and which are to be paid at the post-office, King Street, Covent Garden, London, are requested to be good enough to write to the Publisher, at the office of this paper, 41, Wellington Street, Covent Garden, at the same time, to inform him of the fact.

COMMUNICATIONS RECEIVED.—C. Ford.—H. & Sons.—A. L.—R. D.—E. S. H.—P. G.—J. R. J.—G. H.—J. W.—J. W. B.—W. S. A.—M. M.—E. M.—T. B.—J. H.—H. G. R (we will attend to all your requests).—R. S., Worcester (many thanks).—J. P.—P. G.—J. A.—P. H. G.

*** IMPORTANT NOTICE.—*The* AGRICULTURAL GAZETTE *is now* PUBLISHED *on* MONDAYS, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, February 3.

The market remains much the same as last week; the supply of all classes of goods being quite equal to the demand. *Jas. Webber, Wholesale Apple Market.*

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	6 0	18 0	Narcissus, per dozen	3 0	6 0
Azaleas, 12 sprays	1 0	3 0	Pelargoniums, 12 spr.	2 0	4 0
Camellias	4 0	12 0	— Zonal do.	1 6	3 0
Carnations, 12 blooms	2 0	4 0	Poinsettia, per doz.	4 0	12 0
Cineraria, per bunch	1 0	2 0	Primula, dbl., p. bun.	1 0	1 6
Cyclamen, 12 blooms	0 3	0 6	Rhododend., 12 buds.	4 0	12 0
Epiphyllum, p. doz.	1 0	3 0	Roman Hyacinths, 12 sprays	3 0	6 0
Eucharis, per doz.	6 0	18 0	Roses, indoor, p. doz.	3 0	12 0
Euphorbia, 12 spr	4 0	9 0	Spiræa, 12 sprays	2 0	4 0
Gardenia, per doz.	12 0	18 0	Stephanotis, 12 sprays	9 0	18 0
Heliotropes, 12 spr	0 6	1 0	Tuberoses, per doz.	4 0	9 0
Lily of Valley, 12 spr.	2 6	8 0	Violets, 12 bunches	2 6	4 0
Mignonette, 12 bun.	6 0	9 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per doz.	30 0	60 0	Hyacinths, per doz.	9 0	18 0
Begonias, per doz.	6 0	12 0	Hyacinths, Rom. do.	12 0	30 0
Bouvardias, do.	12 0	18 0	Lily of Valley, doz.	18 0	60 0
Cinerarias, per doz.	12 0	18 0	Mignonette, do.	6 0	9 0
Cyclamen, do.	12 0	24 0	Myrtles, do.	3 0	9 0
Cyperus, do.	6 0	12 0	Pelargoniums, scarlet, per doz.	6 0	9 0
Dracæna terminalis	30 0	60 0	Poinsettias, per doz.	15 0	24 0
— viridis, per doz.	18 0	24 0	Primula sinensis, do.	6 0	12 0
Epiphyllums, do.	18 0	42 0	Solanums, do.	6 0	24 0
Euphorbia jacquiniæflora, per doz.	9 0	18 0	Tulips, do.	8 0	12 0
Ficus elastica	2 6	15 0	Veronica, do.	4 0	12 0
Heaths, in var., doz.	12 0	30 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz	6 0	..	Mint, green, bunch	1 6	..
— Jerusalem, p. lb.	0 3	..	Mushrooms, per pott.	1 0	2 0
Asparagus (English), per bundle	3 0	10 0	Onions, young, bun.	0 4	0 6
Beans, French, p. 100	5 0	..	Parsley, per bunch	0 4	..
Beet, per doz.	1 0	2 0	Peas, green, per lb	1 6	..
Brussels Sprouts, lb.	0 4	..	Potatos (new), baskt.	1 0	..
Cabbages, per doz.	1 0	2 0	— new Jersey, p. lb.	2 6	..
Carrots, per bunch	0 6	..	— Sweet, per lb.	0 0	..
Cauliflowers, p. doz.	2 0	4 0	Radishes, per bunch.	0 3	0 4
Celery, per bundle	1 6	2 0	— Spanish, doz.	1 0	..
Cucumbers, each	2 0	3 6	— French	0 6	..
Endive, per doz.	1 0	2 0	Rhubarb, per bundle	0 6	1 0
— Batavian, p. doz.	2 0	3 0	Salsafy, per bundle	0 9	..
Herbs, per bunch	0 2	0 4	Seakale, per punnet	1 0	2 0
Horse Radish, p. bun.	3 0	5 0	Shallots, per lb.	0 3	..
Leeks, per bunch	0 2	0 4	Tomatos, per doz.	1 0	2 0
Lettuces, per score	2 0	..	Turnips, per bundle	0 4	..

Potatos—Rocks, £5; Regents, £7 to £8; Kidneys, £7 to £8 per ton.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1 0	2 6	Melons, each	2 0	4 0
Cobs and Filbts., lb.	0 6	0 9	Oranges, per 100	6 0	12 0
Grapes, per lb	2 0	6 0	Pears, per doz.	2 0	8 0
Lemons, per 100	6 0	10 0	Pine-apples, p. lb.	2 0	5 0

SEEDS.

LONDON: *Feb. 3.*—Great activity is now visible in the seed trade. For Red Clover seed in particular there is a strong demand, under the influence of which prices have advanced during the past week from 2*s.* to 3*s.* per cwt. The quantity of American Red on our market is still insignificant, and the supply of home-grown does not increase. In consequence of a demand from Germany values in France have risen £2 per ton. For Trefoil there is a good inquiry at full rates. Quotations this season, owing to the shortness of the crop, are higher than they have been for many years past. White Clover and Alsike are both held for more money; in fact, for every description of seed the tendency of currencies is upwards. More attention is now given to perennial grasses. Italian Ryegrass is 1*s.* per cwt. higher. In spring Tares a good trade has been doing: to realise profits some few holders of the earlier importations have conceded 1*s.* to 2*s.* per quarter from last week's figures. Advices from Konigsberg describe stocks as low, and sellers, in consequence, very firm. For the few samples of Scotch Gores which are offering buyers are easily found. Some slight improvement must be noted in the Mustard seed trade. Good black Rape seed is in short supply. Canary seed is cheaper, but Hemp keeps steady. Linseed is dull. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, E.C.*

CORN.

Trade at Mark Lane on Monday was flat. Millers seemed indisposed to purchase Wheat not in good condition, even at a marked reduction from last week. Barley of fine quality was easily sold, but damp and inferior parcels were neglected. Malt was dull and cheaper to sell. Sound old Oats were steady, but new were quiet and somewhat lower than on Monday se'nnight. Maize continued weak, 29*s.* being about the top price asked. Beans and Peas, in which sales were exceedingly difficult to close, favoured buyers. Flour had a downward tendency, no description showing any improvement.—On Wednesday the fresh supplies of produce were moderately large, but there was a distinct want of fine dry parcels, and trade in consequence was dull. Wheat was offered at somewhat less money; so also was Barley, while in Oats few transactions were reported at previous quotations. Maize showed no improvement, and to effect sales in Beans, Peas, or flour some reduction had to be submitted to.—Average prices of corn for the week ending Jan. 29:—Wheat, 44*s.* 2*d.*; Barley, 35*s.*; Oats, 25*s.* 4*d.* For the corresponding week last year:—Wheat, 43*s.*; Barley, 45*s.*; Oats, 22*s.*

CATTLE.

At the Metropolitan market on Monday there was not much difference as to numbers in the supply of beasts from last week, but the average quality was only middling. Prices were rather lower except for the choicest descriptions; a pretty good clearance was, however, effected. There were fewer sheep, yet trade was dull for all but choicest qualities. Good calves were scarce and very dear. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.* 4*d.*, and 5*s.* 8*d.* to 6*s.*; calves, 5*s.* 6*d.* to 7*s.* 4*d.*; sheep, 5*s.* 4*d.* to 6*s.*, and 6*s.* 4*d.* to 7*s.*; pigs, 4*s.* 6*d.* to 5*s.* 8*d.*—On Thursday the stock of beasts on offer was cleared off at Monday's rates. Sheep met an improved sale, English bringing rather better prices than on the previous day, and foreign advancing 2*d.* to 4*d.* per stone. Calves fully supported Monday's figures, and pigs were not in demand.

HAY.

There was a moderate supply of fodder at Whitechapel market, with a steady trade at last Saturday's prices, viz.:—Prime Clover, 100*s.* to 144*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 132*s.*; inferior, 55*s.* to 75*s.*; and straw, 35*s.* to 44*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 130*s.* to 140*s.*; inferior, 90*s.* to 110*s.*; superior Clover, 140*s.* to 150*s.*; inferior, 100*s.* to 115*s.*; and straw, 45*s.* to 50*s.* per load.

POTATOS.

At the Borough and Spitalfields markets, it is stated, the supplies have been in excess of the demand, but there was, nevertheless, a want of good descriptions, and prices showed some uncertainty. Kent Regents, 120*s.* to 140*s.* per ton; Essex ditto, 100*s.* to 115*s.*; rocks, 85*s.* to 100*s.*; flukes, 130*s.* to 160*s.*; Victorias, 120*s.* to 145*s.*; kidneys, 100*s.* to 125*s.*—The arrivals of foreign Potatos into London last week comprised 8481 bags from Antwerp, 1145 bags from Harlingen, 341 tons and 402 bags from Rouen, 236 bags from Ghent, 700 tons and 929 sacks from Dunkirk, and 290 bags and 100 sacks from Boulogne.

COALS.

There was no change in prices reported at Monday's market, but on Wednesday house coals gave way 1*s.* per ton. Quotations:—Bedside West Hartley, 17*s.* 9*d.*; West Hartley, 17*s.* 9*d.*; Walls Ends—Hetton, 21*s.* 6*d.*; Hetton Lyons, 18*s.* 9*d.*; Hawthorn, 18*s.* 9*d.*; Lambton, 21*s.*; Original Hartlepool, 21*s.* 6*d.*; South Hetton, 21*s.* 6*d.*; Hartlepool, 20*s.* 9*d.*; East Hartlepool, 21*s.* 3*d.*; Tees, 21*s.* 3*d.*

This Collection is specially suitable for a "Moderate-sized Garden," and contains:—

Peas, best sorts	20 *pts.*	Leek, best varieties	1 *pkt.*
Beans, do.	8 ,,	Lettuce, do.	3 ,,
French Beans, do.	3 ,,	Mustard, do.	1 *pt.*
Beet, Suttons' and other best sorts	2 ,,	Melon, do.	2 *pkt.*
Borecole, do.	3 ,,	Onion, do.	5 *oz.*
Brussels Sprouts, do.	1 *pkt.*	Parsley, do.	1 ,,
Broccoli, best sorts	5 *pkt.*	Parsnip, do.	3 ,,
Cabbage, do.	5 ,,	Radish, do.	7 ,,
Savoy, do.	2 ,,	Spinach, do.	1½ *pts.*
Carrot, do.	7 *oz.*	Salsify, do.	1 *pkt.*
Cauliflower, do.	2 *pkt.*	Scorzonera, do.	1 ,,
Celery, do.	2 ,,	Turnip, do.	6 *oz.*
Couve Tronchuda	1 ,,	Vegetable Marrow, do.	1 *pkt.*
Cress, best sorts, 8 *oz.* &	2 ,,	Sweet and Pot Herbs, best sorts	4 ,,
Cucumber, do.	3 ,,	Tomato, best sorts	1 ,,
Endive, do.	2 ,,	Rampion	1 ,,
Capsicum	1 ,,	Corn Salad	1 ,,
Orache	1 ,,		

All of the best and most productive kinds.

ALL WHO HAVE A GARDEN

AND WISH TO GROW

THE BEST VEGETABLES, THE BEST FLOWERS, THE BEST POTATOS,

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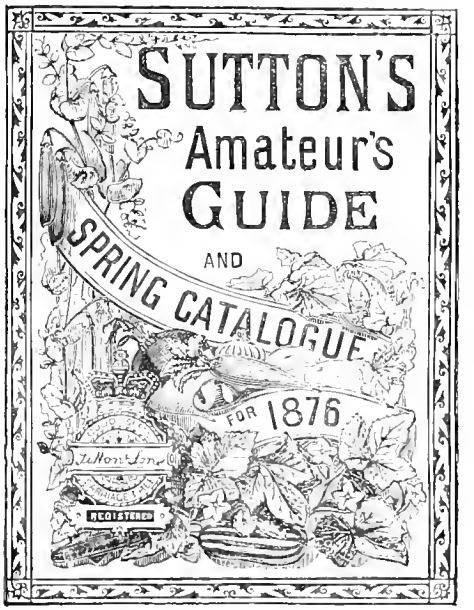

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Seeds for 1876.

	Per Packet.—s.	d.
BEANS, Williams' Early Prolific Dwarf French, in sealed half-pints	1	6
BRUSSELS SPROUTS, Welch's Giant, one of the finest in cultivation	1	0
CUCUMBER, Tender and True	2	6
" Osmaston Manor (new), one of the Finest Varieties, either for Summer or Winter use; 26 to 32 inches long, very prolific	2	6
MELON, Osmaston Manor Hybrid (new), a splendid Green-fleshed Variety, beautifully netted, globular in form, and of delicious flavour	2	6
ONION, Williams' Magnum Bonum, the heaviest cropping and longest keeping Onion in cultivation	1	6
PEA, Williams' Emperor of the Marrows per quart,	2	6

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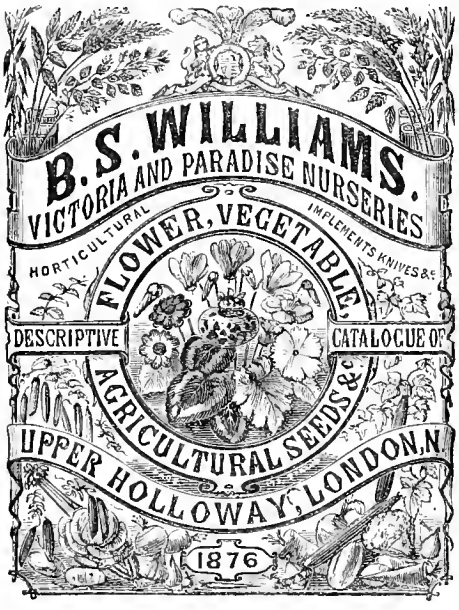

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	Per Packet.—s.	d.
BALSAM, Williams' Superb Strain 2s. 6d. and	1	6
BEGONIA FRŒBELII (new).—This new and distinct species will prove one of the finest scarlet bedding plants in cultivation	2	6
CYCLAMEN PERSICUM GIGANTEUM.—This is a great improvement on the old type, having very broad, beautifully-mottled coriaceous leaves; the flowers are thrown well above the foliage, each flower measuring from 2 to 2½ inches in length; pure white, with a fine bold violet-purple eye	5	0
CYCLAMEN PERSICUM, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
CELOSIA PYRAMIDALIS PLUMOSA	1	6
CALCEOLARIA, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
CINERARIA, Weatherill's Extra Choice Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
GLOXINIA, Finest Drooping Varieties	1	6
" Finest Erect Varieties	1	6
PRIMULA, Williams' Superb Strain, Red, White, or Mixed 5s., 3s. 6d., 2s. 6d., and	1	6
PYRETHRUM GOLDEN GEM	1	0
SOLANUM, Williams' Improved Hybrids	1	6
STOCK, Williams' Improved Giant Scarlet Brompton	1	6
WALLFLOWER, Harbinger, Autumn and Winter flowering	1	0

Packets of Flower Seeds, excepting heavy kinds, Free by Post.

FREE DELIVERY.—All Orders for Seeds, amounting to £1 and upwards, will be delivered, Free of Carriage, to any Railway Station in ENGLAND; and all Orders of £2 or more in value, to any Railway Station in SCOTLAND or WALES, and any Steam Port in IRELAND.

VICTORIA AND PARADISE NURSERIES,
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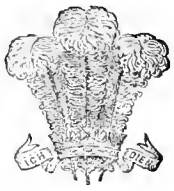
WORCESTER PEARMAIN APPLE.

Awarded a First-class Certificate by the Royal Horticultural Society, October 6, 1875.

Fruit 2¾ inches wide, and same in height, conical; skin smooth, brilliant red, with minute fawn-coloured dots; flesh very tender, crisp, juicy, and sweet, with a very pleasant flavour, perhaps the most valuable of all for market. The tree is as productive as Lord Suffield Apple, and one of the handsomest fruits in cultivation. Ripe end of August, and will keep till Christmas.



Maiden Trees, 10s. 6d. each; Pyramid or Trained Trees, 21s. each. Coloured Plates, 6d. each.

RED HAWTHORNDEN APPLE.—Dr. Hogg describes this as large, oblate, and angular; skin smooth, greenish yellow, with a red blush next the sun; flesh white, tender and juicy, with a sprightly and agreeable acidity. A very early and valuable culinary Apple; ripe August and September. Maiden trees, 7s. 6d. each; Pyramid or trained trees, 10s. 6d.

YORKSHIRE BEAUTY APPLE.—Dr. Hogg, in his *Manual*, says this fruit is 3½ inches wide and 3 inches high, roundish, flattened, and angular; skin bright yellow, with a bright red blush on the sunny side; flesh tender and juicy, with an agreeable acidity. A first-rate culinary Apple for August and September; the great size and excellent quality ought to commend it as a good orchard fruit for the market. Maiden trees, 5s. each; Pyramid or trained trees, 7s. 6d.

NEW GOLDEN LABURNUM.—Unquestionably the finest hardy golden-leaved tree known, of immense value for park and garden scenery; it will take a foremost position among pictorial and garden trees; the foliage is a brighter golden-yellow than the flower of the ordinary Laburnum. First-class Certificate awarded by the Royal Horticultural Society, August 4, 1875. Price 10s. 6d. each; Standard and extra strong trees, 21s. Coloured plates, 6d. each.

OTHERA JAPONICA.—A new and beautiful evergreen shrub. One of the most distinguished Japanese travellers says this is perhaps the prettiest evergreen they have in Japan; it grows about 20 feet high, has dark green leaves and a profusion of bright red fruit; it is very effective and perfectly hardy. Price 10s. 6d. each; extra strong, 21s.

TWELVE ACRES OF ROSES,

Standards and Dwarfs, all the popular sorts; 80,000 choicest Tea-scented and Noisette Roses, in pots. Extra strong Hybrid Perpetual Roses, in pots for immediate forcing.

Climbing Roses in great variety. *See Descriptive Price List.*

FIFTY ACRES OF FRUIT TREES.

Standard and Dwarf-trained PEACHES, NECTARINES, APRICOTS, PLUMS, CHERRIES, PEARS and APPLES, very fine trees for walls.

Standard, Pyramid, Dwarf, Bush, and Cordon APPLES, PEARS, PLUMS, and CHERRIES.

VINES, Planting Canes, 3s. 6d. to 5s. each; Extra Strong Fruiting Canes, 7s. 6d. to 10s. 6d. each.

All the above of superior quality, perfect in form, roots, and health, and true to name. See Descriptive Price List.

COLLECTION OF TWELVE STANDARD ORNAMENTAL TREES, THE MOST BEAUTIFUL FOR GROUPING, 24s., viz.:—Almond, Acer Negundo variegata, Double Scarlet Thorn, Elm elegantissima, Purple Beech, Silver Variegated Cornus, Silver-leaved Poplar, Scarlet Horse Chestnut, Scarlet Mountain Ash, Tulip Tree, Variegated Mahaleb, Weeping Silver Birch.

COLLECTION OF TWELVE OF THE MOST DISTINCT AND BEAUTIFUL HARDY CREEPERS and WALL SHRUBS for 15s., viz.:—Akebia quinata, Berberidopsis corallina, Bignonia grandiflora, Clematis Jackmanni, Ceanothus Veitchii, Cydonia japonica, Escallonia macrantha, Jasminum revolutum, Lonicera aureo-reticulata, Magnolia grandiflora, Passiflora Colvillii, Wistaria sinensis.

COLLECTION OF TWELVE MOST EFFECTIVE AND ORNAMENTAL IVIES, the most useful of all Evergreens for Walls, Trellises, &c., 12s.

DECIDUOUS FLOWERING SHRUBS in Fifty beautiful varieties, 30s. per 100.

BEAUTIFUL HERBACEOUS AND ALPINE FLOWERING PLANTS, give no trouble, and are permanent in adorning Garden Beds, Borders, and Rockeries; 30s. per 100 varieties.

JUNIPERUS CHINENSIS.—One of the hardiest and most ornamental Shrubs in cultivation, and especially valuable to the landscape gardener. In spring it is quite golden with its numerous flowers, which, when shaken with the wind, give off a cloud of yellow dust: and if the plant be kept closely pruned, the young growth becomes so luxuriant and leafy that it gives an entirely different but equally pleasing effect in its silvery tinge and rigid outline. When left to its own growth it forms a noble green pillar, highly suitable to stand in pairs by a garden walk. Eight to 9 feet, 10s. each; £4 4s. per dozen.

PICEA PINSAPO. — A very handsome, densely branched tree. The branches are very thickly placed in whorls and spread horizontally, thus giving a singularly beautiful appearance. It is one of the most distinct and desirable trees for ornamental planting, especially for a lawn. Its perfect symmetry of form is so striking that it should have a place in every collection. Eight to 10 feet, 25s. each; £12 per dozen.

ABIES DOUGLASII. — This, the most noble of Evergreen Firs, is of rapid growth, hardy, produces valuable Timber, close, heavy, and free from knots, of the colour of Yew wood. It is a native of California, where it grows upwards of 300 feet high, with a trunk 10 feet through. The flagstaff at Kew is of this tree, and was, when growing, 309 feet high. There is at Dropmore (Bucks) a specimen measuring at the present time 100 feet high, and 90 feet through the branches, with a trunk 9 feet in circumference at 4 feet above the base. It was raised from seed sown by Mr. Frost, the present gardener, in 1828, and is now a model of beauty. 12 to 15 feet, 12s. 6d. each, £5 per doz.

THE SILVER CEDAR of MOUNT ATLAS. —Now is the time to plant this eminently beautiful tree, unsurpassed for majestic grace and picturesque grandeur even by the Cedar of Lebanon, which it much resembles; and many consider it a variety, but its leaf is more silvery, it grows twice as fast, and its timber is very valuable. Noble trees, 10 to 12 feet, 25s. each, £12 per dozen.

AVENUE AND ORNAMENTAL TREES,

For planting singly or in groups, of all forms and sizes; with many other large Evergreens for single specimens or screens.

RICHARD SMITH,

NURSERYMAN and SEED MERCHANT, WORCESTER.

TO THE TRADE.

WM. WOOD & SON

HAVE TO OFFER A REMARKABLY FINE STOCK OF

DWARF-TRAINED APPLES, PEARS, PLUMS, CHERRIES, PEACHES, NECTARINES, and APRICOTS,

ALSO

FINE DWARF MAIDEN AND CUT BACK TREES OF THE ABOVE.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

GENUINE SEEDS.

JOHN & CHARLES LEE

(Seedsmen to the Queen),

Invite attention to their new and extensive

CATALOGUE OF SEEDS FOR 1876.

This Catalogue has been prepared with their usual care, and contains every Novelty—whether home-grown or foreign, with the most minute and useful descriptions of both

VEGETABLE AND FLOWER SEEDS.

The Prices of every article are the very lowest, considering the first-rate quality of the various stocks offered.

The long standing of the House of Lee (125 years) is a sure guarantee of the excellence of their Seeds and the soundness of their trading.

CATALOGUES MAY BE HAD, POST FREE, ON APPLICATION.

ROYAL VINEYARD NURSERY AND SEED ESTABLISHMENT, HAMMERSMITH, LONDON, W.

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NURSERY CATALOGUES FOR 1875-76.

WILL BE SENT POST FREE UPON APPLICATION.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),

EDINBURGH,

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54, BISHOPSGATE STREET WITHIN, LONDON, E.C.

BUSINESS ESTABLISHED, 1770.

SEEDS OF SUPERIOR QUALITY.

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ILLUSTRATED CATALOGUE OF SELECT VEGETABLE AND FLOWER SEEDS, &c.,

Is now ready, and will be forwarded, post free, on application.

Many sorts are home-grown, and all are selected with the utmost care from the most celebrated Stocks at home and abroad, in order to secure for their Customers the BEST QUALITY THAT CAN BE OBTAINED.

IMPORTANT: Observe the Christian Name,

WM. PAUL & SON,

PAUL'S NURSERIES AND SEED WAREHOUSE, WALTHAM CROSS,

LONDON, N.

GLOXINIA CRASSIFOLIA GRANDIFLORA.

Magnificent strain, quite distinct. The leaves, which are very broad and fleshy, recurve so as to almost cover the pot; the flowers are much larger than in the old sorts, and of very brilliant shades of colour, and fine form. By sowing now on a gentle hotbed they may be had in bloom in autumn, and seedling plants always yield much the finest Blooms. Erecta and horizontalis, separate or mixed.

Per packet, 1s. and 2s. 6d., stamps or Post-office Order.

Seed CATALOGUE, sent free by post.

JAMES TYNAN, 68, Great George Street, Liverpool.

HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,

KNAP HILL NURSERY, WOKING, SURREY.

NEW SEED CATALOGUE.

WOOD & INGRAM

Beg to announce that their new Descriptive Priced CATALOGUE of GARDEN and AGRICULTURAL SEEDS is now ready, and will be sent free on application. Comparison of prices with those of other Houses is respectfully invited.

SEED WAREHOUSE, HUNTINGDON.

FRANCIS & ARTHUR DICKSON & SONS.

106 Eastgate St. & The "Upton" Nurseries **CHESTER.**

Illustrated Catalogue of Vegetable & Flower Seeds,

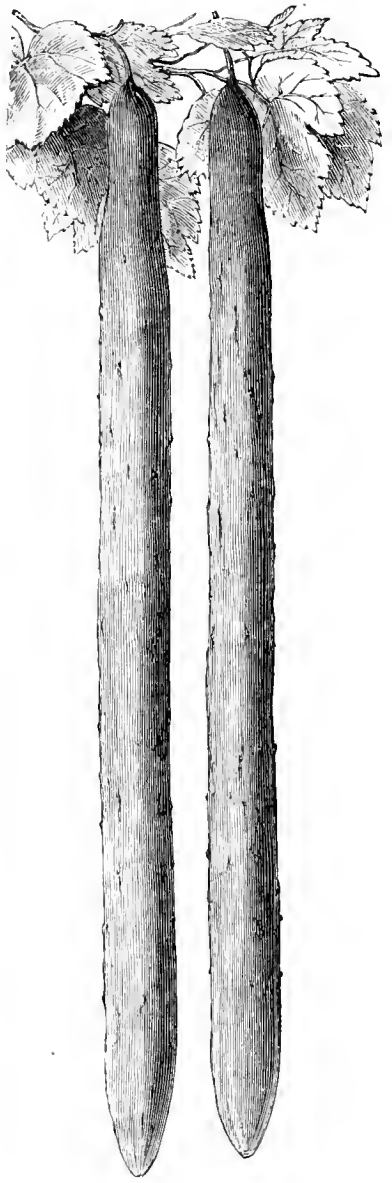
Post free on Application.

Quality unsurpassed.

THE ROYAL NORFOLK SEED ESTABLISHMENT
ESTº 1844.

DANIELS BROS.'
"DUKE OF EDINBURGH"
CUCUMBER.

"The finest in Cultivation."



DANIELS BROS.'
"Duke of Edinburgh" Cucumber.
Per Packet, 2s. 6d.

A magnificent variety, of a fine robust constitution; its fruit growing rapidly to the length of 30 to 36 inches, being at the same time of the most beautiful proportions and splendid quality. Immensely prolific, and unrivalled for exhibition or general use.

From ALBERT CHANCELLOR, Esq., *The Retreat, Richmond, S.W., January 2, 1875.*

"I grew your 'Duke of Edinburgh' Cucumber last year, some of the fruit measuring nearly 3 feet in length, perfectly straight, and of most delicious flavour. It is the finest Cucumber I have ever seen."

DANIELS BROS
Seed Growers
NORWICH.

Special Offer.

G. FARNSWORTH has to offer large quantities of the following, at per 1000; also other NURSERY STOCK, at low prices, which may be had on application at the Nurseries, Matlock:—ASH, Mountain, 3 to 5 feet, *17s. 6d.* ALDER, 3 to 5 feet, 30s. CHESTNUT, Horse, 6 to 8 feet, 80s. FIR, Austrian, 20 to 30 inches, 90s. HOLLY, Common, 12 to 18 inches, 180s. LARCH, 12 to 20 inches, 15s.; 1½ to 2½ feet, 25s. LIME LAYERS, 2-yr., Red-twigged, 2 to 4 feet, 80s. PRIVET, 1½ to 2½ feet, 12s.; 2 to 3½ feet, 15s.; 3 to 4½ feet, *17s. 6d.* RHODODENDRON, Hybrid and Pontica mixed, 3-yr. seedling, fine, 5s.; extra, transplanted, 6 to 10 inches, 60s.; 8 to 12 inches, 80s.; 12 to 18 inches, bushy, 140s.

THE PLANTING SEASON.
CHEAP OFFER.

LAURELS, 2 feet, 80s. per 1000; transplanted last spring, 2 to 3 feet, bushy, 100s. per 1000; fine plants, 3 to 5 feet, 25s. per 100; Portugal do., specimens, all transplanted last spring, 2 to 3 feet, 60s. per 100; 3 to 3½ feet, 100s per 100; TREE BOX, fine, 2 to 3 feet, 30s. per 100; Variegated do., 2 to 3 feet, 40s. per 100; CEDRUS DEODARA, fine specimens, 3 to 4 feet, 30s. per dozen; 4 to 5 feet, 42s. per dozen; OAKS, English, 4 to 6 feet, very strong, 60s. per 1000; CHESTNUTS, Horse, strong, 3 to 4 feet, 50s. per 1000; 4 to 6 feet, very strong, 80s. per 1000 Put on rail for cash by

R. TUCKER, The Nurseries, Faringdon, Berks.

A Priced CATALOGUE of General Nursery Stock on application.

Special Offer.

WILLIAM IRELAND, Pilton Nurseries, Barnstaple, has to offer the following:—

SPRUCE, 1½ to 2 feet, twice transplanted, 30s. per 1000.
THORN, Quick, 1½ to 2 feet, in drills, 8s. per 1000.
,, ,, 4-yr., transplanted, 2 to 3 feet, 15s. per 1000.
ABIES DOUGLASII, 4 to 6 feet, transplanted last April, 24s. per dozen
ARBOR-VITÆ, American, 6 to 8 feet, 50s. per 100.
AUCUBA JAPONICA, 2 to 3 feet, 40s. per 100.
BOX, Tree, in variety, 2½ to 3 feet, 30s. per 100.
COTONEASTER SIMONDSII, 2 ft., well rooted, 10s. per 100.
LAUREL, Portugal, 3 feet, 50s. per 100.
,, Common, 3 feet, fine, 20s. per 100.
LABURNUMS, 4 to 6 feet stems, with fine heads, 12s. per doz.
LAURUSTINUS, 2 to 3 feet, fine, 25s. per 100.
LIGUSTRUM OVALIFOLIUM, bushy plants, 2 to 3 feet, 30s per 100.
PERNETTYA MUCRONATA and SPECIOSA, fine bushy plants, 40s. per 100. (per dozen.
PINUS INSIGNIS, 3 to 4 feet, transplanted last April, 24s.
ULEX HIBERNICA, fine plants, 1½ to 2 feet, 50s. per 100.
YEW, English, bushy, transplanted last spring, 3 to 4 feet, 50s. per 100.
CHERRIES, Standard, Black varieties, fine heads, 18s. per doz.
RHODODENDRONS, Standard, finest named varieties, stems 4 to 5 feet, fine heads, *7s. 6d.* each.
DECIDUOUS FLOWERING SHRUBS, in great variety, large plants, 6s. per dozen.

The above, having been frequently transplanted, are fine plants and well rooted.

Pilton Nurseries, Barnstaple.

SPRING FLOWERS and SWEET VIOLETS.

	P. doz.	P. doz.
DAISIES, large crimson, pink, Red Rover, and white .. .. ..35s. per 1000	..	4 0
AUCUBÆFOLIA	1 6	.. 10 0
PANSY, Cloth of Gold, in pots	3 0	.. 16 0
,, Mrs Felton, in pots	3 0	.. 16 0
,, Blue King, large roots	3 0	.. 16 0
,, Purple King, large roots	3 0	.. 16 0
AUBRIETIA PURPUREA, large	2 0	.. 16 0
,, ,, GRANDIFLORA	3 0	.. 20 0
GENTIANA ACAULIS	6 0	.. 40 0
PRIMROSE, Purity, single white	3 0	.. 20 0
,, Magenta Queen, single	3 0	.. 20 0
,, double yellow	3 0	.. 20 0
POLYANTHUS, King Theodore, double black	4 0	.. 30 0
,, Jack-on-Ape, scarlet	3 0	.. 20 0
,, best gold-laced, large roots	1 6	.. 10 0
ROCKET, double purple	3 0	.. 20 0
VINCA MAJOR VARIEGATA	3 0	.. 20 0
VIOLETS, Brandyanum, double purple ..	4 0	.. 30 0
,, The Czar, one of the best single	2 0	.. 15 0
,, Neapolitan, double lavender	4 0	.. 30 0
,, Marie Louise, double blue, white centre, the best Violet in cultivation	6 0	.. 40 0

These Violets have been well grown, and suitable for potting.

CATALOGUE free on application.

FREDERICK PERKINS, Nurseryman, Regent Street, Leamington.

AVENUE TREES.

SPECIAL OFFER DURING the MONTH.

LIMES, 5 to 6 feet, at per 100.
LIMES, 10 feet, £7 10s. per 100.
HORSE CHESTNUTS, 9 to 10 feet, £6 per 100.
SCARLET HORSE CHESTNUTS (Standards), £10 per 100.
LOMBARDY POPLARS, 15 feet, £5 per 100.
LOMBARDY POPLARS, 20 ft., £7 10s. per 100.
ULMUS PLUMOSA, 10 to 12 feet, £10 per 100.

JOHN & CHARLES LEE,
ROYAL VINEYARD NURSERY,
HAMMERSMITH, near LONDON.

To Gardeners

GOOD TOBACCO PAPER for Fumigating Greenhouses and Vineries, at 1s. per lb. Carriage paid on quatities.

W. C. LEE, Tobacco Merchant, Grantham.

PEAT.—A few hundred tons of superior PEAT at 17s. a ton, Cash; delivered at the Farnborough Station on the South-Western or South-Eastern Railways.

W. TARRY, The Golden Farmer, Bagshot.

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per truck.

BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, New Holland Plants, 17s. per ton. [ton.

BROWN and BLACK PEAT, for general purposes, 17s. per Delivered on rail at Blackwater (South-Eastern Railway), or Farnborough (South-Western Railway), by the truck-load. Sample sacks, 5s. 6d. each.

FRESH SPHAGNUM, 10s. 6d. per sack.

WALKER AND CO., Farnborough Station, Hants.

FIVE THOUSAND BUSHELS of COCOA-NUT FIBRE REFUSE, invaluable for forcing, plunging, and all gardening purposes. Sure protection against Frost. Twenty bushels, 6s. 8d; 50 bushels, 12s. 6d.; truck-load, 45s. Delivered free on to rail, or within 6 miles.

THOMAS HODGES AND CO., Eagle Steam Fibre Works, Hatcham Road, Old Kent Road, S.E., and 81, Bishopsgate Street Without, London, E.C.

ODAMS' MANURES, FOR ALL CROPS.

Manufactured by the NITRO-PHOSPHATE and ODAMS' CHEMICAL MANURE COMPANY (LIMITED), consisting of Tenant-Farmers occupying upwards of 150,000 Acres of Land.

Chairman—ROBERT LEEDS, Keswick Old Hall, Norwich.
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CHIEF OFFICE—109, Fenchurch Street, London, E.C.
WESTERN COUNTIES BRANCH—Queen Street, Exeter.

Particulars will be forwarded on application to the Secretary, or may be had of the Local Agents.

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1850, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.

Sold Retail by Seedsmen, in boxes, 1s., 3s., and 10s. 6d. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

BELL'S MILDEW COMPOSITION, as used by them for the last twenty-five years at their "HORTICULTURAL ESTABLISHMENT, BRACONDALE," their "NURSERIES, LAKENHAM," and "VINERIES, THORPE HAMLET," consisting of over 30,000 feet of glass. Retail, 1s. 6d. and 2s. 6d per bottle, of the Sole Manufacturers,

BELL AND SON, 10 and 11, Exchange Street, Norwich.

RUSSIA MATS, for Packing and Covering from Frost.—New Large PETERSBURG, 60s. and 70s.; Close Wove, 40s.; for Packing, 20s., 25s. and 30s. per 100. MALTBY & CO., 11, Fenchurch Building, Fenchurch St., E.C.

RUSSIA MATS, for Covering Garden Frames.—ANDERSON'S TAGANROG MATS are the cheapest and most durable. Price List, which gives the size of every class of Mat, forwarded post-free on application.

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RUSSIA MATS.—A large stock of Archangel and Petersburg, for Covering and Packing. Second sized Archangel, 100s.; Petersburg, 60s. and 80s.; superior close Mat. 45s., 50s., and 55s.; packing Mats, 20s., 30s., and 35s. per 100; and every other description of Mat at equally low prices, at

J. BLACKBURN AND SONS, Russia Mat and Sack Warehouse, 4 and 5, Wormwood Street, E.C.

Russia Mat Merchants.

MARENDAZ AND FISHER, Importers and Manufacturers, 9, James Street, Covent Garden, have an immense stock of MATS for Covering, Tying, Packing, and Shading Purposes. Low Terms to very large Buyers.

ROFFIA FIBRE sold Wholesale only.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by Her Majesty the Queen for Windsor Castle and Frogmore Gardens, the late Sir Joseph Paxton, and the late Professor Lindley, &c.

MADE of PREPARED HAIR and WOOL.

A perfect non-conductor of heat or cold, keeping a fixed temperature where it is applied. A good covering for Pits and Forcing Frames.

PROTECTION from COLD WINDS and MORNING FROSTS.

"FRIGI DOMO" NETTING, 2 yards wide, 1s. 4d. and 1s. 10d. per yard.

"FRIGI DOMO" CANVAS.

2 yards wide	1s. 10d. per yard run.
3 yards wide	3s. per yard.
4 yards wide	3s. 10d. per yard.

ELISHA T. ARCHER, only Maker of "Frigi Domo," Stanstead and Brockley Roads, Forest Hill, London, S.E.; and of all Florists and Seedsmen. All goods carriage paid to London.

NOTICE.—REMOVED from 3, CANNON STREET, CITY.

SHAW'S TIFFANY, ELASTIC NETTING, CANVAS, &c, for Shading, Protecting, and other Horticultural Purposes. For Samples and Prices apply to JOHN SHAW AND CO., 29, Oxford Street, Manchester.

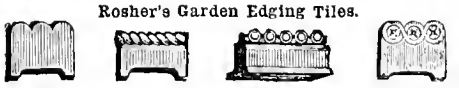
Pure Anthracite Coal.
ABSOLUTELY SMOKELESS.

THE GWANN-CAE GURWEN COLLIERY COMPANY (LIMITED)—Successors to Richard Morgan & Sons—supply the celebrated "Big Vein" and "Peacock" Coals, so long renowned for their purity and excellence. For Stoves, Greenhouses, Malting, &c.

For Prices, &c., apply to the Offices at Llanelly, South Wales, or to

Messrs. CHARRINGTON, SELLS, AND CO., Ratcliff, London, E.;
Mr. THOS. ARMSTONG, Market Harborough;
Mr. G. BANNISTER, Jun., Retford;
Mr. J. HAWLEY, Girlington, Bradford, Yorkshire;
Mr. W. JOHNSON, 80, Great Colman Street, Birmingham.

Rosher's Garden Edging Tiles.



THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.

GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.

F. ROSHER AND CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; Kingsland Road, E.

Agents for LOOKER'S PATENT "ACME FRAMES," PLANT COVERS and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.

Illustrated Price Lists free by post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3s. per square yard upwards. Pattern Sheets, of plain or more elaborate designs, with prices, sent for selection

WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds, Roofing Tiles in great variety, Slates, Cements, &c.

F. ROSHER AND CO., Brick and Tile Merchants.
See addresses above.

SILVER SAND, fine or coarse grain as desired. Prices by Post per Ton or Truck Load, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.

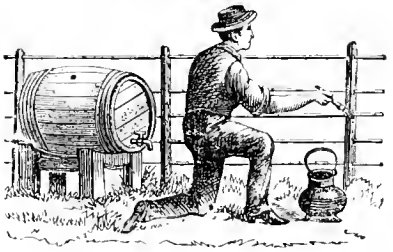
FLINTS and BRICK BURRS for Rockeries or Ferneries.

KENT PEATS or LOAM supplied at lowest rates in any quantities.

F. ROSHER AND CO.—Addresses see above.

N.B.—Orders promptly executed by Rail or to Wharves.
A liberal Discount to the Trade.

Oil Paint No Longer Necessary.



HILL AND SMITH'S BLACK VARNISH for Preserving Ironwork, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.

Glangwilly, Llanpumpsant, Carmarthen, Nov. 27, 1873.—"Mr. Lloyd Lloyd encloses cheque for £3 5s., amount due to Messrs. HILL & SMITH, and he considers the Black Varnish one of the most useful things he ever possessed."

Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley; and 118, Queen Victoria Street, London, E.C., from whom only it can be obtained.

CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would specially draw attention to the fact that every cask of their Varnish is legibly marked with their name and address, without which none is genuine.

Indestructible Terra-Cotta Plant Markers.

MAW AND CO.'S PATENT.—Prices, Printed Patterns, and Specimens, sent post-free on application; also Patterns of Ornamental Tile Pavements for Conservatories, Entrance Halls, &c.

MAW AND CO., Benthall Works, Broseley.

Under the Patronage of the Queen.

J. SMITH'S IMPERISHABLE STRATFORD LABELS.

The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.

The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."

Samples and Price List free.

Sole Manufacturer: J. SMITH, The Royal Label Factory, Stratford-on-Avon.

Labels—Secure Tree and Plant Labels.

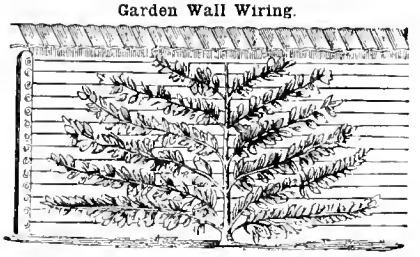
PARCHMENT or CLOTH LABELS, TREE or PLANT LABELS. Punched Parchment, 4 inches long, 3s. 6d per 1000, or 30s. per 10,000; if eyeleted, 4s per 1000. Vellum Cartridge, 4 inches long, 3s. per 1000 for 10,000. Sample Labels sent on receipt of postage stamp. Orders delivered free in London.

JOHN FISHER AND CO., Label Works, Boston.

TANNED GARDEN NETTING, 1½d. per Square Yard, for Protecting Seed-beds, Peas, Fruit, Strawberries, &c., from Birds, Frost, Blight, &c., and as a Fence for Fowls, in 1, 2, 3, and 4-yards widths. Hexagon, Tiffany, and other Netting, Galvanised Wire Netting, Pea Hurdles, and Seed Protectors, by

C. WRIGHT, 29, Lime Street, E.C., late 376, Strand, W.C.

Garden Wall Wiring.



R. HOLLIDAY, PRACTICAL WIREWORKER, 28, Portobello Terrace, Notting Hill Gate, London, W., begs to call the attention of all Gardeners who are about to have their Garden Walls Wired to his system of Wiring Walls, as being superior to all others for neatness, strength, and durability.

For Neatness,—Because all the Wires are kept perfectly tight, without the use of the Raidisseur.

For Strength,—Because very much stronger Wire can be used, therefore not liable to be drawn out of the horizontal line by the branches of trees.

For Durability,—Because, being able to use the strong Wire, it is not so likely to be eaten through with the galvanism as the thin Wire, as used in the French system.

The above Engraving is an Example of our system of Wiring Garden Walls. We have recently completed the Wiring of the New Garden Walls for the Marquis of Salisbury, Hatfield House. The Walls are 12 feet high and 753 yards long, wired on both sides; making a total length of 1506 yards,—our system being chosen in preference to any other.

Illustrated Catalogues of Garden and Conservatory Wirework, Rabbit Proof Hurdle Fencing, &c., may be had on application as above.

CAUTION TO BUYERS
Of WIRE NETTING.

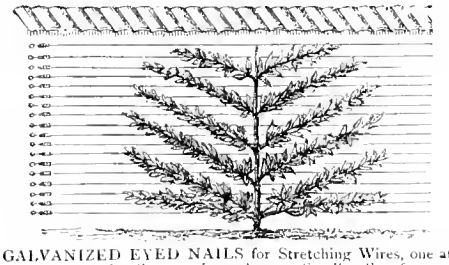
The great reputation and success of Messrs. J. B. BROWN AND CO.'S VIENNA PRIZE WIRE NETTING seem to have induced certain Dealers in Wire Netting to advertise an inferior article at reduced prices, specifying the mesh, gauge, &c., as if such were the same in quality and value as the Prize Wire Netting of which Messrs. J. B. BROWN & CO. are THE SOLE MANUFACTURERS.

Messrs. BROWN & CO. would suggest that, before ordering quantities, one roll of their Wire Netting should be ordered and one roll of that advertised at reduced prices. The size and shape of the mesh may then be examined, the thickness or strength of wire, the weight of the rolls and the exact measurement, the general finish of the manufacture, and the quality of the galvanizing.

This examination will prove the respective qualities of the Netting.

90, Cannon Street, London, E.C.

THE FRENCH SYSTEM
OF WIRING GARDEN WALLS, &c., FOR TRAINING FRUIT TREES.



GALVANIZED EYED NAILS for Stretching Wires, one at each end of wall, 1s. 10d. per dozen. Smaller Size for supporting the wire, every 10 feet, 10d per dozen. Smallest Sizes, not recommended, 6d. per dozen.

GALVANIZED MALLEABLE IRON RAIDISSEURS, for Tightening Wires, one to the centre of each wire, 2s. 6d. per dozen.

GALVANIZED KEY, for Winding Raidisseurs, to tighten the wire, 4d. each.

SMALL-EYED STRAINING SCREWS and NUTS, neater than Raidisseurs, for Tightening Wires, 3s. 6d. doz.

No. 14 GALVANIZED WIRE, placed 10 inches apart on the walls, 2s. per 100 yards.

"The system of wiring a wall is simple, cheap, almost everlasting, and excellent in every particular, and it must ere long be universally adopted."

Prices of Iron and Wire Espalier for training Fruit Trees on application.

MESSRS. J. B. BROWN & CO.,
90, CANNON STREET, LONDON, E.C.

Established over a Quarter of a Century.

FRANCIS MORTON & CO'S (LIMITED) LIVERPOOL NAYLOR STREET CABLE FENCING

Is in use over many thousand miles,

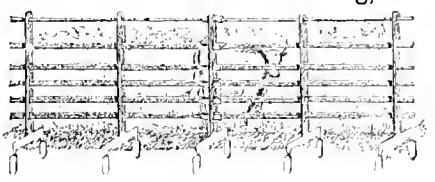
And has been awarded the Medals and highest Commendation, of all the leading Agricultural Societies.

It is constructed with

POWERFUL WINDING STRAINING PILLARS,
RIGID INTERMEDIATE IRON POSTS,
STRONG and DURABLE WIRE CABLE STRANDS,

Forming the most efficient Strained Iron Fencing known for agricultural and general purposes.

Continuous Bar Iron Fencing,



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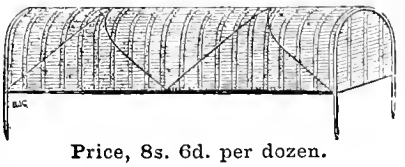

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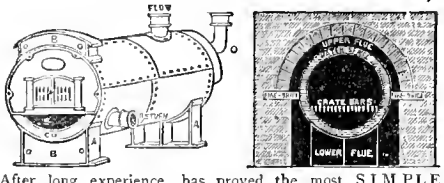

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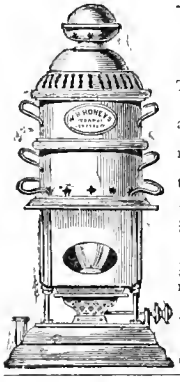

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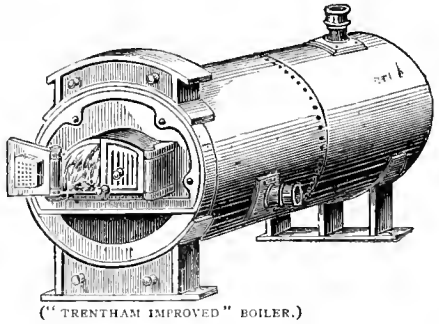

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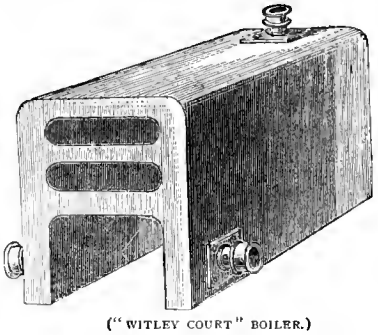

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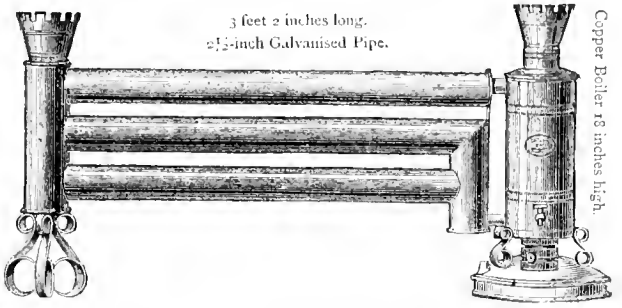

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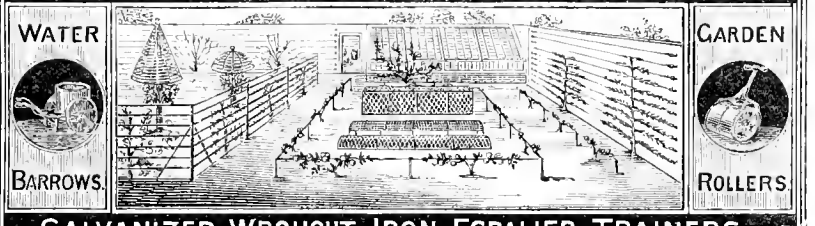

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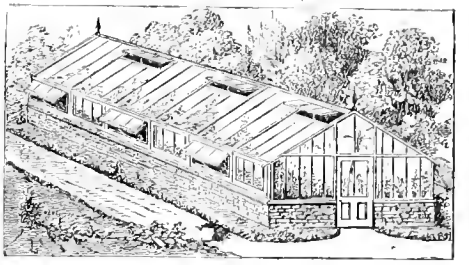

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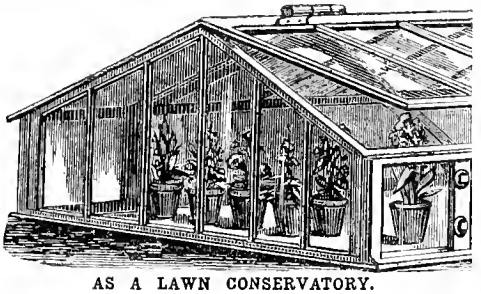

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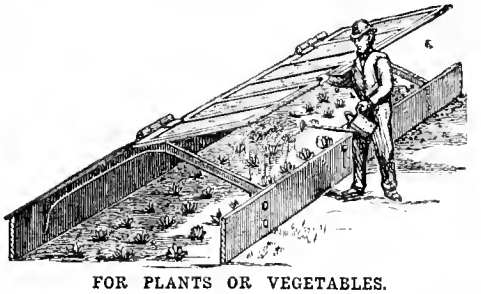

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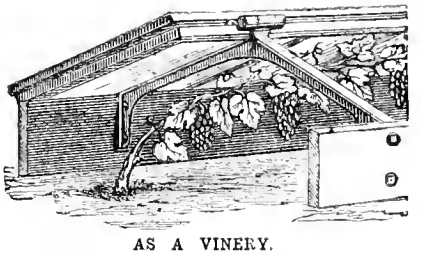

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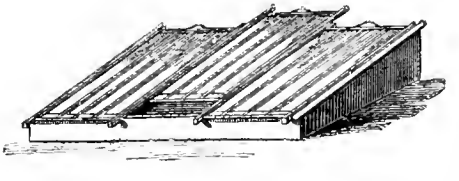

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LONDON AND COUNTY BANKING COMPANY.

Established in 1836, *and Incorporated in* 1874 *under "The Companies Act*, 1862."

Subscribed Capital, £3,750,000, in 75,000 Shares of £50 each.

REPORT ADOPTED AT THE ANNUAL GENERAL MEETING, FEB. 3, 1876.

The Directors have pleasure in submitting to the Proprietors the Balance Sheet of the Bank for the Half-year ended on 31st December last. With reference to the exceptional loss arising out of the failure of Messrs. A. Collie & Co., mentioned in the Report to the Proprietors in August last, the Directors have, after careful consideration, transferred £75,000 from the balance then carried forward to the special account previously opened, which will, in their judgment, fully cover the whole of the deficiency.

This transfer of £75,000 leaves the balance brought from last account £13,856 12*s.* 3*d.*, including £6,093 15*s.* reserved to meet interest then accrued on New Shares.

The Nett Profits for the Half-year, after paying interest to customers and all charges, allowing for rebate, and making provision for bad and doubtful debts, amount to £142,874 6*s.* 3*d.*, which, added to the above balance of £13,856 12*s.* 3*d.*, produces a total of £156,730 18*s.* 6*d.* Out of this sum the Directors have added £25,000 to the Reserve Fund, raising that Fund to £699,522 10*s.*

They recommend the payment of a Dividend of 8½ per cent for the half-year, and that the balance of £14,730 18*s.* 6*d.* remaining (after providing £15,000 for interest on New Shares) be carried forward to Profit and Loss New Account.

The present Dividend, added to that paid to 30th June, will make 16½ per cent. for the year 1875.

The Directors retiring by rotation are James Morley, Abraham Hodgson Phillpotts, and James Duncan Thomson, Esquires, who, being eligible, offer themselves for re-election.

The Dividend, £1 14*s.* per Share, free of Income Tax, will be payable at the Head Office, or at any of the Branches, on or after Monday, 14th instant.

BALANCE SHEET OF THE LONDON AND COUNTY BANKING COMPANY, DECEMBER 31, 1875.

DR.	£	s.	d.	£	s.	d.
To Capital paid up	1,200,000	0	0			
Instalments received in respect of New Shares ..	299,045	0	0			
				1,499,045	0	0
Reserve Fund	525,000	0	0			
Instalments received in respect of New Shares ..	149,522	10	0			
Amount now added ..	25,000	0	0			
				699,522	10	0
Amount due by the Bank for Customers' Balances, &c.	21,399,784	6	4			
Liabilities on acceptances, covered by Securities ..	2,162,095	7	0			
				23,561,879	13	4
Profit and Loss Balance brought from last Account less £75,000 referred to in the Report	7,762	17	3			
Reserve to meet Interest accrued on New Shares..	6,093	15	0			
Gross Profit for the Half-year, after making provision for Bad and Doubtful Debts, viz.:	395,530	1	5			
	409,386	13	8			
Less amount added to Reserve Fund	25,000	0	0			
				384,386	13	8
				£26,144,833	17	0

CR.	£	s.	d.	£	s.	d.
By Cash on hand at Head Office and Branches, and with Bank of England ..	2,735,258	10	2			
Cash placed at Call, and at Notice, covered by Securities	3,375,270	15	2			
				6,110,529	5	4
Investments, viz.:—						
Government and Guaranteed Stocks	2,336,754	16	9			
Other Stocks and Securities	80,805	11	11			
				2,417,560	8	8
Discounted Bills, and Advances to Customers in Town and Country ..	14,805,785	3	4			
Liabilities of Customers for Drafts accepted by the Bank (as per contra) ..	2,162,095	7	0			
				16,967,880	10	4
Freehold Premises in Lombard Street and Nicholas Lane, Freehold and Leasehold Property at the Branches, with Fixtures and Fittings				441,137	14	3
Interest paid to Customers				77,776	19	5
Salaries and all other Expenses at Head Office and Branches, including Income-tax on Profits and Salaries				129,948	19	0
				£26,144,833	17	0

DR. PROFIT AND LOSS ACCOUNT.	£	s.	d.
To Interest paid to Customers, as above ..	77,776	19	5
Expenses, as above	129,948	19	0
Rebate on Bills not due, carried to New Account..	44,929	16	9
Amount added to Reserve Fund	25,000	0	0
Interest on New Shares	15,000	0	0
Dividend of 8½ per Cent. for Half-year ..	102,000	0	0
Balance carried forward	14,730	18	6
	£409,386	13	8
CR.			
By Balance brought forward from last Account, less £75,000 referred to in the Report ..	7,762	17	3
Reserve to meet Interest accrued on New Shares	6,093	15	0
Gross Profit for the Half-year, after making provision for Bad and Doubtful Debts ..	395,530	1	5
	£409,386	13	8

We, the undersigned, have examined the foregoing Balance Sheet, and have found the same to be correct.

(Signed) WILLIAM NORMAN, RICHARD H. SWAINE, STEPHEN SYMONDS, } *Auditors.*

London and County Bank, January 27, 1876.

By Order, GEO. GOUGH, *Secretary.*

London and County Banking Company.

NOTICE IS HEREBY GIVEN that a DIVIDEND on the CAPITAL of the COMPANY, at the rate of 8½ per cent. for the half-year ended December 31, 1875, will be PAYABLE to the Proprietors either at the Head Office, 21, Lombard Street, or at any of the Company's Branches, on or after MONDAY, the 14th instant.

By order of the Board,

W. McKEWAN, WHITBREAD TOMSON } *Joint General Managers.*

21, Lombard Street, February 4, 1876

THE AGRICULTURAL GAZETTE,

for MONDAY, JANUARY 31.

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To Nurserymen.

PARTNERSHIP, JUNIOR, WANTED.—A Gentleman, who has had several years' experience, wishes to obtain a Junior Partnership in an established Nursery. References given. Letters, stating particulars and terms, to be addressed to E. W., 2, Alexander Terrace, Norbiton, Surrey.

WANTED, immediately, an active, practical GARDENER, thoroughly understanding Greenhouse Plants, Flower and Kitchen Garden, &c. Married, with no family preferred, and Wife a good Laundress Cottage and vegetables found. Under Gardener kept. Apply, first by letter, stating age, reference, wages, &c., to T. B. HILLIARD, Esq., Oak Hill, Southgate, N.

WANTED, a WORKING GARDENER, where two Assistants are kept, to take charge of Conservatory, Hothouse, Greenhouse, Kitchen, and other Gardens.—T. R., W. H. Smith & Son, Railway Station, Truro, Cornwall.

WANTED, as GARDENER (SINGLE-HANDED, and to Milk a Cow), an experienced Man, with good character. Wages, 25*s.* per week.—Address, stating age and particulars, Z. Y., Steel & Jones, Advertising Agents, Spring Gardens, S.W.

WANTED, a WORKING FOREMAN (INDOOR); must be a thoroughly practical sober man, who understands and can carry out the routine of Preparing and Forcing Flowers in quantity during the winter months. Three assistants and every facility for the work. State where experience gained and wages required to J. DELAMERE, Nurseryman, Bootle, near Liverpool.

WANTED, as GROOM and GARDENER, a middle-aged Man, with no family; Wife to assist in house when required Cottage rent free.—Apply by letter, stating all particulars, to Messrs. WILSON AND WHITWORTH, Romford.

WANTED, a good working NURSERY FOREMAN, with a knowledge of Sales, Keeping Accounts, and good Penman. A married man without children preferred.—Mr. SCOTT, Merriott, Somerset.

WANTED, a steady industrious MAN, of stirring active habits, with a thorough knowledge of General Nursery Work and Forest Tree Cropping, capable of Working efficiently a large Staff of Labourers.—State experience and wages expected to FRANCIS & ARTHUR DICKSON & SONS, "Upton" Nurseries, Chester.

WANTED, TWO strong and active Young MEN, one for Outdoor Nursery Work and one for Greenhouse. Liberal wages given, and preference to those accustomed to Grow for Market. Must be sober and of good character.—R. W. PROCTOR, Nurseryman, Seedsman, and Florist, Chesterfield.

WANTED, TWO Young MEN, of some experience, to assist in the Houses.—BENJAMIN R. CANT, Nurseryman, Colchester.

WANTED, TWO good NURSERY HANDS, for Outdoor Department. None need apply who cannot produce good characters for ability, &c.—State wages and other particulars on application to R. & N. ALLUM, Nurserymen, &c., Tamworth.

WANTED, two steady industrious Young MEN, accustomed to Market Garden and Nursery Work.—W. W. JOHNSON AND SON, Nurserymen, Boston.

WANTED, as ASSISTANT, an active young Man, having a thorough knowledge of the Vegetable and Flower Seed Trade, and expert in the execution of Orders.—Apply, stating full particulars of experience and wages required, to DICKSON, BROWN AND TAIT, Seed Merchants, Manchester.

WANTED, a Young MAN, to assist in the Houses.—E. COOLING, Mile Ash Nurseries, Derby.

WANTED, immediately, a Young MAN, well up in the Retail Seed Business. Good wages given. References as to character and ability required.—B. C., Hurst & Son, Seed Merchants, Leadenhall Street, London, E.C.

WANTED, a Business Young MAN, to Open and take the Entire Management of a First-class Florist's Shop at South Kensington. Salary and Commission. Security required.—2, Exhibition Road, South Kensington, S.W.

WANT PLACES.

Head Gardeners.

JOHN LAING can at present recommend with every confidence several energetic and practical Men, of tested ability and first-rate character. Ladies and Gentlemen in WANT of GARDENERS and BAILIFFS, or GARDENERS for First-rate establishments or Single-hand situations, can be suited, and have full particulars by applying at Stanstead Park and Rutland Park Nurseries, Forest Hill, London, S.E.

B. S. WILLIAMS, having at the present time several very excellent GARDENERS upon his Register, is desirous of placing them in Situations where great experience and trust are required. B. S. W. would at the same time beg to intimate that when a Gardener is applied for that the filling of the situation should be left with him, as that would prevent unnecessary correspondence and delay.—Victoria and Paradise Nurseries, Upper Holloway, London, N.

GARDENER (HEAD), in a Nobleman's or Gentleman's place.—Age 30, married; thorough knowledge of the profession. Six years' good character from present situation.—E. S., Rose Cottage, Putney Heath, S.W.

GARDENER (HEAD).—Has a practical knowledge and experience of the profession in all its branches. Understands Stock. Good recommendation.—G. CODICOTE, Welwyn, Herts.

GARDENER (HEAD).—Age 24, married; understands Vines, Cucumbers, Melons, Stove and Greenhouse Plants, Flower and Kitchen Gardening. Good character.—W. TAIT, 13, Clewer Village, Windsor, Berks.

GARDENER (HEAD).—Age 38, married; thoroughly experienced in all branches of the profession. Good character given from previous employers.—J. R. B., The Cottage, Woodfield House, Streatham, S.

GARDENER (HEAD).—Age 24; understands Vines, Pines, Melons, Cucumbers, Stove and Greenhouse Plants, Kitchen Garden, &c.—S. T., 38, Alfred Street, Billing Road, Northampton.

GARDENER (HEAD), to any Nobleman or Gentleman requiring the services of a thorough practical Man.—Age 41, married, no encumbrance; understands the profession in all its branches. Highest recommendation from previous employer.—A. G., Post-office, Burgess Hill, Sussex.

GARDENER (HEAD, where assistance is given).—Age 30, single; thorough knowledge of the profession. Over 4½ years' excellent character.—A. B., Lamaway's, Halfway Street, near Eltham, Kent.

GARDENER (HEAD)—Age 37, married, no encumbrance; thoroughly understands Vines, Melons, and Cucumbers, Stove and Greenhouse Plants, and Flower and Kitchen Gardening. Fourteen years' experience. Good character.—C. T., Post Office, Chertsey, Surrey.

GARDENER (HEAD), where assistance is given.—Age 28, single at present; understands Vines, Peaches, Melons, Cucumbers, and Flower and Kitchen Gardening. Nine years' experience.—A. B., Post Office, Solihull, Birmingham.

GARDENER (HEAD).—Mr. J. CHILD, Gardener to Mrs. Torr, Garbrand Hall, Ewell, Surrey, can with confidence recommend his Foreman to any Nobleman or Gentleman requiring a competent Gardener. Twelve years' experience.—Address as above, or to R. H. HILL, The Gardens, Garbrand Hall, Ewell, Surrey.

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GARDENER (HEAD), age 31, single.—Mr. A. HOSSACK, Gardener to the Marquis of Hertford, Ragley Hall, Alcester, can with every confidence recommend the above to any Nobleman or Gentleman requiring a thorough energetic and trustworthy Gardener. He has had extensive experience in some of the best places in England, and can produce excellent testimonials from such. Further particulars will be furnished on application to the above.

GARDENER (HEAD, WORKING), age 33, married.—A GENTLEMAN wishes to recommend his Gardener, a Scotchman, thoroughly competent.—E., 356, H. Greenwood, Advertising Agent, Liverpool.

GARDENER (HEAD, WORKING).—Age 26, unmarried, Scotch; understands the profession in all its branches, having been trained in first-class places in England and Scotland.—W. SMITH AND SON, Seedsmen, Aberdeen.

GARDENER (HEAD, WORKING).—Age 27, married, no family, well understands the management of a Gentleman's place. Good reference.—C. P., Bishop's Waltham, Hants.

GARDENER (HEAD, WORKING).—Age 26, unmarried; experienced in all branches. Nine years' first-class references for honesty, sobriety, and ability.—A. B., Post Office, St. Mary Cray, Kent.

GARDENER (HEAD, WORKING), where two or three are kept.—Age 35, married, one child; well experienced in Early and Late Forcing of Vines, Peaches, Melons, Cucumbers; thoroughly understands Kitchen and Flower Gardening. Three years' good character.—C. DENCH, Framfield Street, Hawkhurst, Sussex.

GARDENER (HEAD, or SINGLE-HANDED).—Age 29, married, one child; thoroughly practical in all branches. Well up in Early and Late Forcing, Fruit, Flower, and Kitchen gardening. One year and three months' good character from present employer.—A. J. M., 47, Calvert Road, East Greenwich, Kent.

GARDENER.—Age 25; experienced in all branches. Good character.—State wages to F. S., Owen's Court, Selling, Faversham, Kent.

GARDENER.—WILLIAM JONES, Gardener to Sir Thomas White, Great West Hatch, Chigwell, Essex, can confidently recommend his Foreman, JAMES KITCHIN, to any Lady or Gentleman requiring the services of an energetic and trustworthy man.—Address as above.

GARDENER, or GARDENER and BAILIFF.—Age 40, married; ten years in present situation, leaving on account of a change in the establishment.—GARDENER, Post Office, Alton, Hants.

GARDENER (SINGLE-HANDED, or where two are kept).—Age 30, married, no family; thoroughly understands the duties. Two years' good character.—G. R., 40, James Street, Clapham, S.W.

GARDENER (SINGLE-HANDED or UNDER).—Age 25, married, understands the general routine of a place. Character satisfactory.—W. A., 4, Capper Street, Leyton Green, Essex.

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FOREMAN in a Nobleman's or Gentleman's Garden.—Age 23, single. Can be well recommended.—T. G., Sandridge Park, near Melksham, Wilts.

FOREMAN, in a Gentleman's Garden.—Four years' good character from last situation.—Eight years' experience Bothy preferred. Good references.—Address, stating wages, to A. R., Woodford Green, Essex.

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IMPROVER, with some good Gardener who would take an interest in him.—Age 16, strong and active, with some experience in the general routine of Gardening.—W. C., Station Post-office, Weybridge.

To Noblemen and Gentlemen.

AGENT or BAILIFF.—Wanted, by an experienced married man, a situation as above, now, or at Lady-day; practically understands the Cultivation of different Soils, the Management of Flock and Stock, Drainage, Machinery, and Improvements. Wife thoroughly experienced in Dairy and Poultry. Nine years in last situation; death the cause of leaving. Good references.—W. E., Post-office, Amberley, Arundel.

GENERAL MANAGER or TRAVELLER.—Mr. MANDER having terminated his engagement as General Manager for Mr. J. SHAW, of the Stamford Nurseries, Bowdon, Cheshire, is now at liberty to treat with any one requiring the services of an energetic man, many years in the trade, either as General Manager or Traveller, or both combined.—Mr. MANDER, *Gardeners' Chronicle*, Office, W.C.

TO NURSERYMEN, ESTATE MANAGERS, &c.—A well educated young Man, aged 21, desires a situation in a good Nursery Establishment, or on some large Estate, where a thorough practical knowledge could be acquired, either in Horticulture generally, or in the Management of an Estate. He is acquainted with the science, and, to some extent, with the art of Horticulture, and has an ardent love for the profession.—For particulars apply to C., 131, High Street, Croydon.

SHOPMAN, CLERK, or TRAVELLER (in Nursery or Seed Trade).—Age 27. Several years' experience.—X., 1, Celbridge Place, Westbourne Grove, London, W.

To the Seed and Nursery Trade.

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Bowes Manor, Southgate	2,500 feet.
Bryn-y-Neuadd, Llanfairfechan, N. Wales	3,600 feet.
Buenos Ayres Bank, South America	1,850 feet.
Badminton, Chippenham	1,600 feet.
Bridgen, Bexley, Kent	1,150 feet.
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Chilham Castle, Canterbury	4,100 feet.
Catholic Apostolic Church, Chelsea	1,600 feet.
Crowe Hall, Bath	1,275 feet.
Cardiff Castle Gardens, Cardiff	3,430 feet.
Distillery House, Wandsworth	1,800 feet.
Drayton Manor, Tamworth	2,540 feet.
Eastwood Park, Gloucestershire	2,200 feet.
Easton Hall, Grantham	1,200 feet.
Ewell Castle, Surrey	1,560 feet.
Grosvenor Hotel, Chester	Hall and Offices.
Herne Park, Kent	2,020 feet.
Hornby Castle, Leeds	5,000 feet.
Hilston Park, Monmouth	2,500 feet.
Hill House, Mitcham, Surrey	1,500 feet.
Holmbury, Dorking	1,800 feet.
Henham Hall, Suffolk	2,100 feet.
Heytesbury House, Wilts	1,750 feet.
Henghton Hall, Huntingdon	1,980 feet.
Hyland's Park, Essex	1,200 feet.
Horncastle Church, Lincolnshire	2,300 feet.
Hall Place, Maidenhead	1,036 feet.
Ingestre Hall, Stafford	1,600 feet.
Ilam Hall, Derbyshire	2,300 feet.
Ilsington House, Dorchester	4,500 feet.
Iwerne House, Blandford	2,120 feet.
Knutsford Tannery, Warrington	1,200 feet.
Keydell, Horndean, Hants	1,800 feet.
Laleham House, Chertsey	1,000 feet.
Llandaff House, Cardiff	1,200 feet.
Longleat, Warminster	4,600 feet.
Lying-in Hospital, Lambeth	1,200 feet.
London Road Gardens, Bishops Stortford	5,600 feet.
Law Courts, Lancaster Castle	1,100 feet.
Melling Church, Lancashire	1,020 feet.
Marchwiel Hall, North Wales	1,200 feet.
Mansion, Leigh Park, Havant	3,050 feet.
Messrs. Dean & Sons, Printing Works, Fleet Street	1,400 feet.
Messrs. F. & A. Dickson's Nurseries, Chester	3,850 feet.
Messrs. J. Dickson & Son's Nurseries, Chester	3,200 feet.
Messrs. F. & A. Smith's Nurseries, Dulwich	8,280 feet.
M. Van Houtte's Nurseries, Ghent, Belgium	Two Miles.
Mr. Catleugh's Nurseries, Feltham	2,800 feet.
Mr. Walton's Nurseries, near Blackheath	1,800 feet.
New Lions' Houses, Zoological Gardens, London	3,000 feet.
Neasham Hall, Darlington	1,870 feet.
New Laithes Hall, Leeds	1,600 feet.
Normanhurst Court, Battle	3,400 feet.
Ottershaw Park, Chertsey	1,200 feet.
Oakwood Hall, Cheshire	1,150 feet.
Oulton Hall, Leeds	2,800 feet.
Oakhurst, Ealing	1,500 feet.
Preston Church, Kent	1,060 feet.
Pine-Apple Lodge, Peckham	4,000 feet.
Pale Hall, Corwen, North Wales	1,987 feet.
Plas Dinas, Dinas Mawddwy, North Wales	3,000 feet.
Park Hill, Streatham	3,400 feet.
Quorn Lodge, Leicestershire	1,060 feet.
Ridding's House, Alfreton	5,600 feet.
Ruddington Grange, Nottingham	1,500 feet.
Ruxley Lodge, Esher	1,050 feet.
St. Peter's Roman Catholic Church, Cardiff	1,450 feet.
St. Mark's College, Chelsea	1,900 feet.
Savernake Forest, Wilts	2,760 feet.
Spye Park, Chippenham	5,800 feet.
Stanstead Park, Emsworth	5,000 feet.
Stone House, Canterbury	3,770 feet.
Spring House, Heckmondwicke	3,650 feet.
Sedgwick House, Milnthorpe	1,900 feet.
Samelsbury Hall, Preston, Lancashire	1,600 feet.
Sandon Hall, Staffordshire	2,500 feet.
Springfield, Newport, Monmouthshire	1,800 feet.
Stoodleigh, Tiverton, Devon	2,400 feet.
The Logs, Hampstead	3,000 feet.
The Grange, Kilburn	1,200 feet.
The Brewery, Faversham	1,100 feet.
The Rookery, Streatham	1,000 feet.
The Daison, St. Mary Church, Torquay	1,460 feet.
Torry Hill, Sittingbourne	1,700 feet.
Tandridge Court, Godstone	2,500 feet.
Taplow House, Bucks	1,860 feet.
Ulverstone Bank	1,000 feet.
Weir Bank, Teddington	1,100 feet.
West Lavant House, Chichester	1,000 feet.
Woodseat, Ashbourne	2,900 feet.
Wimpole Hall, Royston	2,185 feet.
Willey Hall, Broseley	2,800 feet.
Wesleyan College, Battersea	1,460 feet.
Yateley Hall, Farnborough, Hants	1,600 feet.

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HORTICULTURAL BUILDERS, HOT-WATER APPARATUS MANUFACTURERS & PATENTEES,

KING'S ROAD, CHELSEA, LONDON, S.W.

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THE

GARDENERS' CHRONICLE.

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Now ready, price in cloth 16s.,

THE GARDENERS' CHRONICLE VOLUME for JULY to DECEMBER, 1875.

W. RICHARDS, 41, Wellington Street, Strand, W.C.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE.—FRUIT and FLORAL COMMITTEES' MEETINGS, on WEDNESDAY next, February 16, at 11 o'Clock. GENERAL MEETING at 3 o'clock. Admission 1s.

Notice.

ROYAL AQUARIUM SUMMER and WINTER GARDEN.—SCHEDULES of all the FLOWER and FRUIT EXHIBITIONS are now ready, and may be had by applying to
JOHN WILLS, Superintendent of Horticultural Exhibitions, Royal Aquarium Summer and Winter Garden, Westminster, London, S.W.—Feb. 9.

GRAND SPRING FLOWER SHOW, MARCH 15 and 16, in the Large Hall, Leeds Horticultural Gardens Company (Limited). Schedules on application.
Office, 103, Hyde Park Road. G. FORBES, Secretary.

DEVON: GRAND SHOW.—The NEXT EXHIBITION of the TIVERTON HORTICULTURAL SOCIETY (open to all England), will be held on MAY 24 and 25, during the visit to the town of the Devon Agricultural Association.—Stove and Greenhouse Plants, £20 (Cup), £5; do. Foliage, £20 (Cup), £5; Azaleas, £15 (Cup), £5; Pot Roses, £10 (Cup), £3; Pelargoniums, £6 (Cup), £2 10s.; Ericas, £5, £2 10s.; Cut Roses, £1 and 10s. Schedules application to
Messrs. ARTHUR PAINE and JAMES MILLS, Honorary Secretaries, Tiverton.

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JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Brixelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

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GEORGE EDWARDS begs to call attention to his Tenth Annual CATALOGUE, now ready. Comparison of Prices with other houses is invited.
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G. CHORLEY, Midhurst, has to offer:—CHESTNUTS, Spanish, 2 to 3 feet, 40s.; 18 inches to 2 feet, 30s.; 100,000 Seedling do. ASH, 25s. to 30s. ALDER, 25s. to 30s. THORN QUICK, 12s. 6d. All stout, well-rooted, transplanted.

ASH, from 2 to 6 feet; SPRUCE FIR, 2 to 3 and 4 to 6 feet; AUSTRIAN PINE, 4 to 6 feet; PURPLE BEECH, WEEPING ASH, &c.
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LARCH, 9 to 15 inches, 6s.; 1½ to 2 feet, 20s. SPRUCE, 1½ foot, 14s. SCOTCH, 1½ foot, 14s. OAK, 3 to 4 feet, 20s. Also Green HOLLY, PORTUGAL LAUREL, THUJA LOBBII, &c. Very cheap, all sizes.
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2-yr. seedlings, 4 to 8 inches, transplanted.
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Special Culture of Fruit Trees and Roses.

THE DESCRIPTIVE and ILLUSTRATED CATALOGUE of FRUITS (by THOMAS RIVERS) is now ready; also CATALOGUE of Select ROSES. Post-free on application.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

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WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds.
CATALOGUES now ready, which contain every requisite, at fair prices, post free on application.
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B. S. WILLIAMS begs to announce that his stock of VINES is now in fine condition, and ready for sending out. It comprises all the leading kinds, strong Canes of Pearson's Golden Queen.
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Auction Mart, E.C.

For UNRESERVED SALE an Important Consignment of 6000 unusually fine LILIUM AURATUM, in splendid condition; and a variety of choice JAPANESE MANUFACTURES and CURIOS from Japan: also 800 choice double CAMELLIAS, Indian and Ghent AZALEAS, from Belgium, well set with bloom-buds.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION at the Mart, Tokenhouse Yard, near the Bank, E.C., on MONDAY, February 14, at 11 for half-past 11 o'Clock precisely.

On view morning of Sale. Catalogues had at the Mart, and of the Auctioneers, 98, Gracechurch Street, E.C.

Bagshot.

FIVE DAYS' UNRESERVED SALE of NURSERY STOCK (the Land being required for Building Purposes). Worthy the attention of the Trade, and of others largely engaged in planting.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Directors of the Heatherside Nursery Company to SELL by AUCTION on the Premises, The Heatherside Nursery, Bagshot, Surrey, on MONDAY, February 14, and four following days, at 11 for 12 o'Clock precisely each day, the first portion of the extensive Stock, covering an area of 150 acres, and comprising 20,000 Variegated and Green Hollies, 1 to 6 feet; 5000 Common and Portugal Laurels, 2000 choice named Rhododendrons, 80,000 Austrian and other Pines, 2000 specimen Coniferæ and Evergreens, and thousands of other Shrubs; Forest and Ornamental Trees in great variety; 10,000 Standard and Dwarf Roses, 2000 Tea Roses in pots.

The stock may be viewed at any time. Catalogues may be had on the Premises, and of the Auctioneer, 98, Gracechurch Street, E.C.

N.B. Particulars and price of the FREEHOLD ESTATE, covering altogether an area of 267 acres, may be obtained on application to Messrs. PROTHEROE AND MORRIS.

City Auction Rooms, 38 & 39, Gracechurch Street, E.C.

IMPORTANT SALE of about 200 choice double CAMELLIAS, 2 to 4 feet, English grown, and beautifully furnished with bloom-buds; choice AZALEA INDICA, ERICAS, EPACRIS, FUCHSIAS, DAHLIAS, &c., and a superb assortment of Standard, Dwarf, and Climbing ROSES, of the best varieties; selected FRUIT TREES, CONIFERÆ, and EVERGREEN SHRUBS, hardy AMERICAN PLANTS, with some choice LILIUMS, GLADIOLUS, RANUNCULUS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION at the City Auction Rooms, E.C., on TUESDAY, February 15, at half-past 12 o'Clock precisely.

On view the morning of Sale. Catalogues may be had at the Rooms, and of the Auctioneers, &c., 98, Gracechurch Street, E.C., and Leytonstone, E.

Tooting, S.W.

IMPORTANT SALE of Extra Thriving NURSERY STOCK, remarkably well grown, and in excellent condition for removal, comprising thousands of Border Shrubs, admirably adapted for effective planting, bushy Hybrid and Pontica Rhododendrons, well set with buds, Aucubas, &c.: also a splendid assortment of Fruit and Ornamental Trees, Standard and Dwarf Roses to name; likewise a quantity of Hardy Climbers in pots, &c

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. R. Parker to SELL by AUCTION, on the Premises, Exotic Nursery, Tooting, Surrey, fifteen minutes' walk from Tooting Junction and Balham Stations, on TUESDAY, February 22, at 11 for 12 o'Clock precisely, without reserve.

Viewed day prior. Catalogues had of the Auctioneers, 98, Gracechurch Street, E.C.

Near Sunningdale Station, Bagshot, Surrey.
G. BAKER, DECEASED.

MESSRS. PROTHEROE AND MORRIS are instructed by the Mortgagees to SELL by AUCTION on the Premises, the American Nursery, Windlesham, near Bagshot, Surrey, on WEDNESDAY and THURSDAY, February 23 and 24, at 12 o'Clock precisely, without reserve, 6000 young best named RHODODENDRONS, about 9 inches to 2 feet, mostly set with bloom-buds; thousands of KALMIAS, Ghent AZALEAS, SEDUMS, 1000 variegated HOLLIES, 3000 RETINOSPOREA AUREA, 10,000 LIGUSTRUM, &c., particularly worthy the attention of the Trade and large buyers, it being mostly young stock, and light of carriage. Luncheon provided on the premises.

Now on view. Catalogues had on the premises; and of the Auctioneers, 98, Gracechurch Street, E.C.

Re Videon.—Maida Vale, St. John's Wood, and WILLESDEN.

HIGHLY IMPORTANT to NURSERYMEN, FLORISTS, SEEDSMEN, and OTHERS desirous of securing a most Valuable Leasehold Property at the West End of London, universally renowned as one of the first Floral Establishments in the United Kingdom, patronised by Royalty, Nobility and the leading Gentry, held for a term of about forty years, at the exceedingly low ground rent of £42 per annum.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on MONDAY, March 13, at 1 for 2 o'Clock precisely, the valuable LEASE and GOODWILL of the old-established NURSERY GROUNDS, known as Videon's, Clarendon Nursery, Maida Vale, St. John's Wood, occupying the choicest position in the centre of the most aristocratic and *elite* of London Society, with 341 feet frontage, and containing about three-quarters of an acre of very Choice Land, with the elegant modern Circular and Iron Roof Conservatory and extensive Ranges of Glass Erections, Pits, &c., a Twelve-roomed Dwelling-house, Coach-house, Stabling, Offices, &c. Also the LEASE of the WILLESDEN NURSERY, Willesden, Middlesex, with the whole of the Greenhouses, &c.

Particulars and Conditions of Sale may be had, when ready, of the Auctioneer, 98, Gracechurch Street, E.C., and Leytonstone, E.

SALE THIS DAY, AT HALF-PAST TWELVE O'CLOCK.

Plants and Bulbs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on SATURDAY, February 12, at half-past 12 o'Clock precisely, first-class STANDARD and DWARF ROSES, specimen Conifers and Hardy Ornamental and Deciduous Trees and Shrubs, Fruit Trees, Herbaceous Plants, and an importation of Gladioli, Anemones, Ranunculi, Liliums, &c., for present planting.

On view the morning of Sale, and Catalogues had.

Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, February 14, at half-past 12 o'Clock precisely, a Collection of ESTABLISHED ORCHIDS, including—

Cattleya Eldorado splendens	Oncidium Marshallianum
Cypripedium Harrisianum	Cypripedium Dominianum
Batemannia Wallisii	Pescatorea Roezlii
Odontoglossum Roezlii	Lælia Walisii
Oncidium superbiens	Bollea Lalindei
Pescatorea Dayana	Cattleya Dowiana
Oncidium macranthum	Odontoglossum odoratum
Chysis Limminghei	Dendrobium Hookerianum
Oncidium crispum	Masdevallia Harryana
Vanda Denisoniana	Odontoglossum nævium

And various other choice species.

On view the morning of Sale, and Catalogues had.

Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, February 14, at half-past 12 o'Clock precisely, an Importation of a large quantity, in good condition, of SACCOLABIUMS, just received *ex* "Khiva" from Bombay; also a quantity of the true and exceedingly rare white flowering DENDROBIUM BARBATULUM; and from Brazil, a quantity of the attractive SOPHRONITES GRANDIFLORA; also an importation from Ecuador of the new and beautiful ODONTOGLOSSUM CIRRHOSUM, just received from South America, in good condition. This superb new Odontoglossum is a much more handsome species than the still rare O. nævium somewhat resembling it in colour and character, but infinitely superior. It produces fine strong branched spikes of blossom, each flower 3 to 4 inches across, while marked and spotted in the way of O. nævium, exceedingly chaste and beautiful. Also a large importation, in the finest possible condition, just received from Ecuador, of ODONTOGLOSSUM HALLII, many of them in huge masses, the largest and finest ever imported, with from twenty and thirty to forty bulbs each. This rare Odontoglossum is one of the most magnificent of the family. At the same time will be sold an importation from South America of a NEW ONCIDIUM, ONCIDIUM PENTADACTYLON. Plants of this Oncidium have not before reached this country alive.

On view the morning of Sale, and Catalogues had.

Periodical Sale of Poultry and Pigeons.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, February 15, at half-past 12 o'Clock precisely, 400 lots of choice POULTRY and PIGEONS, including Partridge Cochins, from Miss Dickenson; Brown-breasted Game and Light and Dark Brahmas, from Mr. Dowker; Jacobins, from Mr. Heath; Blue Owls, from Mr. Salter; and a great variety of other Poultry and Pigeons from the yards and lofts of well-known breeders and exhibitors; and a quantity of WIRE POULTRY HURDLES.

On view the morning of Sale, and Catalogues had.

Plants and Bulbs

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, February 16, at half-past 12 o'Clock precisely, first-class Standard and Dwarf ROSES, from well-known English and French Nurseries; CAMELLIAS, and other Greenhouse Plants, from Ghent; Pyramid, Standard, and Dwarf-trained FRUIT TREES, Specimen CONIFERS, and HARDY ORNAMENTAL and DECIDUOUS TREES and SHRUBS, HERBACEOUS PLANTS, and an importation of GLADIOLI, ANEMONES, RANUNCULI, LILIUMS, &c., for present planting.

On view the morning of Sale, and Catalogues had.

Lilies, Gladiolus, and Seeds.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, February 17, at half-past 12 o'Clock precisely, 6000 splendid BULBS of LILIUM AURATUM, just arrived from Japan in very fine condition, a great variety of other rare LILIES, and an immense consignment of CONIFEROUS TREE SEEDS, in large lots to suit the Trade.

On view the morning of Sale, and Catalogues had.

Important Sale of Imported Coniferous Tree Seeds

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, February 17, at half-past 12 o'Clock precisely, a large quantity of CONIFEROUS TREE SEEDS, just arrived, including:—

50 lb. Pinus Lambertiana	3 lb. Ceanothus integrinus
30 ,, ,, Fremontiana	3 ,, ,, prostrata
30 ,, ,, Sabiniana	10 ,, Arctostaphylos glauca
20 ,, ,, Llaveana	10 ,, Torreya californica
15 ,, ,, Benthamianum	5 ,, Oreodaphne californica
10 ,, ,, Jeffreyi	25 ,, Juniperus tetragona
5 ,, ,, Parryana	1 ,, Fremontia californica
5 ,, ,, tuberculata	10 ,, Eucalyptus globulus
20 ,, Picea grandis	5 ,, Libocedrus decurrens
5 ,, Sequoia gigantea	

On view the morning of Sale, and Catalogues had.

Rare Lilies.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, February 17, at half-past 12 o'Clock precisely, a quantity of the best and choicest known LILIES, in good flowering Bulbs, including the beautiful Lilium Hansoni, now offered for the first time; the rare Lilium Wallichianum, the exceedingly beautiful Lilium Krameranum; also good bulbs of the handsome Lilium Bloomerianum oscellatum, and some bulbs of Lilium tigrinum jucundum, a new Lily, which, although belonging to the "tigrinum" section, has glabrous leaves and green stems, with an entire absence of bulbils in the leaf-axils; flowers light cinnabar-red, marked in the lower half with black dots; and several thousand fine bulbs of Lilium auratum.

On view the morning of Sale, and Catalogues had.

Prize Amaryllis.

MR. J. STEVENS has been favoured with instructions from Charles Kieser, Esq., of Broxbourne, to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, March 9, at half-past 12 o'Clock precisely, his entire, extensive, and unique COLLECTION of AMARYLLIS SEEDLINGS, raised by him, which always gained the First Prizes at the Shows of the Royal Horticultural Society and Royal Botanic Society, and a number of First Class Certificates, and were so favourably noticed by all Floral Magazines.

May be viewed the morning of Sale, and Catalogues had shortly.

Pine-apple Nursery, Edgware Road.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions from Mr. J. Weeks to offer for SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., almost without reserve, about the MIDDLE of APRIL, the Valuable LEASE and GOODWILL of the PINE-APPLE NURSERY, Maida Vale, Edgware Road, W., together with Dwelling-house, Seed Shop, and Offices, and all the extensive ranges of Horticultural Buildings and Sheds.

Held:—As to part, for a term which will expire in 1909, at a Ground-rent of £45: and, as to the remainder, for a term which will expire in 1923, at a Ground-rent of £89. The Nursery has, within the last three or four years, been very greatly enlarged and improved, upwards of £10,000 having been expended in additions, improvements, and repairs; and it is considered in the Trade to be the most important Establishment of the kind in the World. It possesses an extensive connection both in the Nursery and Seed Trade, amongst the Nobility and Gentry and their Gardeners. Part of the purchase-money may remain on Mortgage.

Nurseries in the immediate neighbourhood of London are seldom valued by the acre: but this is an exception, as the Horticultural Buildings and Show-grounds cover about 2½ Acres, and form a most valuable property, and well adapted for a Skating Rink as well as a Nursery Business.

For further particulars apply to Messrs. KEARSEY, SON, AND HAWES, 35, Old Jewry, London, E.C.; and Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

Preliminary Notice.

MR. J. C. STEVENS has received instructions from Mr. Morse, of the "Original Nurseries," Epsom, to SELL by AUCTION, in the SPRING at his Great Rooms, 38, King Street, Covent Garden, W.C., the whole of his well grown EXHIBITION PLANTS, among which will be included magnificent specimens of Ericas, Azaleas, New Holland and Stove Plants, Orchids, Ferns, &c.

N.B.—The whole of the Plants are tied ready for exhibition purposes, and have been exhibited by Mr. Morse with great success at all the Metropolitan and principal Provincial Shows.

Catalogues will be ready shortly, and may be had of Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

Preliminary.—Sale of a very Valuable Collection of Specimen and Half-specimen STOVE and GREENHOUSE PLANTS, the whole of which have been exhibited.

ARTINGSTALL AND HIND (the surviving Partners of the late Firm of CAPES, DUNN & Co.) beg to announce that they have received instructions from Messrs. E. Cole & Sons to SELL by AUCTION, about the middle of April, at their Nurseries, Withington, near Manchester, the valuable Collection of EXHIBITION PLANTS.

Catalogues will be prepared in due course, and further information may be had by applying to the Auctioneers, 5, Princess Street, Manchester.

Southsea. (3128.)

In the choicest part of this fashionable Watering Place.

TO BE DISPOSED OF, a SMALL NURSERY, presenting a capital opening to an enterprising Florist. Comprises over a quarter of an acre of Land, having 100 feet frontage to a leading thoroughfare, covered with nine substantially built Greenhouses of modern construction, heated by hot water and planted with choice Vines in fine bearing condition. Rent, £100 per annum. Price £2000, stock optional. Apply to

PROTHEROE AND MORRIS, 98, Gracechurch Street, E.C.

Antibes.

FOR SALE, the BEAUTIFUL PROPERTY of the late Mons. G. THURET, the eminent French Botanist, measuring about 72 acres, at Cape Antibes, on the shores of the Mediterranean. The Garden contains an almost unrivalled collection of Exotic and other Plants, accumulated during the past fifteen years by the late owner, estimated at 3000 species, living in the open air. For full descriptions, with cuts, see *Gardeners' Chronicle*, December 4, 1869; January, 30; February 13, 20; April 17; and July 31, 1875. The House, containing the usual reception rooms and five bedrooms, is in good order; it commands the most lovely views of the Bay of Nice, the Esterelles Mountains, and the snowy range of the Alpes Maritimes. There is a large Kitchen Garden, also convenient Outhouses, a Cottage, and Stabling. Apply to

Dr. E. BORNET, Antibes; or to T. HANBURY, Palazzo Orengo, Mentone.

FOR SALE, a First-class SEED, CORN, and NURSERY BUSINESS, in a large town in the West of England. Established 21 years; nine years' Lease. Proprietor retiring. Apply

Mr. JOHNSON, Hurst & Son, 6, Leadenhall Street, London, E.C.

TO be SOLD, or LET for a term of years (on account of delicate health of Proprietor), a FREEHOLD NURSERY, with a long range of Glass—Vineries, Stove, Lights, &c., fitted up with every convenience for growing Plants and Cut Flowers for the Market. For particulars, address,

X. Y. Z., Toll Bar, Withington, Manchester.

To Florists, Walthamstow.

TO be LET on LEASE, in Summit Road, Walthamstow, a small compact NURSERY GROUND, of about half an acre, with Cottage and three large Greenhouses, one of which is 80 feet long, 14 feet wide, and heated by hot water. Immediate possession can be had. Rent £40 per annum. For further particulars, apply to

Mr. HOUGHTON, Solicitor, 15A, St. Helen's Place, London, E.C.; or to Messrs. PROTHEROE AND MORRIS, Auctioneers, 98, Gracechurch Street, London, E.C.

TO BE LET, Yearly, or on Lease, a compact NURSERY, FLORIST, English and Foreign FRUITERER'S BUSINESS, with good Trade; situate five miles South-East on the main road to London; excellent neighbourhood. Consisting of a First-class Shop, Conservatory attached, Plate-Glass Fronts, five Living-rooms, capital Stable, Offices, Sheds, long Span-roof Greenhouse and Stove, Span-roof Pits, &c., Heated with Hot-water, all of which have been recently built; together with two long slips of Land. Rental, £50 per annum. Stock (all saleable) and Fixtures at a valuation. Capital required, about £150. Apply to

Mr. EPPS, Landscape Gardener, Lewisham.

Billingshurst, Sussex.
To NURSERYMEN and OTHERS.

TO BE LET, with Immediate Possession, about SIX ACRES of NURSERY GROUND, adjacent to the Village and Railway Station. For particulars apply to

T. BAKER, Billingshurst, Sussex.

HORTICULTURAL BUILDINGS

COMBINING STRENGTH AND DURABILITY.

IRON AND WOOD CONSERVATORIES

OF THE MOST CHASTE AND ELABORATE DESIGN.

PLANS AND ESTIMATES FOR HORTICULTURAL BUILDINGS OF EVERY DESCRIPTION,

TO SUIT ANY GARDEN, LARGE OR SMALL,

Designed and Constructed with strict regard to Economy of Price, Good Workmanship, Durability of Material, and Practical Adaptation to their various Purposes.

ORMSON'S
PATENT UPRIGHT TUBULAR CORNISH BOILER.

For Opinions of the Press see former Numbers of the "Gardeners' Chronicle" and the "Florist and Pomologist."

Also a Variety of other good Boilers for Heating large and small quantities of Piping always kept in Stock.

HOT-WATER PIPES, BOILERS AND CONNECTIONS AT WHOLESALE PRICES.

PLEASE TO WRITE FOR ILLUSTRATED PRICED LISTS.

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Estimates given for Heating, on the most improved and scientific principles, all descriptions of Buildings.

HENRY ORMSON,

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STANLEY BRIDGE, KING'S ROAD CHELSEA, LONDON, S.W.

JEFFERIES' SEEDS—BEST SEEDS AT MODERATE PRICES

		s.	d.			s.	d.
The Best BEAN (Broad), Seville Long-pod	... quart	1	9	The Best LETTUCE, Jefferies' Silver Star	...packet	1	6
The Best BEAN (French), July Surprise	... pint	2	6	The Best LEEK, Monstrous Carentan	... ounce	1	6
The Best BORECOLE, The Major ...	...packet	0	6	The Best MUSHROOM SPAWN, Jefferies'	...bushel	5	0
The Best BEET, Jefferies' Red	... ounce	1	0	The Best MELON, Colston Bassett ...	...packet	1	0
The Best BROCCOLI, Leamington ...	...packet	1	6	The Best ONION, Banbury White Spanish	... ounce	0	6
The Best CAULIFLOWER, Snowball	„	2	6	The Best PARSLEY, Moss Curled	„	0	6
The Best CABBAGE, Jefferies' Champion	... ounce	0	8	The Best PARSNIP, Elcombe's Improved ...	„	0	4
The Best CAPSICUM, Prince of Wales	...packet	1	0	The Best PEA, Dr. Maclean	... quart	7	6
The Best CARROT, Early Stump Horn	... ounce	0	6	The Best TURNIP, Silverball	... ounce	0	4
The Best CELERY, Cirencester Red ...	...packet	1	0	The Best TOMATO, Early French Favourite	...packet	1	0
The Best CUCUMBER, Rollisson's Telegraph	„	2	6	The Best VEGETABLE MARROW, Chusan Green,	peck	0	6
The Best ENDIVE, New Intermediate ...	„	1	0	The Best POTATO, Snowflake	„	8	0

For particulars of the above and all other good Seeds, see our CATALOGUE, Price 6d., or Gratis to Purchasers.

JNO. JEFFERIES & SONS, SEED MERCHANTS, CIRENCESTER.

To the Trade and Others.

SURPLUS STOCK, CHEAP.

VINES, fruiting and planting; dwarf-trained PEACHES, NECTARINES, PLUMS, and CHERRIES; BLACK CURRANTS; LAURELS, Common, 3 to 6 feet; PRIVET, 3 to 5 feet; CHESTNUTS, Horse, 6 to 10 feet; Scarlet do., 6 to 8 feet; ELMS, 6 to 8 feet; MAPLES, Common, Norway, and Scarlet, 6 to 9 feet; POPLARS, Abele, Black Italian, and Balsam, 6 to 10 feet; Lombardy do., 6 to 12 feet.

The above are all clean and well grown. Price on application to

B. MALLER, The Nurseries, Lee and Lewisham, S.E.

DAVID LLOYD AND CO. (LIMITED).

CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.

Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following:—

J. T RUBERY, 88, Rumford Place, Liverpool.
SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
R. AND J. TAYLOR, 17, Vachel Road, Reading.

AGENTS WANTED.

CERASUS LAURO-CERASUS CAMELLIÆFOLIA (the Camellia-leaved Laurel).—This extraordinary and elegant Laurel was raised by Mr. Wood, of Woodbridge, in Suffolk, on whose behalf we are now offering it for the first time to the public. The leaves are light green, like the common Laurel, but differ from it in shape in being elegantly curled, like a Camellia leaf, or more closely resembling in form the beautiful Croton volutum.

The effect of the plant, grown as a pyramid and well pruned, is peculiarly striking, and if planted close as an edging plant, and pinched well back, it produces a very neat and pleasing appearance.

We propose to distribute this well-known variety at the following low prices, being desirous of seeing it largely used, as it deserves to be, for the purposes above-mentioned:—Per plant, 5s.; per dozen, 42s. Special offer to the Trade.

J. AND C. LEE, Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

Bulbous or Tuberous Begonia Seed.

L. PAILLET, NURSERYMAN, Chatenay, near Paris, offers for the present season, from his own growth, and cropped on the very best varieties known, seeds of the said BEGONIAS at the following rates:—Per packet containing 1 gramme, 6s.; per packet containing 5 grammes, £1 5s.

Seeds of CLEMATIS, cropped on the best varieties known, such as Helena, Sophia, Jackmanni, lanuginosa, Lady Bovell, magnifica, and others:—Per packet containing 30 grammes, 8s.; per packet containing 100 grammes, £1 4s. (One gramme represents 1-28th of an ounce.) CLEMATIS from Seed, fine mixed varieties of all kinds, 3 to 4 years old, £2 per 100.

N.B.—Orders may be addressed directly to L. PAILLET, or his Agents, Messrs. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C., where CATALOGUE and List may be had on application.

EWING AND CO.'S TRADE LIST, also TRADE and RETAIL LISTS of NEW ROSES for 1876, CLEMATIS, &c., are now ready. 10,000 GOOSEBERRIES, 6000 NUTS, strong, fine, and cheap; also ELMS, LIMES, CHESTNUTS, and other TREES for AVENUES, 9 to 20 feet, extra fine. LADY HENNIKER APPLE, 3s. 6d. and 7s. 6d. each. EWING'S MILDEW COMPOSITION, 1s. 6d. and 2s. per bottle.

Royal Norfolk Nurseries, EATON, near Norwich.

The New Japan Apple.

PYRUS MAULEI, is now distributing, at 21s., 15s., and 10s. 6d. each. It is as hardy as the common Apple, blossoms at the same time; the flowers are of a vivid orange-scarlet, fruit of a bright transparent lemon colour, very fragrant, about the size of the Golden Pippin Apple, which is produced in the greatest profusion.

The jam of this season has been tasted by some of the best judges and connoisseurs, and pronounced exquisite, and perhaps superior to any English or foreign fruit.

W. MAULE AND SONS, The Nurseries, Bristol.

TRY HOOPER'S SEEDS this year.

ALL CHOICE NEW POTATOS.

SNOWFLAKE,	EXTRA EARLY VERMONT,
EUREKA,	AND
ALPHA,	BROWNELL'S BEAUTY
LATE ROSE,	

All perfectly true; a fact of importance to Gardeners.

HOOPER AND CO. are prepared to meet all competition in price, as they have enormous Stocks.

HOOPER'S COVENT GARDEN Stores, London, W.C.

JOSEPH SMITH, JUN., has to offer the following, at per 1000:—

ALDER, 1 to 1½ foot, 10s.; 1½ to 2 feet, 12s.; 2 to 3 feet, 20s.; 3 to 4 feet, 28s. ASH, Mountain, 1½ to 2 feet, 15s.; 2 to 3 feet, 20s.; 3 to 4 feet, 25s.; 6 to 8 feet, 75s.; 8 to 10 feet, 110s.; 10 to 12 feet, 140s. BEECH, 1 to 1½ foot, 15s.; 1½ to 2 feet, 18s. BIRCH, 1 to 1½ foot, 15s.; 1½ to 2 feet, 18s. ELM, 1½ to 2 feet, 12s.; 5 to 8 feet, 45s. SPRUCE, 1½ to 2½ feet, 25s.; 2½ to 4 feet, 35s.; Scotch, 3 to 4 feet, 30s.; 3½ to 4½ feet, 35s. LARCH, 1 to 1½ foot, 15s. LIMES, 2 to 2½ feet, 45s.; 2 to 3 feet, 55s.; 3 to 4 feet, 75s.; 4 to 5 feet, 95s. MAPLE, Norway, 4 to 5 feet, 40s.; 5 to 6 feet, 55s.; 6 to 8 feet, 75s. OAKS, 2 to 3½ feet, 28s.; 3½ to 5 feet, 40s.; 5 to 8 feet, 60s. PINUS AUSTRIACA, 1½ to 2 feet, 20s.; 2 to 2½ feet, 25s.; 2½ to 3½ feet, 30s.; 3 to 4 feet, 40s. POPLAR, Black Italian, 2 to 3 feet, 20s.; Ontario, 2 to 3 feet, 20s.; 3 to 4 feet, 35s.; 6 to 8 feet, 90s. PRIVET, Evergreen, 9 to 15 inches, 8s.; 1 to 1½ foot, 10s.; 1½ to 2 feet, 14s.; 2 to 2½ feet, 15s.; 2 to 3 feet, 17s. QUICK, 2-yr., transplanted, 8s.; 3-yr., 10s.; 4 yr., 12s. SYCAMORE, 4 to 6 feet, 30s.; 5 to 7 feet, 35s. WILLOWS, of sorts. LAUREL, Common, 9 to 12 inches, 25s.; 1 to 1½ foot, 35s. COTONEASTER MICROPHYLLA, 1 to 1½ foot, 70s.; 1½ to 2 feet, 90s.; do. SIMONDSII, 2 to 3 feet, 50s.; 3 to 4 feet, 80s. RHODODENDRONS, &c.

CATALOGUE of General Stock sent on application.

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The most beautiful Seed Catalogue ever issued is

The Illustrated Guide for Amateur Gardeners,

Containing 100 pages of beautifully illustrated Letterpress and Original Articles for the successful Management of the Kitchen and Flower Garden throughout the year. Also, two superbly finished coloured Plates.

Universally admitted to be the Catalogue of the Season.

Price 1s.

Gratis and post-free to all intending Purchasers.

The finest late Broccoli in cultivation is

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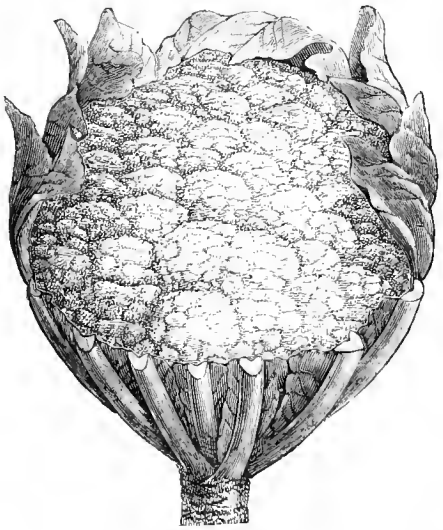

Daniels Bros.' King of the Broccolis. Per pkt., 1s. 6d.

The finest Cucumber grown is

Daniels Bros.' Duke of Edinburgh.

A magnificent variety, growing rapidly to the length of 30 to 36 inches, and of the most beautiful proportions and quality.

Per packet, 2s. 6d.

DANIELS BROS.
Seed Growers
NORWICH.

RICHARD SMITH'S FRUIT LIST contains a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c. Free by post for one stamp.

RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

ROBERT NEAL, JUN., and GEORGE NEAL, NURSERYMEN, Wandsworth Common, S.W., beg respectfully to call the attention of Gentlemen and Others who are planting this Spring to their large and varied stock of HARDY SHRUBS, FRUIT, FOREST, and ORNAMENTAL TREES, &c., which are now in fine condition for transplanting. An early inspection invited.

CATALOGUES may be had on application.

To the Trade.—Seed Potatos.

H. AND F. SHARPE are prepared to make Special Offers of SEED POTATOS grown on their own Farms from the finest selected stocks. Their List this season comprises all the English and American varieties worthy of cultivation. The prices will be found very moderate.

Seed-growing Establishment, Wisbech.

DAHLIAS, German, French, and Belgian; NEW GLADIOLI; LILIUM GIGANTEUM. Splendid seed, per 1000, 17s.; 500, 10s.; 100, 2s. 6d., free by post.

Our AUTUMN LIST will be sent, post-free, to all applicants.

ANT. ROOZEN AND SON, Overveen, near Haarlem, Holland.

Abies excelsa aurea (the Golden Spruce).

MESSRS. J. AND C. LEE beg to announce that they now intend to send out this magnificent tree. When planted in the full sunlight the whole tree is suffused with the richest gold. First-class Certificate from the Floral Committee of the Royal Horticultural Society. Well-established plants, 21s. each. A few of extra sizes, 31s. 6d. and 42s. each. The usual allowance to the Trade.

Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

Special Offer to the Trade for Cash.

JOSEPH GREEN, The Nurseries, Garforth, near Leeds, has to offer:—

10,000 GOOSEBERRIES, 60s. per 1000.
10,000 RASPBERRY CANES, 30s. per 1000.
5,000 CURRANTS, Red and White, 5s. per 100.
20,000 OAKS, English, 2 feet, strong, 20s. per 1000.
POTATOS, Myatt's Prolific, 20s. per 12 stones.
,, Haigh's Seedling, 20s. per 12 stones.
,, Real Imperial Ashtop, 20s. per 12 stones.
,, Belgian Kidneys, first-rate variety, 20s. per 12 stones.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000; and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.

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SELECT VEGETABLE and FLOWER SEEDS.—Amateurs and others who may be at a loss in making a suitable selection of Seeds for the Garden, will be greatly aided by referring to our Priced Descriptive CATALOGUE of VEGETABLE and FLOWER SEEDS for 1876, which will be sent free on application. All seeds delivered free of carriage as formerly.

THOMAS KENNEDY AND CO., Seed and Nursery Establishment, Dumfries, N.B.

New and Genuine Seeds Only.

Now ready, gratis and post-free,

BRUNNING AND CO.'S New Illustrated and DESCRIPTIVE CATALOGUE of the above for the present season, containing a selection of the choicest novelties, together with the most approved older varieties, profusely Illustrated, and contains a splendid Coloured Plate representing a group of choice Hybrid Gladioli, for the growth of which their Nurseries are noted. Forwarded post-free to all applicants.

ISAAC BRUNNING AND CO., The Yarmouth Seed Establishment, 1, Market Place, Great Yarmouth.

Important to Potato Growers.

PRINGLE'S HYBRIDISED POTATO SEED.—The extraordinary success which has attended Mr. Pringle in his attempts to improve this valuable esculent—which has resulted in the production of the SNOWFLAKE and ALPHA, and last, though not least, the RUBY—has encouraged him to still greater efforts in his favourite pursuit of hybridisation, and we have now the pleasure of offering a very choice strain of seed saved by him, which is the product of numerous hybridisations, variously operated, with every care during the past favourable season, between the above-named and many of the best new and old varieties in cultivation, both English and American, and includes every strain, which Mr. Pringle will himself sow the coming spring.

In order to encourage the cultivation of seedlings in this country, as well as in European countries, where the importation of the Potato is prohibited for fear of the Colorado Beetle, he has decided to offer his seed for sale, and has placed his entire stock in our hands, that all who desire may have an opportunity of giving it a trial, with the absolute certainty of producing varieties almost sure to equal, if not to excel, any hitherto offered. To prevent imposition, the seed will be put in sealed packets, with the *fac simile* of our signature upon each packet.

The following Testimonial from one of the most successful growers of Potatos in America, is a convincing proof of the wonderful productiveness of this seed:—"Last spring I obtained from C. G. Pringle some of his Hybridised Potato Seed; planted in the hotbed in the middle of April; transplanted to the open ground May 10, and I dug from one plant 10½ lb., and from another plant 6 lb. of large, smooth, handsome Potatos."

Price, per packet of 25 seeds, 2s. 6d.; five packets, 10s., with full directions for culture. All orders enclosing remittance in postage stamps or Postal Order on New York or London, will be promptly answered by return post, and guaranteed to reach the purchaser. Prices to the Trade upon application.

Please address B. K. BLISS AND SONS, Seed Merchants, 34, Barclay Street, New York, U.S.A. For sale by
Hooper & Co., Covent Garden Market, London, W.C.
James Carter, Dunnett & Beale, Holborn, London, W.C.
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Our new Illustrated POTATO CATALOGUE mailed free to all applicants.

AVENUE TREES.

SPECIAL OFFER DURING the MONTH.

LIMES, 5 to 6 feet, at £3 per 100.
LIMES, 10 feet, £7 10s. per 100.
HORSE CHESTNUTS, 9 to 10 feet, £6 per 100.
SCARLET HORSE CHESTNUTS (Standards), £10 per 100.
LOMBARDY POPLARS, 15 feet, £5 per 100.
LOMBARDY POPLARS, 20 ft., £7 10s. per 100.
ULMUS PLUMOSA, 10 to 12 feet, £10 per 100.

JOHN & CHARLES LEE,
ROYAL VINEYARD NURSERY,
HAMMERSMITH, near LONDON.

JOHN CATTELL

BEGS TO ANNOUNCE THAT HIS

ILLUSTRATED CATALOGUE

OF

KITCHEN GARDEN AND FLOWER SEEDS,

Including a Choice Selection of the latest Novelties for 1876,

Is now ready, and will be forwarded gratis and post-free on application.

NURSERY and SEED ESTABLISHMENT,
WESTERHAM, KENT.

WILLIAM FLETCHER,

OF THE OTTERSHAW NURSERIES, CHERTSEY,

Offers the undermentioned, in fine healthy condition, and very cheap. Prices on application.

PEACHES and NECTARINES, Dwarf-trained, per dozen or 100
MORELLO CHERRY, Dwarf-trained, per dozen or 100
THORNS, of sorts, Standard, per 100 or 1000
ALMONDS, Single, Standard, per 100
PEARS, Standard, per 100 or 1000
APRICOTS, Moorpark, Dwarf Maiden, per 100
MUSSELL STOCKS, per 1000
YEWS, Common, 2½ to 3½ feet, per 100 or 1000
CHESTNUTS, Scarlet and other, per 100
ABIES DOUGLASII, 3 to 4 feet, per 100 [or 1000
LAURELS, Common, 2 to 3 feet, and 3 to 4 feet, per 100
APPLES and PEARS, Maiden, per 100 or 1000
PRIVET, Common, per 1000
ROSE, General Jacqueminot, Dwarf, budded very low, per 1000
ROSES, Dwarf, of sorts, per 1000

RHODODENDRONS.

FINE NAMED LEADING KINDS, 1½ to 3½ feet, from £7 10s. to £10 10s. per 100.
HYBRID SEEDLINGS, leading kinds, 1½ to 3½ feet, from 50s. to 75s. per 100.
ANDROMEDA FLORIBUNDA, 1 to 2 feet, from 50s. to 60s. per 100.
KALMIA LATIFOLIA, 1 to 2 feet, from 50s. to 60s. per 100.
AZALEA PONTICA, 1 to 2 feet, from 60s. to 75s. per 100.
All the above are very fine bushy, well grown plants, and are offered very cheap to effect a clearance.

CHARLES NOBLE, BAGSHOT.

HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES,
4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,
KNAP HILL NURSERY, WOKING, SURREY.

Vegetable & Flower Seeds
Seed Potatos, Garden Tools &c
Superior quality, Carriage free
Descriptive Priced list post free,
James Dickson & Sons
"Newton" Nurseries and
108, Eastgate Street,
Chester.

THE KNAP HILL CYPRESS,

Cupressus Lawsoniana erecta viridis.

ANTHONY WATERER

Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices :—

3 feet high, 2½ feet in circumference, 30s. per doz.
4 feet high, 3 to 4 feet do., 42s. to 60s. per doz.
5 feet high, 4, 5 and 6 ft. do., 10s. 6d., 15s. to 21s. each.
6 and 7 feet high, 6 to 7 and 8 ft. do., 21s. to 31s. 6d. each.

No cuttings have been taken from the plants here referred to, which are simply perfect in growth and splendidly rooted.

KNAP HILL NURSERY, WOKING, SURREY.

DICK RADCLYFFE & CO.,

SEED MERCHANTS,
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PRIZE MEDAL SEEDS.

Complete Collections of Vegetable Seeds.

No. 1.	Suitable for a very Large Garden	£3	3 0
No. 2.	Suitable for a Large Garden	2	2 0
No. 3.	Suitable for a Medium sized Garden	1	1 0
No. 4.	Suitable for a Small Garden	0	10 6

Carriage free as per terms of Catalogue.

Choice Collections of Flower Seeds.

Containing only popular kinds of easy growth, which will make a pretty and effective show during the summer months. 5s., 10s. 6d., 21s., 31s. 6d. and 42s. each.
All Flower Seeds sent post-free.

For full Detailed List of Collections, see D. R. & Co.'s Illustrated Flower, Vegetable, Agricultural and Garden Requisite CATALOGUE, sent gratis and post free on application to

DICK RADCLYFFE & CO.,

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FRANCIS & ARTHUR DICKSON & SONS.

106 Eastgate St. &
The "Upton" Nurseries **CHESTER.**

Illustrated Catalogue of
Vegetable & Flower Seeds,
Post free on Application.
Quality unsurpassed.

SEEDS, SEEDS.—Samples of 1875 Harvest now on view; 5 per cent. discount on all orders of £1 and upwards.
Will be ready in a few days, the best Descriptive CATALOGUE extant
RANSLEY TANTON, Seed Merchant, Borough End, London Bridge, S.E.

To the Trade.
Home-grown GARDEN and AGRICULTURAL SEEDS.
H. AND F. SHARPE'S Wholesale Special Priced LIST of the above Seeds of 1875 growth is now ready; it comprises all the best sorts in cultivation. The quality is very fine, and the prices will compare favourably with those of other growers.
Seed Growing Establishment, Wisbech.

Standard and Dwarf Roses.
WHOLESALE and RETAIL.
H. LANE AND SON have a large stock to Dispose of. Special offer for quantities.
The Nurseries, Great Berkhamsted, Herts.

Fruiting Vines.
H. LANE AND SON have still some fine Fruiting Canes to offer, of their usual excellent quality. H. L. AND SON have always taken the First Prize for Vines in Pots at all the leading exhibitions. The Vine eyes, being taken from our own Vineries, may be depended on as true to name.
The Nurseries, Great Berkhamsted, Herts.

To the Trade.
DWARF ROSES, fine stuff on Manetti, of all the leading varieties, 35s. per 100, £15 per 1000. List of sorts on application.
GEO. COOLING, Nurseryman, Bath.

To Noblemen, Gentlemen, and the Trade.
LARCH FIRS LARCH FIRS.
JOHN PERKINS AND SON beg to offer fine transplanted LARCH FIR, 1½ to 2 and 2 to 3 feet. Samples and price on application to
52, Market Square, Northampton.

Black Italian Poplar.
BENJAMIN REID AND CO., Forest Tree Nurseries, Aberdeen, make special offer in quantity of first-rate plants of this rapid-growing and profitable Poplar, 4 to 5 feet and 5 to 6 feet, at 20s. and 25s. per 1000 respectively. This timber tree has realised 40s. per tree, forty years old. The Trade also supplied.

Fresh Seeds.
L. WINTER, NURSERYMAN, Bordighera, Italy, offers the following :—
ASTER ELONGATUS, charming rare plant, flowering from December to May, 1000 seeds, 6s.
DRACÆNA COLOCOMA, 1000 seeds, 8s.
" INDIVISA LINEATA, 1000 seeds, 5s.; 10,000, 40s.; 100,000, 350s.
LAURUS CAMPHORA, 1000 seeds, 20s.
PELARGONIUM VISCOSISSIMUM, very decorative plant, 1000 seeds, 10s.
Cash or good references.

Potatos, Potatos
ALFRED COCKERILL, SEEDSMAN, &c., 18, Drapery, Northampton, begs to offer the following varieties, which he can with confidence recommend as being true :—

Suttons' Red-skinned Flourball, Hundredfold Fluke, Red Kidney	Early Rose
	Rivers' Royal Ashleaf
	Myatt's Prolific
Paterson's Victoria	Bresee's Peerless
Oxfordshire Kidney	Bresee's King of the Earlies

Also several thousands of very fine 3 and 4-yr. old Crown Bob, and Warrington GOOSEBERRY and RED CURRANT TREES Prices on application.

SPECIAL OFFER.

FIR, Larch, 3-yr., 1½ to 2½ feet.; 4-yr., 2½ to 3 feet.
LAUREL, Common, 2 to 2½ feet.
" Portugal, 2 to 2½ feet.
ROSES, splendid Dwarf H.P.
YEW, Irish, 3-yr. and 4-yr.
THORN QUICKS, 2-yr., 3-yr., and 4-yr.
HAWS in large quantities.
All above held in large quantities; quality fine. For prices, &c., apply to
MICHAEL GRANT AND CO., Nurserymen, Newry, Ireland.

Superb Ranunculuses and Anemones.
C. TYSO, FLORIST, &c., Wallingford, offers choice assortments of these flowers, per post
RANUNCULUSES, 25 fine named varieties, 10s.
" 100 choice mixed, 15s. and 20s.
DOUBLE ANEMONES, 25 fine sorts, 6s.
TREATISE ON RANUNCULUS, 6 stamps.
" ON ANEMONE, 3 stamps.
GERMAN FLOWER SEEDS: Asters, Stocks, Zinnias, &c., 1s. and 2s. 6d. per assortment. ANNUALS, 12 choice sorts, post free, 2s. 6d.
Descriptive ROOT CATALOGUE gratis.

Genuine Seeds.
JOHN AND CHARLES LEE, Seedsmen to the Queen, invite attention to their new and extensive CATALOGUE of SEEDS for 1876. This Catalogue has been prepared with their usual care, and contains every novelty, whether home-grown or foreign, with the most minute and usefid descriptions of both Vegetable and Flower Seeds. The prices of every article are the very lowest, considering the first-rate quality of the various stocks offered. The long standing of the house of LEE (125 years) is a sure guarantee of the excellence of their seeds and the soundness of their trading. Catalogues may be had post-free on application.
Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

GLOXINIA CRASSIFOLIA GRANDIFLORA.

Magnificent strain, quite distinct. The leaves, which are very broad and fleshy, recurve so as to almost cover the pot; the flowers are much larger than in the old sorts, and of very brilliant shades of colour, and fine form. By sowing now on a gentle hotbed they may be had in bloom in autumn, and seedling plants always yield much the finest blooms. Erecta and horizontalis, separate or mixed.
Per packet, 1s. and 2s. 6d., stamps or Post-office Order.
Seed CATALOGUE, sent free by post.
JAMES TYNAN, 63, Great George Street, Liverpool.

Verbenas, Verbenas, Verbenas.

WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

Special Offer to the Trade, to Clear the Ground

MULBERRIES, Standard, the finest lot in England; also extra tall and strong Standard PEARS. Prices low. Apply to
BENJAMIN R. CANT, Nurseryman, Colchester.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.
Mr. WEBB, Calcot, Reading.

Genuine Garden Seeds.

JAMES DICKSON AND SONS beg to draw attention to their large and Superior Stock of VEGETABLE and FLOWER SEEDS, and will be happy to send Priced Descriptive CATALOGUE post free on application.
108, Eastgate Street, Chester.

To the Trade.

THE ALPHA POTATO, by the stone of 14 lb., bushel, or cwt., and most of the American and English varieties by the cwt., sack, or ton, including the Snowflake and Eureka, American Stocks direct from New York.
CHRISTMAS QUINCEY, Potato Grower and Merchant, Peterborough

VINES.—A superior lot of fine CANES of all the leading sorts for Planting or Fruiting; will carry several fine bunches this year; 5s. each. L. W.'s system of packing saves half the cost of carriage.
LEWIS WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

ENGLISH OAKS (Quercus pedunculata).—For Sale, 100,000 1-yr. Seedling English Oaks, strong plants. For price, &c., apply to
J. HARTNELL, Bailiff, Houghton Hall, Rougham, Norfolk.

NEW POTATO, PRINCE ARTHUR.—Undoubtedly one of the finest English-raised Potatos ever offered. See report, *Gardeners' Chronicle* Jan 8, 1876. A few Bushels are offered to the Trade, 20s. per bushel. List of Firms who have a supply will be published shortly.
J. JACKSON, Nursery, Kidderminster.

EARLY PEAS.—Ten Quarters of Sangster's No. 1 Improved, saved from the True Original Stock. Sample and price on application to
THOMAS PERKINS, 42, Drapery, Northampton.

FOR SALE, FIFTY SPLENDID HORSE CHESTNUT TREES, 14 to 16 feet high, suitable for Park or Avenue. Warranted to move well. Price on application to
WM. RUMSEY, Joyning's Nurseries, Waltham Cross, N.

DOWNIE AND LAIRD have to intimate that their new CATALOGUE of FLORISTS' FLOWERS is now ready, and may be had free on application.
Royal Winter Gardens, Edinburgh.

Notice.

SEED POTATOS.—Myatt's Prolific Ashleaf Kidney, warranted good, at £10 per ton; also some Early Rose, for Sale. Apply
WILLIAM FANE, Seed Grower, Bedford.

To the Trade.

EXTRA strong PEAR STOCKS, very fine.
JAMES DICKSON AND SONS, Newton Nurseries, Chester.

To the Trade.

MAIDEN APRICOTS, PEACHES and NECTARINES, magnificent trees. Price on application
JAMES DICKSON AND SONS, Newton Nurseries, Chester.

Helleborus niger (Christmas Rose).

J. VANDER SWAELMEN, NURSERYMAN, Gendbrugge, Ghent, Belgium, has a large and splendid stock, at 16s. per 100, or 120s. per 1000.
ACER NEGUNDO, for grafting this summer, 24s. per 1000.

PINES.—For Sale, a lot of clean Succession Pines and strong Suckers. For particulars, apply to Mr. THACKRAY, Dodworth Grove, near Barnsley.

To be Disposed of.

RASPBERRY CANES, Fastolf, about 6000, at 30s. per 1000. Apply to
Messrs. G. AND D. HIGGS, Heston, Middlesex

ASH.—About 300,000 1-yr. good Seedlings for Sale. For samples and price apply to
J. WOOBERRY, The Nursery, Billingshurst, Sussex

Rhubarb Roots—Rhubarb Roots

RHUBARB ROOTS—5000 strong Linnæus for Sale. Apply to
WM. EARL, Farmwood Nursery, near Newport, Mon.

Verbenas, Verbenas

JOHN SOLOMON offers mixed sorts of the above, good strong autumn-struck plants, in store pots, with plenty of good cuttings, at 1s. per store-pot, package included. Cash to accompany all orders.
Islington Nursery, Park Street, Islington, N.

TURF.—Several Thousands of good old Turf for Sale. Apply to
GARDENER, Belle Vue, Slough.

C. GUY AND SON beg to offer, for Cash, strong autumn-struck Plants of the following GERANIUMS:—Vesuvius, 8s. per 100; Maid of Kent, 8s. per 100; Mrs. Pollock (from single pots), 15s. per 100.
Monkton Nursery, Ryde, Isle of Wight.

NEW PEAR, "LUCY GRIEVE."—First-class Certificate; described in Dr. Hogg's new *Fruit Manual*, and in our own CATALOGUES.
E. G. HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, N.W.

The Quickest Growing Forest Trees.

POPLARS, the true Italian, same as extensively planted on the Estate of the Duke of Leeds and other large properties in Yorkshire; also strong well transplanted FOREST and ORNAMENTAL TREES of all kinds, cheap. Samples and prices on application.
W. JACKSON AND CO., Nurseries, Bedale, Yorkshire.

Lilium auratum.—Orchids.

W. F. BOFF offers magnificent Bulbs of LILIUM AURATUM, at 6s., 9s., and 12s. per dozen; one of each size post-free for 30 stamps. W. F. B. also offers ORCHIDS, good sorts, nice plants, at 21s., 30s., and 42s. per dozen.
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To the Trade.

SEAKALE, for planting, very fine, 30s. per 1000. 100,000 COMMON LAURELS of all sizes, from 1 foot to 5 feet, price on application.
WM. WOOD AND SON, Woodlands Nurseries, Maresfield, Uckfield, Sussex.

Rosss, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy.
The Ottershaw Nursery, Chertsey.

Apple and Pear Scions for Spring Grafting.

A. M. C. JONGKINDT CONINCK offers the above at low prices. A List of the sorts and prices on application.
Tottenham Nurseries, near Zwolle, Netherlands.

FRUIT TREES.—One of the largest stocks in the county, consisting of Standard and Pyramid CHERRIES, APPLES, PEARS, and PLUMS, from 70s. per 100. Also a large quantity of extra strong Standard and Espalier GREEN GAGES. Catalogues of
T. EVES, Gravesend Nurseries.

To the Trade.

ALDER, 1-yr. old.—Sample and Price on application to
JOHN BLAKE AND SONS, Dangan Nurseries, Summerhill, Enfield, Ireland.

The Best Lawn Mixture.

JAMES DICKSON & SONS' FINEST LAWN MIXTURE, for Forming New or Renovating Old Lawns, is VERY SUPERIOR to all others.
108, EASTGATE STREET, CHESTER.

VEITCH'S IMPROVED ASHLEAF KIDNEY POTATOS, warranted true. Cash price, 6s. per bushel.
G. STEVENS, St. John's Nursery, Putney, S.W.

Vesuvius—Special Offer.

JOHN SOLOMON offers the above, good strong autumn-struck plants, from thumb-pots, at 10s. per 100, £4 10s. per 1000, package included. Cash to accompany all orders.
Islington Nursery, Park Street, Islington, N.

The Most Beautiful new Pelargonium is

BEAUTY OF OXTON.
Price, 1 guinea each.
A pretty and charming novelty is the new double-flowering IVY-LEAVED PELARGONIUM, "KONIG ALBERT" Price 7s. 6d. each.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

EXCELLENT GARDEN SEEDS.
CHOICE FLOWER SEEDS.
SUPERIOR FARM SEEDS.
See Illustrated and Priced LIST, to be had free on application.
The superiority of these Seeds is proved by the numerous testimonies constantly received, and those who wish for a superior article should order at once of
HARRISON AND SONS, Seed Growers, Leicester.

Special Offer.

LAURELS.—A large quantity, suitable for Shrubberies, Game Covers, &c., in good condition for removal, 2 to 3 feet, 10s. per 100; 3 to 3½ feet, 13s. per 100, package free.
G. M. DARBYSHIRE, The Nurseries, Enderby, near Leicester.

GERANIUM VESUVIUS, autumn-struck, beautiful stuff, 10s. per 100
CALCEOLARIA AUREA FLORIBUNDA and GOLDEN GEM, autumn-struck, clean, healthy, and vigorous, 5s. per 100, 40s. per 1000, package free. "Cash," Post-office Order on Chester.
FIELD BROTHERS, Tarvin Road Nursery, Chester.

VEGETABLE and FLOWER SEEDS.—In these days of Handsome, Beautiful, and, we may add, Costly CATALOGUES, perhaps few can be satisfied now with a plain, common-sense one. To such, however, we shall be glad to forward ours, free on application. We undertake to supply really good Seeds at moderate prices.
W. P. LAIRD AND SINCLAIR, Nurserymen and Seedsmen, Dundee, Scotland.

To the Trade.

DWARF-TRAINED PEARS.—Five to Seven-branched Trees, extra fine, £5 per 100, the following varieties:—Beurré Clairgeau, Brown Beurré, Beurré d'Amanlis, Beurré Diel, Chaumontelle, Citron des Carmes, Fondante d'Automne, Glou Morceau, Jargonelle, Louise Bonne of Jersey, Marie Louise, Williams' Bon Chrétien, Winter Nelis.
JAS. GARAWAY AND CO., Durdham Down Nurseries, Bristol.

Maiden Nectarine and Peach Trees.

JAS. GARAWAY AND CO. offer the undermentioned varieties, clean, well-grown stuff, at 60s. per 100:—Elruge, Pine-apple, and Pitmaston Orange NECTARINES; Bellegarde, Barrington, Late Admirable, Noblesse, Royal George, and Walburton Admirable PEACHES.
JAS. GARAWAY AND CO., Durdham Down Nurseries, Clifton, Bristol.

To Market Gardeners and Others.

SUTTON AND SONS can offer

Suttons' Ringleader Peas	Veitch's Perfection Peas
Suttons' Racehorse Peas	Scimitar Peas
Little Gem Peas	Bedman's Imperial Peas
Fortyfold Peas	Harrison's Glory Peas

Suttons' Improved Early Champion Peas,
Of true stocks, at moderate prices for large quantities.
Reading, Berks.

Cheap Gladioli from Paris—Named and Seedlings.

LÉVÊQUE AND SON, NURSERYMEN, Ivry-sur-Seine, near Paris, have a large and splendid stock of good and strong flowering bulbs of GLADIOLI SEEDLINGS, equal in flower to the collection, at 8s. per 100, £3 per 1000, and £26 per 10,000—mixed, white, red, and pink; per colour, 12s. to 20s. per 100; yellow, 24s. per 100; per names (100), ten sorts, 8s. per 100; 25 sorts, 14s. per 100; in 50 or 100 sorts, the best, from £1 to £6, less or more, according to the novelty of the sorts. All good flowering bulbs. English cheque on London, or Post-office Order on Paris, accepted in payment.

SPECIMEN TREES and SHRUBS.
WELLINGTONIAS, 14 to 16 feet.
THUJA LOBBII, 12 to 15 feet.
LAURUSTINUS, bushy, 5 feet.
PICEA PINSAPO, SWEET BAYS, EVERGREEN OAKS, in pots.
CEDRUS ROBUSTA, &c., moved Spring, 1873. List sent.
CLARKE, Nursery, Wellington, Somerset.

Vines. Vines—Dwarf Roses.

PLANTING and FRUITING CANES of Black Hamburgh, Black Alicante, Lady Downe's, Muscat of Alexandria, White Lady Downe's, Madresfield Court, Gros Colman, Mrs. Pince, Trentham Black, Buckland Sweetwater, Foster's Seedling, Dr. Hogg, Muscat Hamburgh, Royal Muscadine, and West's St. Peter's, 2s. 6d. to 5s. each; Waltham Cross, 5s. to 7s. 6d. each; Pearson's Golden Queen, 21s. to 31s. 6d. each.
DWARF ROSES, extra strong, 6s. per dozen.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

HARDY AZALEAS for POTTING and FORCING.—Choice Belgic, American, and other hardy Azaleas, together with RHODODENDRON FRAGRANS and AZALEA AMŒNA are offered in nice compact plants, well set with bloom-buds, at 18s. and 21s. per dozen. Few plants are more acceptable for furnishing Cut Flowers or decorating the Conservatory throughout the early spring.
WM. MAULE AND SONS, The Nurseries, Bristol.

LILIUM AURATUM and all known Lilies, in superb Bulbs, at low prices.
DIOSPYROS KAKI—the grand new hardy Fruit. [&c.
HYPERICUM PATULUM—grand hardy Flowering Shrub;
See our advertisements in *Gardeners' Chronicle*, Nov. 19 and 26, 1875; also our CATALOGUE, free on application.
The NEW PLANT and BULB COMPANY, Lion Walk, Colchester.

JOSEPH SMITH, SEN., Tansley and Scotland Nurseries, near Matlock, Derbyshire, has for Sale:—
RHODODENDRON PONTICUM, 4-yr. old seedlings, not grown on bog, but on heath soil, with fine roots; stiff healthy plants, 3 to 4 inches high, 5s. per 1000. Also Hybrid Catawbiense, named sorts, 7s. 6d. per 1000; with transplanted, from 1 to 1½ foot up to 3 and 4 feet, at very low prices, which can be had on application.
OAKS, large quantity, 3 to 4 and 4 to 5 feet.
With a GENERAL NURSERY STOCK. Prices on application.

Chinese Arbor-vitæ.

FRANCIS R. KINGHORN has to offer at a low price a few hundreds of the above, from 3½ to 6 feet high, suitable for screens and hedges, all fine grown and well rooted.
Also VENN'S BLACK MUSCAT and DUKE OF BUCCLEUCH VINES.
Prices of each on application.
Sheen Nursery, Richmond, Surrey.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving Size, Price, Popular and Botanical Names, Derivations, Description, Form, Colour, Foliage, Growth, Timber, Use in Arts, Native Country and Size there, Situation, Soil, and other information, with copious Index of their many Synonyms. Free by post for six stamps.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

WM. PAUL AND SON
HAVE TO OFFER:—
SPECIMEN ROSES,
2 to 5 feet, 5s. to 10s. each, loaded with incipient flower-buds, suitable for exhibiting this year.
, Thousands of young plants, Standards and Dwarfs, at the customary nursery prices.
SPECIMEN CAMELLIAS,
3 to 10 feet, 21s. to 30 guineas each; handsome trees, with bloom.
, Thousands of young plants of all the best sorts, with bloom, at the ordinary nursery prices.
SPECIMEN FRUIT TREES.
Apples, Pears, Cherries, Plums, &c., pyramids, well set with fruiting buds, will bear a crop this year; 3 to 8 feet high, well balanced trees, 30s. to 60s. per dozen.
, Thousands of young trees of every kind at the usual Nursery prices.
SPECIMEN EVERGREENS and SHRUBS
of all the best sorts; acres to select from; 1000 species and varieties; individual prices on application.
SPECIMEN LIMES, 12 to 14 feet, 36s. to 48s. per dozen.
,, PLANES, 12 to 18 feet, 7s. 6d. to 15s. each.
,, ELMS, 12 to 14 feet, 24s. per dozen.
,, TURKEY OAKS, 12 to 14 feet, 36s. per dozen.
, A large collection of Avenue, Roadside, and Park trees, &c.
Priced descriptive CATALOGUES post-free on application.
IMPORTANT.—Observe the Christian Name—
WM. PAUL AND SON, Paul's Nurseries, Waltham Cross, Herts.

RARE LILIES, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., without reserve, on THURSDAY February 24, at half-past 12 o'Clock precisely, an extremely valuable Collection of mostly HOME-GROWN LILIUMS, consisting of all the rarer species.

Full particulars in next week's "Gardeners' Chronicle."

TWELVE ACRES OF ROSES,

Standards and Dwarfs, all the popular sorts; 80,000 choicest Tea-scented and Noisette Roses, in pots. Extra strong Hybrid Perpetual Roses, in pots for immediate forcing.

Climbing Roses in great variety. *See Descriptive Price List.*

FIFTY ACRES OF FRUIT TREES.

Standard and Dwarf-trained PEACHES, NECTARINES, APRICOTS, PLUMS, CHERRIES, PEARS and APPLES, very fine trees for walls.

Standard, Pyramid, Dwarf, Bush, and Cordon APPLES, PEARS, PLUMS, and CHERRIES.

VINES, Planting Canes, 3*s.* 6*d.* to 5*s.* each; Extra Strong Fruiting Canes, 7*s.* 6*d.* to 10*s.* 6*d.* each.

All the above of superior quality, perfect in form, roots, and health, and true to name.
See Descriptive Price List.

RICHARD SMITH,
NURSERYMAN and SEED MERCHANT, WORCESTER.

NOW READY,
NURSERY CATALOGUES FOR 1875-76.

WILL BE SENT POST FREE UPON APPLICATION.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),

EDINBURGH,

AND

54, BISHOPSGATE STREET WITHIN, LONDON, E.C.

BUSINESS ESTABLISHED, 1770.

TO THE TRADE.

WM. WOOD & SON

HAVE TO OFFER A REMARKABLY FINE STOCK OF

DWARF-TRAINED APPLES, PEARS, PLUMS, CHERRIES,
PEACHES, NECTARINES, and APRICOTS,

ALSO

FINE DWARF MAIDEN AND CUT BACK TREES OF THE ABOVE.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

COLLECTION OF TWELVE STANDARD ORNAMENTAL TREES, THE MOST BEAUTIFUL FOR GROUPING, 24*s.*, viz.:—Almond, Acer Negundo variegata, Double Scarlet Thorn, Elm elegantissima, Purple Beech, Silver Variegated Cornus, Silver-leaved Poplar, Scarlet Horse Chestnut, Scarlet Mountain Ash, Tulip Tree, Variegated Mahaleb, Weeping Silver Birch.

COLLECTION OF TWELVE OF THE MOST DISTINCT AND BEAUTIFUL HARDY CREEPERS and WALL SHRUBS for 15*s.*, viz.:—Akebia quinata, Berberidopsis corallina, Bignonia grandiflora, Clematis Jackmanni, Ceanothus Veitchii, Cydonia japonica, Escallonia macrantha, Jasminum revolutum, Lonicera aureo-reticulata, Magnolia grandiflora, Passiflora Colvillii, Wistaria sinensis.

COLLECTION OF TWELVE MOST EFFECTIVE AND ORNAMENTAL IVIES, the most useful of all Evergreens for Walls, Trellises, &c., 12*s.*

DECIDUOUS FLOWERING SHRUBS in Fifty beautiful varieties, 30*s.* per 100.

BEAUTIFUL HERBACEOUS AND ALPINE FLOWERING PLANTS. give no trouble, and are permanent in adorning Garden Beds, Borders, and Rockeries; 30*s.* per 100 varieties.

AVENUE AND ORNAMENTAL TREES,
For planting singly or in groups, of all forms and sizes; with many other large Evergreens for single specimens or screens.

RICHARD SMITH,
NURSERYMAN and SEED MERCHANT, WORCESTER.

Sow Now.

TANTON'S RELIANCE CUCUMBER, the best Black spine known, very Hardy and Prolific, for House or Frame. Grown extensively for the London Fish Salesmen. Twelve seeds 1*s.* 7*d.*, post-free.
RANSLEY TANTON, Seed Merchant, Borough End, London Bridge, S.E.

To the Trade.

CHARLES SHARPE AND CO.'S Wholesale CATALOGUE of Home-Grown Seeds, Agricultural Seeds, Kitchen Garden Seeds, Flower Seeds, Seed Potatos, is now ready, and will be forwarded post-free on application.
CHARLES SHARPE AND CO., Seed Growers and Merchants, Sleaford; and at 31, Seed Market, Mark Lane, E.C.

BEECH, BEECH, BEECH—2 to 3 and 3 to 4½ feet, well rooted, 7*s.* 6*d.* per 1000; also LAURUSTINUS, ARBUTUS, PORTUGAL LAURELS, PINUS INSIGNIS, CEDRUS DEODARA, THUJA GIGANTEA—all cheap.
SAMUEL BALE, Westacott Nursery, Barnstaple.

R. AND F. ALLUM, The Nurseries, Tamworth, have a fine stock of the following, which they beg to offer at very low prices:—Dwarf ROSES, very strong, of leading kinds; also half-standard Roses with good heads; strong RED CURRANT TREES, Standard MORELLO CHERRY TREES, Common LAURELS, and MYOSOTIS AZORICA, DISSITIFLORA and ALBA. Price on application. The Trade supplied

AVENUE TREES.

	Girth 4 ft. from ground.
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10 inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8 ,,
MAPLES, Norway, 12 to 16 feet high ..	5 to 8 ,,
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10 ,,
,, Scarlet, 10 to 14 feet high	8 to 10 ,,
,, Double, 10 to 14 feet high	8 to 10 ,,
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10 ,,
ELMS, 15 to 18 feet	7 to 9 ,,

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.
Knap Hill Nursery, Woking, Surrey.

Special Offer.

WILLIAM IRELAND, Pilton Nurseries, Barnstaple, has to offer the following:—
SPRUCE, 1½ to 2 feet, twice transplanted, 30*s.* per 1000.
THORN, Quick, 1½ to 2 feet, in drills, 8*s.* per 1000.
,, ,, 4-yr., transplanted, 2 to 3 feet, 15*s.* per 1000.
ABIES DOUGLASII, 4 to 6 feet, transplanted last April, 24*s.* per dozen
ARBOR-VITÆ, American, 6 to 8 feet, 50*s.* per 100.
AUCUBA JAPONICA, 2 to 3 feet, 40*s.* per 100.
BOX, Tree, in variety, 2½ to 3 feet, 30*s.* per 100.
COTONEASTER SIMONDSII, 2 ft., well rooted, 10*s.* per 100.
LAUREL, Portugal, 3 feet, 50*s.* per 100.
,, Common, 3 feet, fine, 20*s.* per 100.
LABURNUMS, 4 to 6 feet stems, with fine heads, 12*s.* per doz.
LAURUSTINUS, 2 to 3 feet, fine, 25*s.* per 100.
LIGUSTRUM OVALIFOLIUM, bushy plants, 2 to 3 feet, 30*s.* per 100.
PERNETTYA MUCRONATA and SPECIOSA, fine bushy plants, 40*s.* per 100. [per dozen.
PINUS INSIGNIS, 3 to 4 feet, transplanted last April, 24*s.*
ULEX HIBERNICA, fine plants, 1½ to 2 feet, 50*s.* per 100.
YEW, English, bushy, transplanted last spring, 3 to 4 feet, 50*s.* per 100.
CHERRIES, Standard, Black varieties, fine heads, 18*s.* per doz.
RHODODENDRONS, Standard, finest named varieties, stems 4 to 5 feet, fine heads, 7*s.* 6*d.* each.
DECIDUOUS FLOWERING SHRUBS, in great variety, large plants, 6*s.* per dozen.
The above, having been frequently transplanted, are fine plants and well rooted.
Pilton Nurseries, Barnstaple.

RICHARD SMITH'S SEED LIST

CONTAINS
THE BEST KINDS
OF
VEGETABLE
AND
FLOWER SEEDS,
and forwarded Free on application.

SMITH'S No. 1 COLLECTION	£3 3 0
SMITH'S No. 2 COLLECTION	2 2 0
SMITH'S No. 3 COLLECTION	1 11 6
SMITH'S No. 4 COLLECTION	1 1 0
SMITH'S No. 5 COLLECTION	0 15 0
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EXTRA LARGE COLLECTIONS from £5 5*s.* to 10 10 0	

The above are liberally and judiciously selected, and forwarded carriage free, excepting Nos. 5 and 6.

	Per packet.—*s.* *d.*
CUCUMBER, Smith's Fine Long Frame	1 0
,, Monro's Duke of Edinburgh	1 6
CAULIFLOWER, Veitch's Autumn Giant	1 6
CELERY, Sandringham Dwarf White	1 0
CABBAGE LETTUCE, Worcester Champion	1 0
COS LETTUCE, Worcester White	1 0
MELON, Eastnor Castle Green-flesh	1 6
,, Queen Emma	1 0
ONION, The Banbury	1 0
CYCLAMEN PERSICUM, splendid large flowering ..	1 0
POLYANTHUS, choice gold-laced	1 0
ASTER, Truffaut's French, 12 splendid colours	1 0
,, Victoria, 10 splendid colours	1 0
,, Betteridge's Globe Quilled, 12 splendid colours ..	1 0
GERMAN STOCK, large flowering, 12 splendid colours	1 0
PHLOX DRUMMONDII, 12 colours	1 0
PRIMULA, finest fringed .. .. .. 1*s.* 6*d.* and	2 6
CINERARIA, saved from finest flowers .. 1*s.* 6*d.* and	2 6
CALCEOLARIA, finest rich spotted .. 1*s.* 6*d.* and	2 6
CENTAUREA CANDIDISSIMA	1 0
PYRETHRUM, Golden Feather	0 6
ZINNIA, double, 8 colours mixed	0 9

The above Free by Post.
RICHARD SMITH, Seed Merchant, Worcester.

ECONOMY
IN
THE GARDEN.

Carter's

Five per cent. discount for Cash.

Carter's

POPULAR GUINEA COLLECTION
OF
VEGETABLE SEEDS
FOR ONE YEAR'S SUPPLY,

CONTAINS:—

2 pints Peas, Carter's First Crop
1 " " Advancer
1 " " Carter's Hundredfold
1 " " Superlative
1 " " Laxton's Supreme
2 " " Champion of England
1 " " Carter's Victoria
1 " " Carter's G. F. Wilson
1 " Beans, Mazagan
1 " " Improved Windsor
1 " " Giant Long-pod
1 " " best French
½ " " Scarlet Runners
1 pkt. Beet, St. Osyth
1 " Kale, Cottager's
1 " " Scotch Curled
1 pkt. Brussels Sprouts
1 pkt. Broccoli, Adam's Early White
1 " Cabbage, Carter's Matchless
1 " " Enfield Market
1 " " Tom Thumb
1 " " Savoy
1 " Couve Tronchuda
1 oz. Carrot, Early Horn
1 " " James' Intermediate
1 " " Selected Scarlet
1 pkt. Cauliflower, Carter's Mammoth
1 " Celery, Incomparable White
1 " " Carter's Crimson
2 oz. Cress, Plain
1 " " American
1 pkt. " Australian
1 " Cucumber, Carter's Champion
1 " " Stockwood
1 " Lettuce, Carter's Giant White
1 " " All the Year Round
1 pkt. Endive, French Curled
1 " Leek, Ayton Castle
4 oz. Mustard
1 pkt. Melon, Carter's Excelsior
1 " Onion, Giant Madeira
1 " " Nasbey Mammoth
1 " " Deptford
1 oz. Parsnip, Carter's Maltese
1 pkt. Parsley, Champion Moss Curled
2 oz. Radish, Early Short-top
1 " " Mixed Turnip
2 " Spinach, Summer
2 " " Winter
1 " Turnip, Carter's Six-weeks
1 " " Orange Jelly
1 " " Red American Stone
1 pkt. Tomato, Red
1 " Vegetable Cream, Moore's
2 " Pot Herbs

PACKING AND CARRIAGE FREE.

ORDERS EXECUTED THE SAME DAY WHERE PRACTICABLE.

FOR FULL DESCRIPTIONS SEE

CARTER'S ILLUSTRATED VADE MECUM for 1876.

The Handsomest Seed Catalogue of the Year, containing Five Coloured Illustrations.

BETTERIDGE'S PRIZE EXHIBITION ASTERS.

NEW VARIETIES OF 1876 NOW BEING SENT OUT.

MR. BETTERIDGE

HAS PLACED IN OUR HANDS FOR DISTRIBUTION

The ENTIRE STOCK of these SUPERB NOVELTIES.

They have been exhibited at all the great Metropolitan and Provincial Shows of the past autumn, securing in every instance the highest Prizes and Certificates of Commendation from the Judges, and universal admiration from every lover of this popular flower. We also quote the following opinions of the Horticultural Press:—

From the "GARDEN," *September* 25, 1875.

"Beautiful blooms of Betteridge's new Asters have been sent to us by Messrs. Carter & Co., of High Holborn. One, named Purple Prince, has very large finely-formed deep purple blooms, 3 *inches in diameter*; and Prince of Novelties has rosy flowers, with a clear white centre."

From the "JOURNAL OF HORTICULTURE," *Sept.* 30, 1875.

"BETTERIDGE'S QUILLED ASTERS.—We have received from Messrs. James Carter & Co. a box of the above Asters, which, for distinct and varied colours and perfect form of the flowers, it would be difficult to excel. Each bloom is semi-globular in shape, smooth, and exceedingly full of florets, having an elegant fringe of guard petals. These are excellent examples of an admirable strain."

From the "GARDENERS' CHRONICLE," *Sept.* 25, 1875.

"The flowers of Betteridge's New Asters were of first-rate quality."

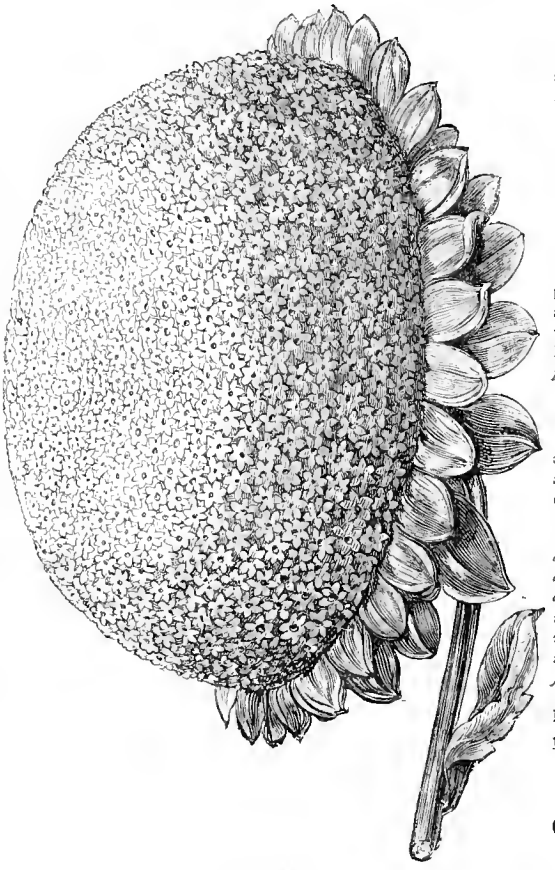
From the "GARDENERS' MAGAZINE," *Sept.* 25, 1875.

"Messrs. James Carter & Co., of High Holborn, have forwarded a box of Aster blooms, grown from English-raised seed, the quality of which is so fine that we are compelled to ask the question whether it is any longer needful to import seed from the Continent."

For full descriptions see

Carter's Illustrated Vade Mecum
For 1876.

Post-free, 1s. Gratis to Purchasers.



The most beautiful Aster ever offered.

SNOWFLAKE or SNOWBALL.

A grand Aster: the flowers large and full. Colour pure snow-white. Awarded a Certificate of Merit at the Alexandra Palace, August 24, 1875. *Per packet*, 2s. 6d.

PURPLE PRINCE.

Flowers of extraordinary size and substance. Colour rich velvety purple. Unquestionably one of the finest quilled Asters ever introduced. *Per packet*, 2s. 6d.

PRINCE of NOVELTIES.

This splendid novelty is strikingly distinct, and must prove a great acquisition: the outer ring of the flowers is of a bright crimson-lake, the inner ring splashed irregularly with rose; centre pure white. Awarded a Certificate of Merit at the Alexandra Palace, August 24, 1875. *Per packet*, 2s. 6d.

PRINCESS ALEXANDRA.

A greatly improved form of "Duchess of Edinburgh," already in cultivation. The flowers are of immense size and substance. Colour bright crimson-rose, pure white centre. *Per packet*, 2s. 6d.

In general form, substance, and size of flower (many exceeding 3½ inches in diameter), combined with brilliant and unique colouring, the above are far in advance of any of Mr. Betteridge's previous introductions, whilst their neat and compact habit of growth (resembling the Bouquet varieties), stamps them as being quite a distinct and greatly improved class of these charming summer and autumn flowers.

Price per packet (each variety), as above 2s. 6d.
Price the Collection of four varieties .. 6s. 6d.

Caution.—*All Packets of the above Novelties will be sealed with our Registered Trade Mark.*

We offer upwards of Five Guineas in Prizes for these New Asters, to be awarded at the September Meeting of the Royal Horticultural Society. (See Schedule.)

Carter's THE QUEEN'S SEEDSMEN, 237 & 238, HIGH HOLBORN,
LONDON, W.C.

SUTTONS' CHOICE SEED POTATOS

FOR PLANTING.

The Finest Potato at present known,

SUTTONS' NEW LATE KIDNEY,

"MAGNUM BONUM."

A splendid New Late Kidney, which has hitherto been perfectly free from disease. The tubers are large, of excellent shape, and are produced in great abundance; in fact, it is the heaviest cropping English Potato we have ever seen, and the flavour is most excellent. The erect habit of growth and colour of flower are perfectly distinct from all other Kidney Potatos. The stock is entirely in our possession.

Per gallon, 6s.; peck, 10s. 6d.; bushel, 35s.

Opinion of SHIRLEY HIBBERD, Esq., *Stoke Newington, Nov. 8, 1875.*

"Your new Magnum Bonum Potato singularly combines beauty of appearance with high quality, and I believe it will prove the most generally useful variety ever put into commerce."

SUTTONS' IMPROVED EARLY ASHLEAF.

This is a splendid stock, and an entirely new selection from the old Ashleaf. It is far more robust and a heavier cropper than any of the earliest Ashleaf varieties, but at the same time is shorter in haulm, and is thus peculiarly valuable as a forcing Potato. Our stock is very limited, and early orders are necessary. Height, 6 to 9 inches.

Per peck or stone of 14 lb., 6s.; per bushel of 56 lb., 21s.
Lowest price per sack or ton on application.

EARLY HAMMERSMITH.

Messrs. Lee, the raisers of this fine Potato, have again placed their stock in our hands for distribution, reserving only sufficient for their own retail trade. It is a valuable new and distinct Potato, and must eventually supersede the old-fashioned Ashleaf, possessing, as it does, most superior qualities. It is very much larger, produces well-nigh double the crop, is of more robust constitution, fully equal in flavour, and quite a week earlier. The haulm being very short it is especially adapted for forcing. The tubers have a handsome appearance, with clear white skin and remarkably shallow eyes. It cooks very flowery. The following is the opinion of a well-known authority:—"This is a first-rate Potato; early, good flavour, and an excellent cropper." Stock very limited. Height, 9 to 12 inches.

Per peck or stone of 14 lb. 5s.; per bushel of 56 lb., 17s.
Lowest price per sack or ton on application.

THE NEW AMERICAN POTATO, EARLY SNOWFLAKE.

SUTTON & SONS,

Having carefully tested this fine Potato in their Trial Grounds two years since, were among the first to recommend it as the best of all the American varieties—an opinion which has been confirmed by all practical gardeners. They have imported largely, and can offer fine tubers as follows:—

Price, per bush., 35s.: per peck, 10s. 6d.; per gal., 6s.

The value of planting imported tubers cannot be over-estimated, and the following extract from the *Gardeners' Chronicle*, January 8, 1876, is worthy of attention:—"American Potatos rapidly degenerate after importation to this country. Newly imported seed produces wonderful crops."

For further particulars of the above and other choice varieties see

"SUTTONS' DESCRIPTIVE LIST"

OF

CHOICE SEED POTATOS,

Gratis and Post-free on application.

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

SATURDAY, FEBRUARY 12, 1876.

ROYAL HORTICULTURAL SOCIETY.

REPORT OF THE COUNCIL TO THE ANNUAL GENERAL MEETING, ON FEBRUARY 8, 1876.

THE most important work which the Society has been able to accomplish for the advancement of the science and practice of horticulture during the past year will be found in the report of the Chiswick Board of Directors. The Council congratulate the Fellows on the useful work which has been done in the garden at Chiswick in the way of determining many new varieties of fruits and vegetables, and in testing the merits of a large variety of the new flowers which are employed for the adornment of gardens. They especially call their attention to the important discovery that has been made by Mr. Worthington G. Smith, a member of the Scientific Committee, who has detected the resting-spores of Peronospora infestans, or Potato blight, the particulars of which were first given to the world at the meetings of this Society. By this valuable discovery light has been thrown upon the life and economy of this national scourge, which, it is hoped, will enable physiologists to suggest a means to check, and ultimately destroy, a disease which has for so many years interfered with the production of this important article of food.

The three committees entrusted with the scientific and practical operations of the Society have regularly met during the year, and the reports of their proceedings have been published in the current horticultural periodicals. The low state of the Society's finances led some time ago to the discontinuance of the *Journal*, and, as a medium of communication between the Fellows as to the result of the Society's operations, recourse has been had to existing publications. The Council regret that they have not been able to commence the republication of the *Journal:* and, should there be such an improvement in the revenue as to warrant them in doing so, they will lose no time in reissuing it.

In the early part of the year it was found impossible to adhere to the schedule of prizes offered at the flower shows at South Kensington, and the Council then in office announced the necessity of reducing the prizes by 50 per cent. This proceeding dissatisfied many of the exhibitors, who thereupon refused to send plants, and the exhibitions suffered greatly in extent and beauty. This falling off was apparent at all the early shows, which, in consequence, did not attract as many visitors, or yield as much money at the gates, as was expected.

On the reconstruction of the Council, in June last, the exhibitors who had held aloof from previous shows determined to make a gratuitous display, in order to prove they were not influenced alone by the offer of prizes, and there was held, on July 21, under the large tent, one of the most magnificent shows of the kind ever seen in the gardens at South Kensington. To those gentlemen who came forward so liberally to support the Society, at a time when it was surrounded with many difficulties, the best thanks of the Fellows are due.*

The Council would remind the Fellows that to keep up the horticultural attractions of the gardens, as well as to promote and encourage the science and practice of horticulture, it is necessary to maintain these horticultural exhibitions; and to do this, as well as to provide for the general working expenses of the Society and the interest on the debt, it is necessary that the revenue be increased much beyond the amount ever yet reached. The income of the Society has never, without extraneous assistance, been sufficient to meet the expenditure. During two years, when the International Industrial Exhibitions were held in the adjoining buildings, and certain concessions were made to the Society by Her Majesty's Commissioners, the revenue was sufficient for all requirements; but in no other year has it ever been so. It was, therefore, with the object of raising the revenue that the Council most unwillingly felt it their duty to revise the existing privileges of Fellows, and to reconstruct them on such terms as they considered would eventually attain the desired result.

It will be seen on reference to the balance-sheet that the debts bequeathed by former Councils still remain at nearly £5000, and although the expenditure of the year has been lessened by £800, it has been mainly at the cost of the prize list.

The agreement with Her Majesty's Commissioners has not been completed, but the terms, as previously announced, have been arranged, and the Council rely upon the co-operation of the Fellows for an increase of income to enable them to carry out the objects of the Society, and to maintain in efficiency and attractiveness the gardens both of Chiswick and South Kensington.

* The most extensive exhibitors were Messrs. Veitch, Bull, Williams, Lee, Turner, Wills, Rollisson, W. Paul, Paul & Son, E. G. Henderson, Denning, Parker, Osborn & Son, Cutbush & Son, Jackson & Son, Carter & Co., and many others.

REPORT OF THE ACCOUNTANTS.

8, Walbrook, London, E.C., January, 1876.

To the Council of the Royal Horticultural Society, South Kensington, S.W.

Gentlemen,—We beg to forward the balance-sheet and revenue account of your Society for the year ending December 31, 1875, showing a balance in favour of the Society of £850 10*s.* 2*d.* We should, however, point out that this favourable result is mainly produced by crediting revenue with £786 16*s.*, being the proportion for the year chargeable (under your agreement with the Royal Commissioners) to the life composition account, the position of which latter account was explained in our report of last year. The actual result of the transactions of the year is therefore (after crediting revenue with £207 18*s.* on account of annual subscriptions in arrear) a balance in favour of the Society of £63 14*s.* 2*d.* This result, however, compares favourably with that of 1874, as in that year, after crediting revenue with £790 6*s.*, proportion of life composition account, there was a balance against the Society of £223 15*s.* 3*d.* Since completing the balance-sheet and account, we have been informed by the assistant-secretary that there are still some items, amounting to about £100 (the accounts for which had not been sent in), to be charged to the debit of revenue, which sum must be taken into account in considering the balance in favour of the Society.—We are, gentlemen, yours, faithfully, *C. F. Kemp, Ford & Co.*

REPORT OF THE CHISWICK BOARD OF DIRECTION.

The Board of Direction at Chiswick report that a great deal of good and important work has been carried on during the past season.

That the crops of fruit have been plentiful, but, owing to the great want of sunlight and extreme moisture, not only has the flavour been very inferior, but many varieties have decayed prematurely, an observation which seems to apply very generally throughout the country.

The matter of the greatest interest which came before the Board, as regards the fruit and vegetable department, after the adjudication with respect to the trials of Onions, Celeries, and the more perfect definition of the several varieties of Currants, of which the Society possesses a very complete collection, is the discovery, which has so long been a desideratum,

of the resting-spores of the Peronospora, to which the formidable Potato murrain is due.

Some peculiar features soon manifested themselves in a large collection of American varieties of Potato, which are under experiment. It was not, indeed, the first time that these features had been observed, for they were well-known to Mr. Barron, who had remarked that they were far more pronounced with respect to English grown sorts [? "sets"] than with those which were immediately imported from America; indeed, these latter seemed free from disease. During the early part of this year the disease was so prominent, germinating in the spring, and we trust that Mr. Smith will add to the honours which he has so well merited that of ascertaining this closing point in the life history of this destructive pest.

POMOLOGICAL DEPARTMENT.

The crop of fruit of all kinds has been unusually abundant in the garden this year, and many varieties which have not hitherto fruited have been observed, and descriptions of them have been made. An opportunity has also been afforded for correcting erroneous nomenclature and of ascertaining synonyms.

FIG. 34.—NATURAL GROWTH OF KNIGHT'S MONARCH PEAR, A FEW WEIGHTS ATTACHED TO BRING THE BRANCHES DOWN.

not only in the garden, but generally over the country, as to call more general attention to the subject. It was, indeed, intimated that the matter was exaggerated, or, indeed, was altogether denied; but the slightest inspection showed that there was enough for serious inquiry.

Some peculiar bodies had been observed in the blackened leaves, which were supposed to belong to some species of Protomyces, but Mr. Worthington Smith at once conceived that they might be the long-sought resting-spores, and carried out the matter so perseveringly that he arrived at complete certainty on the question. It remains only to be observed how these resting-spores may comport themselves when

The varieties of Currants have for many years been very much misunderstood, great confusion having existed as to their nomenclature and identification. A collection of as many kinds as it was possible to obtain, both at home and abroad, was secured, and the number of reputed kinds planted in the garden amounted to fifty. When these were examined, and compared one with the other, it was found that there were only sixteen distinct, twelve of them being red, one flesh-coloured, and three white.

One of the largest experimental trials of Onions which has ever been undertaken was carried out very successfully. One hundred and fifty-eight samples were sown under ninety-eight different names. These were all carefully compared and referred to their proper sections, whereby the large collection of reputed varieties was reduced to twenty. A full report of this trial bas been already published, and as this was confined to the spring-sown sorts, the remainder, consisting of the Tripoli and Silver-skinned sections, are now under trial as autumn-sown Onions, and will form the substance of a future report.

A trial of all the varieties of Celery was also very successful, and out of forty-seven sorts that were sown twenty proved to be distinct. A full report of this trial has also been published. An attempt was made to obtain a full report on the numerous varieties of the Kidney Bean, but the season being cold and ungenial this proved a failure, and another trial will be made this year.

An attempt was also made to investigate those varieties of Potatos that had not been included in the former trials, but the virulent attack of the Potato disease to which they were subjected rendered the experiment a failure.

A complete collection of all known varieties of Cauliflower has been sown for trial during the present season.

The distribution to the Fellows consisted of 965

packets of cuttings of fruit trees, comprising Apples, Pears, Plums, Cherries, Vines and Figs, and of 17,062 packets of vegetable seeds.

The important discovery of the resting-spores of the Peronospora infestans in the tuber of the Potato will no doubt be referred to by the Botanical Director. It was found that the disease this year attacked chiefly the new American varieties, grown from home-grown seed of the second year after their introduction; and it has been further remarked that all those new American Potatos which produce such enormous crops from newly imported seed rapidly degenerate year by year after their introduction, and that the produce gradually becomes smaller and of inferior quality.

The extensive collection of Strawberries which was planted for the purposes of trial, promises to fruit well this season.

FLORAL DEPARTMENT.

The work of the past year in the Floral Department has been in some degree crippled by the diminished facilities granted to the Superintendent. Nevertheless, under the circumstances, some very good work has been accomplished.

The trials of plants and flowers constitute some of the most important work done in this department—work which is of much public utility, since the experienced judgment of the Floral Committee, to whose labours, for many years, the Society owes so much, is brought in this way to bear upon subjects which are all grown under identical conditions. The conclusions arrived at by the committee form, consequently, a tolerably safe guide in the selection of subjects adapted for the climate of London, and for districts in which the climatal and geological conditions are in any degree similar. During the spring months the committee examined the collection of bedding Violas which Mr. Barron had got together, consisting of some eighty-two varieties, and amongst them seventeen certificates of merit were distributed. Later on, a collection of Fuchsias, grown alike, in comparatively small pots, and consisting of 125 varieties, underwent the scrutiny of the same body, and on this occasion twenty certificates were awarded. These were cultivated under glass. In the open-air beds a large contribution of Zonal Pelargoniums, from the principal nurserymen and florists, and consisting of 350 varieties, was planted out, and amongst them seventeen certificates were distributed. Besides these subjects considerable collections of Phloxes and of Pentstemons were planted for inspection and comparison.

The plants prepared at Chiswick for the decoration of the garden at South Kensington always draw heavily on the labour and other resources of that establishment. During the past year there have been provided in this way, and devoted to this object, 12,000 flowering plants for the ornamentation of the conservatory, and 52,000 for bedding-out in the garden.

The conservatory plants, calculated at the low price of 1*s.* each, give a return of £597 16*s.*; and the bedding plants, valued at from 1*d.* to 4*d.* each, a return of £457 17*s.*, making a total of £1,055 13*s.*—the whole expenditure on maintaining the garden during the past year being only about £1,500.

The following are the subjects which have been distributed amongst the Fellows from this department, namely:—Plants of various kinds, 2000; cuttings of various kinds, 523; packets of seeds, various, 31,632. The Directors have again to express their regret that the slender means at their disposal does not permit them to engage in those experiments in scientific floriculture and horticulture, and in those illustrations of modern practice, for the proper and efficient carrying forward of which, as being the national exemplar, the public has a strong claim upon the best efforts of the Society. *M. J. Berkeley, R. Hogg, T. Moore.*

FALLACIES IN FRUIT CULTURE.

THE paper read by Mr. Shirley Hibberd at the Society of Arts on Wednesday last, on the "Cultivation of Hardy Fruits," was comprehensive in its scope, but was mainly directed to the reconsideration of certain points wherein the cultivator, in Mr. Hibberd's opinion, puts himself into conflict with Nature, very much to his own disadvantage. He began by saying, that during the past twenty-five years he had carefully tried and compared all the best known modes of fruit-tree management, and had but slowly, and in some cases at considerable cost, arrived at the conclusions he proposed to set before his hearers. It was a constant source of complaint that the home produce of fruit was insufficient to meet the wants of the people; but it rarely occurred to the so-called "practical" pomologists that the rules of action they prescribed, which were very clearly and definitely set forth in the books, were directly opposed to the object in view, so that fruit culture might be described as a system of preventing fruit trees bearing fruits. On such a subject so much might be said that he must endeavour hastily to direct attention to those matters which he considered of greatest importance, and especially those which had become established as subjects for erroneous teaching, tending of course to injurious practice.

To go to the root of the matter, let us look at the roots of a fruit tree. The cultivator who follows orthodox teaching will give the preference to starving stocks, a starving soil, and a starving method of management. His object will be to produce the smallest tree possible, and should it, in spite of his starving management, exhibit some degree of vigour, he will take it up and chop off the roots to throw it back into its former state of starvation. There has for years past been a run on what are called "dwarfing stocks," which, being deficient of vigour, starve the trees that are grafted on them, and the consequence is that the trees have become toys, and when one of them produces a dozen Apples or Pears, it is talked of as a prodigy of fertility. It is not enough, however, to starve the tree below ground by a ridiculous restriction of root action, but it is starved above ground by a similarly ridiculous restriction of leaf action, for the cultivator is encouraged to pinch back the young shoots at least three times during the summer, and if, in spite of this tormenting treatment, the tree should make a few good shoots, they are cut hard back at the winter pruning. Consider, said Mr. Hibberd, the case of a tree so treated. Its whole energies are devoted to the repair of its losses above and below ground. Every time it is cut or pinched back it makes a fresh effort to produce useful wood, and in this business is arrested by the hand of the cultivator, who professes to desire fruit, but labours might and main to render fruit impossible. It is quite true that trees so treated do produce fruit, but it is long in coming, it comes in handfuls where it should come in bushels, and it costs in labour and land and time fifty times its value in the market. It should be remembered that the Oak is a fruit tree, and its acorns have a money value. But nobody searches after a dwarfing stock for the Oak tree, nobody proposes to root-prune the Oak, nobody above the status of a lunatic practises pruning and pinching with a view to augment the production of acorns. Then why starve and torment Apple, Pear, and Plum trees, the fruits of which are so much more valuable, when by leaving them alone they are certain to bear sooner and more abundantly, and last the longer, and from first to last present the beautiful appearance that every tree has when the soil and climate suit it, and it suffers no mutilation at the hands of man? Every tree, no matter what its kind, tends naturally to beauty and productiveness. An Oak tree produces acorns, a Beech tree Beech nuts, an Apple tree Apples, and man can do but little to hasten or augment production beyond selecting the best sorts and planting in the best soil; and when soil and climate are known to be unfavourable, it will be prudent at the outset to consider whether it will pay to plant the tree at all.

It will be observed that many kinds of fruit trees grow with great vigour when young, and throw up crowds of long rods that perplex the amateur. Now it is particularly worthy of observation that those long rods have required the sunshine of a summer to produce them, but they are now prepared to progress towards fruit bearing, and if left alone will become studded with fruit spurs, and ultimately clothed with fruit. By cutting away these long rods you waste the sunshine of a summer; you throw away the work of a year; you compel the tree to make another effort *ab initio* for the production of another set of long rods, instead of employing its long rods as the foundations for fruit spurs. You simply engage in a warfare with Nature, and we know full well who is likely to be beaten in such a case. But you feel you must do something with those long rods, and I advise that you delude them into the idea that they are bearing fruit. Many years ago I adopted a practice of attaching pebbles and other such handy weights by means of string to my long rods, so as to draw them gently to a horizontal position, and I found this very simple mode of procedure promoted fruit production to such an extent that the long rods became like ropes of Onions. I call this "pulley pruning," said Mr. Hibberd, and I can recommend its adoption with all the long-rod growers, such as Knight's Monarch Pear (see p. 202), and all the rampant growing Plums, for it comes nearer to Nature's method of pulling the branches down with a weight of fruit, and it checks exuberant growth without doing violence to the tree, and is much less trouble than actual mutilation.

In illustration of these remarks, attention was directed to some interesting examples in the shape of trees that had been subjected to various modes of treatment. Mr. Hibberd described a plantation of fruit trees of various kinds made six years ago, the trees selected for the purpose being the ugliest he could possibly obtain. His friend, Mr. Ware, of Tottenham, had assisted in the search for these ugly trees, little expecting that in the course of only six years they would prove to be equally remarkable for beauty and fertility. Three conditions, said the lecturer, were regarded in this business. He resolved that, however ugly the trees, they should be of good sorts in their several classes, grafted on free stocks, and planted with as much care as if they were the finest trees in the world. They were planted on a strong soil that would produce the finest Oak and Elm timber, and the finest Wheat in the world, and a vigorous growth has made them what they are. They have never been touched with the knife, and it is but fair to say that here and there a cross shoot might be cut out with advantage. We need not be fanatics in renouncing the use of the knife, but it is high time to restrict the liberty of those gardeners who go about hacking and slashing, and who are evidently too thickheaded to know that when they have cut a waggon-load of branches off a tree, it is scarcely possible to put them on again. But, after all, the marvel is that amateurs who may be accredited with the capability of reflecting have taken a firm hold of the idea that the smaller the tree the greater will be its productiveness, and the proper development of this faith is that fruit will most abound where there are no trees at all. Well may they adopt starving stocks, and freely use the knife to root and branch.

As a matter of course, the lecturer had to face the question of the pruning of espalier and wall trees, and begun by saying that they were usually pruned too hard. The larger the tree, *ceteris paribus*, the better. Restriction caused a provoking production of useless spray, checked healthy root-action, and endangered the health of the tree. One great healthy Peach or Nectarine would produce more fruit and better fruit than a dozen trees systematically "kept within bounds," and require but a tenth of the time to take care of it that the restricted trees would demand. As to the general system of pruning wall trees, it was sound, and we had reason to be proud of our Peach walls; but there was room for improvement in the case of wall trees in bad climates, for the very best protection they could have was a bristling of breast-wood, which should be allowed them by the pruner. A fringe of short shoots projecting from the wall proved a most efficient shelter to the incipient fruit, when it happened that about May 20 there came a killing frost and swept the crop from east walls in the case of trees pruned, according to prevailing notions, with the most perfect propriety.

We are compelled in this summary to omit many matters of interest, but we must briefly describe a model Peach garden that was brought before us—an exact reproduction of one formed some years ago at Stoke Newington. We were invited to consider that the bursts of soft sunny weather that occur in February and March cause wall trees to move prematurely, and the consequence is that having made a brilliant start the frosts that follow sweep the crop away. A late spring, and the non-occurrence of frost in the latter part of May, are the conditions on which we chiefly depend for a good fruit crop. Now, said the lecturer, if we could turn the walls round so as to keep the trees dormant during those bursts of genial weather that characterise our spring, and so often stimulate the wall trees prematurely, we should without doubt ensure a larger and more regular production of wall fruits of all kinds. We cannot make a brick wall or a Peach tree revolve on its axis, but the Reversible Fruit Wall (see p. 205), consisting of wood solely, secures to the cultivator the choice of two aspects for every tree, and he can therefore retard or promote their growth at pleasure, so far as regards

keeping the tree in the shade or exposing it to sunshine. This kind of wall was invented to reduce the difficulties of wall fruit culture in a curiously unfavourable situation. It may be constructed by any village carpenter at a comparatively trifling cost, and might be made the basis of a most enjoyable amateur's Peach garden. The requisites are stout, square posts, cleft at top to receive wooden walls suspended by cleats. Between the posts are wires, on which the trees are trained. As the walls can be hung on either side of the tree, it follows that where such walls are in use the cultivator has in every case the choice of two aspects. In the particular case under consideration the walls were 8 feet in length and 6 feet high from the ground line. They were constructed by Mr. John Overall, of 16, Shacklewell Lane, Kingsland; but as the invention is not patented, and the construction demands no special skill, any village carpenter could do the work at a cost quite trifling compared with the cost of brick walls.

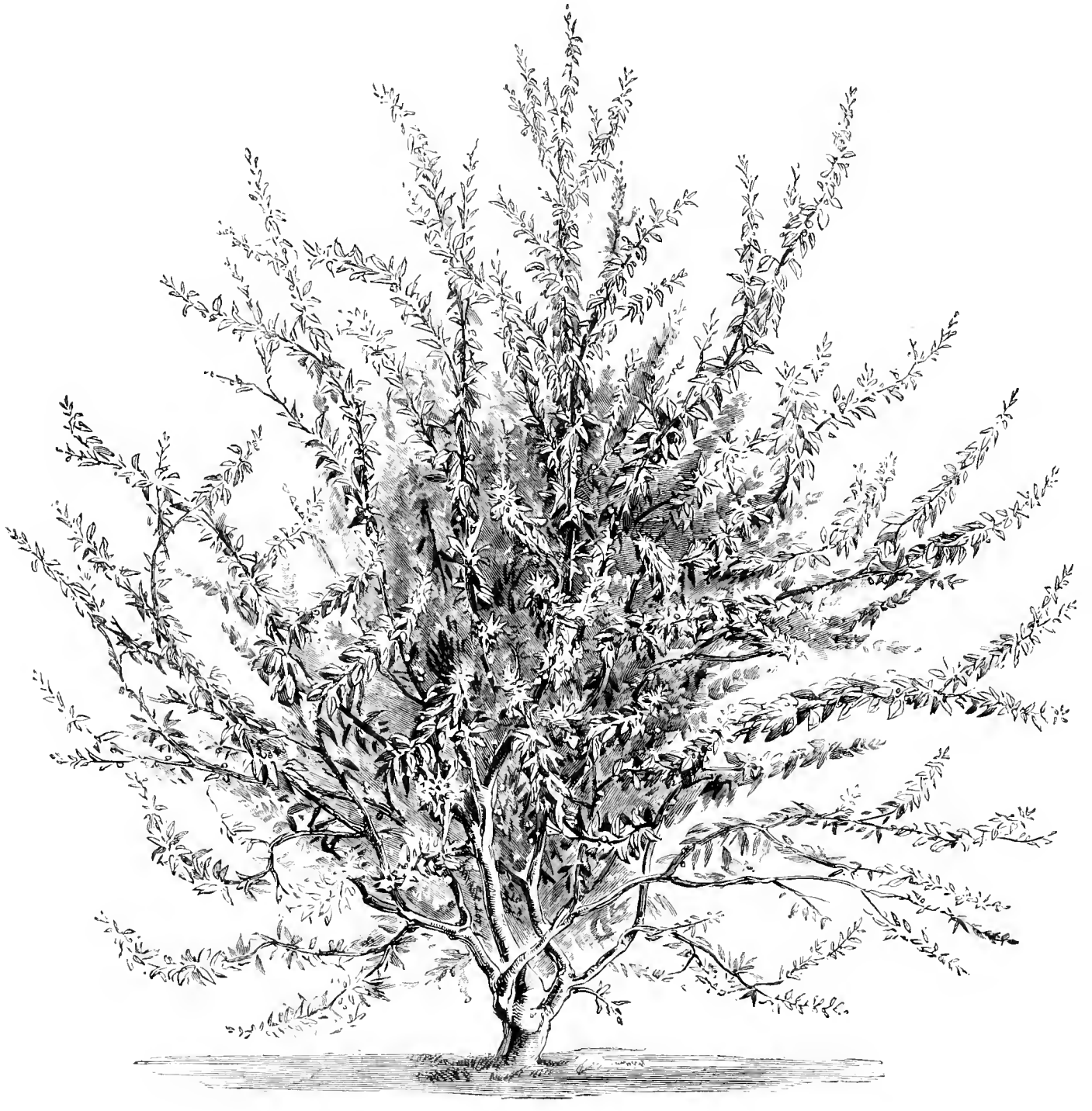


FIG. 35—NATURAL GROWTH OF EARLY FAVOURITE PLUM.

Florists' Flowers.

DRESSING THE CARNATION AND PICOTEE.—Surely "D.," of Deal, must be perversity personified. Dispossessed of one illusion, he enfolds himself in another with a complacency which would be most amusing were we engaged in a game of cross-purposes, but, as my desire is to set out first principles in the clearest possible light, and elucidate the truth, such a course is, to say the least, a little trying to one's patience, and not edifying. Told that instead of following the teaching of Mr. Jeans, he had utterly perverted him, he answers with an inconsequence worthy of Mrs. Nickleby, or the inimitable Sairey Gamp herself, "Oh, dear, no; certainly that would be the last thing I should wish to do in reference to anything that came from Mr. Jeans. I knew him better than Mr. Dodwell. He was an intimate and much-valued friend, had been a florist all his life, and when he penned the article in the *Florist* had far advanced in middle life."

Probably "D.," of Deal, knew Mr. Jeans better than I did. It was my great privilege and honour to be in frequent correspondence with Mr. Jeans for many years before his death, and I cannot too highly magnify my sense of the obligation I, in common with all florists, owe to him; for prior to his work and that of the late Dr. Hardy a literature of florists' flowers worthy of respect could scarcely be said to have had an existence: but what have personal intimacies or intimacies not personal to do with a man's published teachings, or his vindication of fixed principles?

Mr. Jeans demonstrated in the paper to which I referred "D." that the practice of dressing flowers rested on exactly the same ground as the right, and duty,

to bud and graft, train and tie-in, disbud and prune, and all the multifarious work whereby the cultivator guides Nature to a development above and beyond that she would attain unassisted; and it says but little for "D.'s" opportunities of intercourse that he seems to have assimilated so little of the excellent wisdom of his friend, and is inclined to depart so far from his teaching. But I promise him so long as I am spared to hold a pen, or speak a word, he shall not do this without my protest.

Told that the illusion in which he had hugged himself, that I, as a Northern florist, was writing from a Northern point of view, was quite untenable, inasmuch as I was Southern-born and Southern-bred, and having for years attended exhibitions and seen the best collections both of North and South, I was able to say "the same flowers won, the same style of showing obtained, and the same rules and practices were observed at all even pretending to position;" "D." says, "Oh! yes, but Derby was far north of the line drawn from Lynn to Swansea for the trial exhibitions of 1850, by the late John Edwards," and "I remember a Mr. E. S. Dodwell, an enthusiastic grower of Carnations and Picotees, then resided there, and in the competition at Slough in that year he seemed to be the champion of the Northerners, exhibiting in the classes for Northern flowers, but not in those for Southern flowers:" and he asks, "Was it, then, strange I should have thought Mr. Dodwell had Northern instead of Southern tastes?"

Now if the facts stood exactly as stated by "D.," why, I ask, should "D." assume me to be governed by Northern tastes any more than Mr. Turner, as Mr. Turner, equally with myself, showed and won with Northern raised varieties? But what will my readers think of "D.'s" ability to grasp facts or state a case, when I tell them that on the very next page of the *Florist*, from whence, I suppose, of course, "D." drew this information, and in the same report of the trial exhibitions, "D." would find that I both grew and exhibited Southern as well as Northern raised varieties, as did every other exhibitor; and what then becomes of the inference he seems to say he so naturally drew?

"D.," of Deal, says he will plead guilty to certain things characterised by himself, but he demurs to any "charge of wilful perversion of facts," and I desire to say I should grievously misrepresent myself if I have led any of my readers to infer that I had any such thought in my mind—far from it; but I do charge "D." of Deal in this matter with having promulgated crude and unsound opinions, arrived at, probably, because of an imperfect examination of the facts, and an inability to apply fixed and well-defined principles.

"D." goes on:—"He" (Mr. Dodwell) "says that difference does not exist" (a difference between Northern and Southern tastes); "all I can say is, that I have heard even of late years some Southerners ridicule the thinness of the Northern flowers, and have seen in catalogues flowers marked as suiting the Northern taste."

What is the evidence that "D." will accept? I have told him there is no difference amongst the best men. Let me repeat what the late Mr. Edward Beck said of the above exhibition, with which "D." ought to be, if he is not, conversant.

Turning to the same volume of the *Florist*, 1850, p. 233, Mr. Beck writes:—"Our readers are aware that these meetings (grand trial exhibitions) were proposed because of the difference of taste said to exist between Northern and Southern florists, and to test the fact whether such assumed difference was a reality. This, then, was the first point to be decided; and entering the tent as an observer merely, we felt no little interest in its elucidation. It was speedily apparent to us that this difference was purely imaginary; that it existed neither in the productions nor in the producers; and henceforth we entreat all florists to believe that the same rules are received in the South as in the North. We are justified in saying as much, because there never were such gatherings, either of raisers, or of Carnations and Picotees before." And if "D." turns to the *Midland Florist* for the same year he will find that my much-loved friend, the late Mr. J. F. Wood—than whom no man had a greater title to the respect of florists for his gentleness, truthfulness, and power to observe—expresses the same opinion with more amplification.

As to the "ridicule by Southerners of the thinness of the Northern flowers," I challenge "D." to name a single variety which could win a first place at an exhibition of any pretension in the North which would not be highly prized by the first florist of the South—say Mr. Charles Turner? Were any of the flowers which bore my name thin? Are those of Mr. Simonite, or Mr. Lord, or any other raiser of accepted repute, thin? I really am almost ashamed to ask these questions—"D." is so hopelessly in the wrong. But "D." has "seen in catalogues flowers marked as suiting the Northern taste."

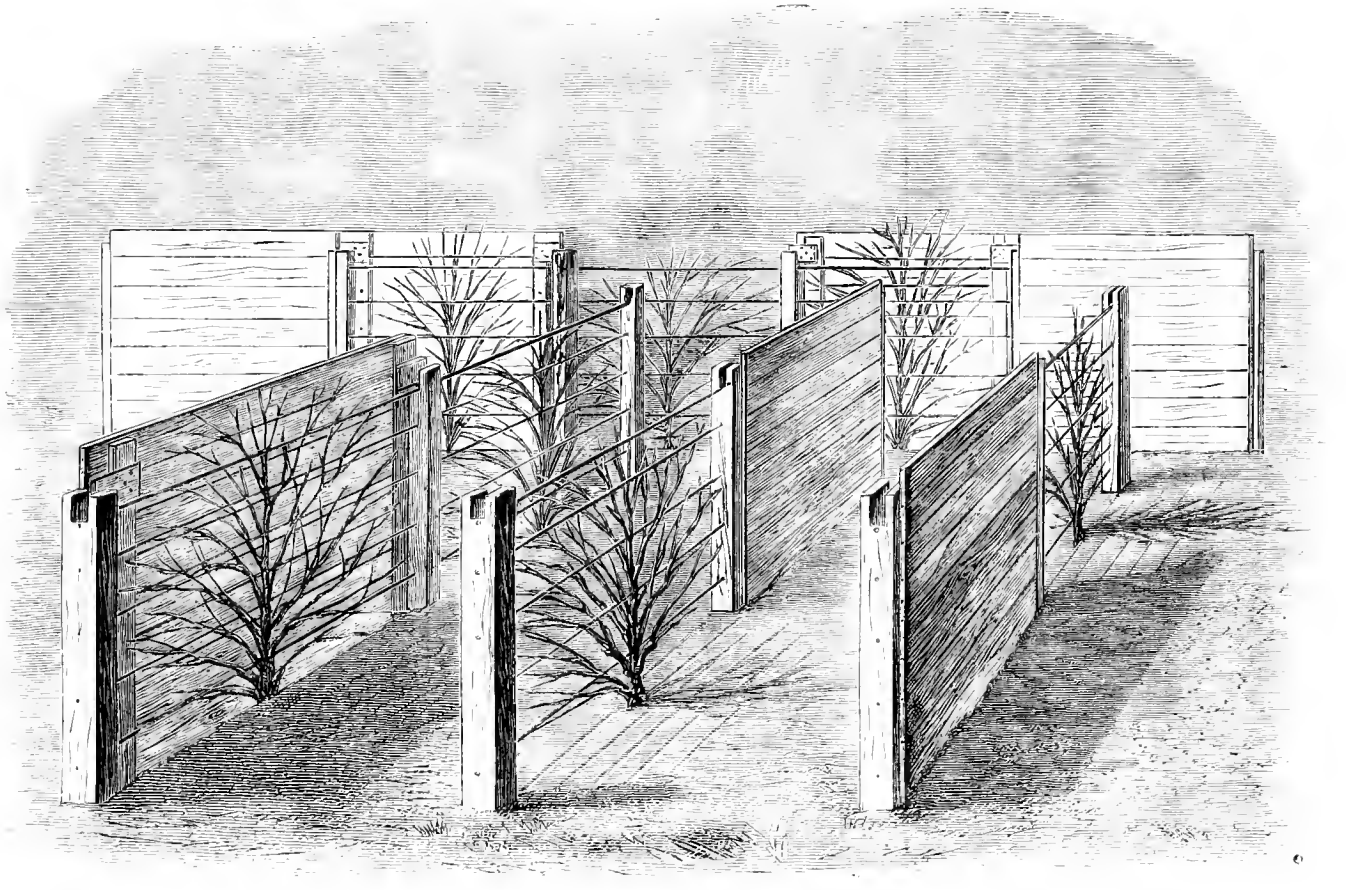


Fig. 36—Hibberd's reversible fruit walls.

I have been absent sixteen years from active floricultural life, and therefore I cannot gainsay this statement; but I say at once, in Carnations and Picotees I know of none; and I am perfectly confident, if made, it could not mislead the instructed florist. He has the same creed as his Southern brother, and follows the same practice.

But there has been, and probably so long as physical geography remains, always will be, some difference between North and South; not, however, a difference of law or taste (so far as taste may have influence in floricultural choice), but a difference of development due to the differing physical surroundings. Thus it is well known to those conversant with these flowers that some varieties of the highest excellence, and which expand most freely in the soft atmosphere of the South, almost refuse to open in the colder air of the North, whilst, on the other hand, varieties which enjoy the bracing atmosphere of the North, sicken and languish in the warmer latitudes of the South.

"D." proposes finally, and by way, I suppose, of

showing how much the public is deluded by the practice of "dressing," "to bring up a flower of two or three of the leading varieties as they are grown, and place them alongside a dressed flower." Permit me to beg of him that he shall be consistent, and as he is so very careful of the poor uninstructed public, whom he necessarily assumes to be quite without knowledge of the effect of cultivation, to request that the flowers so produced shall be from plants which have not been subjected either to disbudding or the tying of the pod—both operations regularly practised, and of necessity by the advanced cultivator, each far more violent in its character and more fruitful in its effect than anything that can be done by the dresser, and each utterly out of the pale of justification if dressing can be legitimately condemned. Let him do this, and, whatever may be his own simplicity, I could not hope he would escape an unanimous verdict of floricultural *felo de se*.

In closing, "D." says nothing I have written will prevent his meeting me, as he had done before—that is as brother florists should. I hope not. I honour "D." for much good work he has done for florists, and greatly admire his zeal. I only regret in this matter of the Carnation and Picotee his judgment has not been guided by a wider knowledge. *E. S. Dodwell.*

Notices of Books.

Histoire et Culture du Fuchsia, *suivies d'une Nomenclature Méthodique des plus belles variétés connues.* Par M. Félix Porcher, Président honoraire à la Cour d'Appel d'Orléans, &c. 8vo, pp. 144. Fourth edition. Goin, Paris, 1875.

The first edition of this useful little book was published as long ago as 1844, when comparatively little advance in raising hybrid varieties had been made, though it contained "*la mention ou la description de trois cents espèces ou variétés.*" Of these 300 species and varieties, few of the varieties now survive, so that with the exception of coloured plates, many of them very badly executed, we have little knowledge of the early hybrid varieties which have given birth to the magnificent varieties of the present day. M. Porcher opens with the history of the genus, followed by an enumeration of the species with descriptions of those from which most of the cultivated varieties have descended. The number of species is sixty-five, but as conica, discolor, gracilis, &c., are given this rank, his number is nearly twenty too high. Again, several species are represented by two names—*e.g.*, rosea = lycioides, pilosa = ovalis, corollata = petiolaris, &c.; but as the author makes no pretence to botanical knowledge, these discrepancies may be regarded as slight, especially as they in no way detract from the value of the book. The historical portion is much more accurate, and consequently more interesting. Naturally some errors have crept in, but these are few, taking into consideration that the author is not an English scholar, and that the greater number of the early varieties bear English names, and were published in English books. In the historical portion the author first treats of some of the early varieties of undoubted hybrid origin, such as exoniensis, of Pince, between cordifolia and globosa; Standishii, between the latter and fulgens; Standish's varieties, raised from a cross between a variety of F. macrostema and F. corymbiflora, Attraction, &c., figured in *Paxton's Magazine*, vol. ii.; Dominyana, between spectabilis and serratifolia, &c. The blending of the characters of such widely distinct species fully explains the wonderful diversity of variety we have at the present time. There is a peculiarity about these hybrids worth mentioning—they were all fertile. Besides these hybrids there were the numerous distinct natural varieties of F. macrostema, and the true F. coccinea, the history of which is unknown to M. Porcher. Then we have a long list of all the principal raisers in England, France, Germany, &c., followed by a rapid sketch of the progress made and the dates of the more important acquisitions, such as the first variety with a double corolla (1850), the varieties with a white corolla raised by Story and by Lucombe & Pince (1855), double white, in 1866, &c. The author is of opinion that most of the early double flowered varieties were the issue of F. radicans. The first striped was sent out by Story in 1850, which was not much improved upon until the appearance of Banks' stricta perfecta (1868), Hopfe's Carl Holt (1869). Finally there are varieties with variegated or coloured foliage, culminating in the Sunray of Milner.

The culture and propagation of Fuchsias are treated at considerable length, as well as the raising of new varieties. One of the difficulties of the author is the variety of uniatelligible names drawn from half-a-dozen different languages; and he exclaims against the absurd names given by some raisers. He claims the right to translate foreign names into French on the score of convenience, and of their not being understood except by very few people. We quite agree with him on this topic, and we have often thought that our principal nurserymen would do a good service by giving English equivalents for the French and other names of Roses, &c. Truly some of them would be difficult to translate; and our author stumbles at some of the English appellations. Thus Warrior Queen becomes *le Guerrier de la reine*; First of the Day, *la Lumière du jour*; May Felton, *Mai de Felton*; &c. Try me O! is rendered by *Oh! essayez de moi.* Such examples show the difficulties in the way of translating some of these fanciful names, and reminds us that we once saw Gooseberry "Twig'em" given in German as Dünn-zweigig, slender branched! M. Porcher concludes with a descriptive selection of varieties arranged under five different groups:—

1. Calyx red rose or white; corolla blue, red, or pink.
   Section 1.
   Calyx red or rose; ninety varieties.
   Section 2.
   Calyx nearly or quite white; thirty-six varieties.
2. Corolla double, violet, blue, or red; forty-two varieties.
3. Corolla white, single or double; thirty-two varieties.
4. Corolla striped; fourteen varieties.
5. Leaves variegated or coloured; one variety.

Besides these first-class varieties described, a supplementary list is given under each group, and some notes on the new varieties of 1874-5 at the end. This little work, the production of an ardent admirer of this beautiful genus of plants, will be found very useful by the gardener who wishes to have the unbiassed judgment of a competent authority.

The Villa Garden.

POTTING PLANTS.—The hints given on the matter of seed-sowing may be appropriately supplemented with some simple instructions as to potting plants. It is one of the duties of the Villa gardener that is now commanding his attention if he is fortunate enough to possess a house that is heated with a flue or hot-water pipes.

Many plants that have been resting during the winter months are now beginning to move, that is to say, young shoots are breaking forth from the main stalks, showing that root-action has commenced. Now it has been laid down as a good rule to follow that in potting plants that require any cutting or pruning—as for instance such soft-wooded plants as Fuchsias, Pelargoniums, &c., which have been kept through the winter—the two operations should not be performed at the same time; it is best to prune first, and then allow the plant to make fresh growth before potting is performed. Another rule has been laid down by competent teachers, namely, that deciduous plants, *i.e.*, those that lose their leaves during the winter, of which the Fuchsia is a good representative, should never be repotted till they have burst into leaf. The reason for this is obvious. The act of bursting into leaf is but the reflex action of activity at the roots, and fresh soil need not be placed about them until they are ready to feed on it, and as soon as they are ready root food should be supplied.

Our Fuchsias, which have been kept dry during the winter on a warm shelf, but kept as cool as possible, have broken into a free growth consequent upon the mildness of the weather, and the first process was to prune them into shape by shortening back all the main shoots so as to secure as far as possible a handsome and symmetrical framework on which the plant could build itself up. All the small thin shoots springing from these have been cut back quite close, and so there will result a regular breaking out of the young growth all over the framework. Our next process will be to shake the old soil entirely from the roots, and the long ones will be cut back, and the plants repotted in more nourishing soil in smaller pots than they were in previous to the shift. This will give them a good start, but they will be brought on into growth gently and carefully, for though the weather is now mild and at times bright and sunny, we are by no means clear of wintry influences; and sometimes we have very severe frost in February. Water must therefore be sparingly administered for a time, unless there is ample heat at command when frost prevails, and then there is no need to keep the plants back. Where the house is cold and has to depend for warmth on a lamp stove or some such contrivance, the caution we have just given will be found necessary; for what can be more annoying than to have tender plants, advanced in growth, cut back by frost just when they look most promising? Zonal Pelargoniums, tuberous rooted Begonias, Nierembergia gracilis, show Pelargoniums, and other things of which the foregoing may taken as representatives, are now being similarly treated, for all are becoming more or less active in growth.

The charming spring flowering Clematis are being similarly treated, and in this case they are kept in a sheltered place out-of-doors all the winter, and covered up when the weather is severe. We have cut away all the dead wood, and allowed the living shoots to retain all the buds on them; and in a few days they will be repotted, all the old soil shaken from the roots, and repotted in a very rude soil; some rotten manure being placed at the bottom of the pots. The thick gross roots coil round at the bottom of the pots, and it is therefore necessary there be something good to feed upon; and indeed these Clematises can hardly be too well fed. When repotted stakes 4 feet in length are put in round the sides of the pot, and the shoots tied out regularly to them; but some care is necessary that the buds be not rubbed off in the act of doing so.

As a guide to those who may be interested in these charming plants we have to state that our favourite varieties are azurea grandiflora, pale lavender-blue; Albert Victor, deep lavender; Fortunei, double white; Lady Londesborough, silver-grey; Lord Londesborough, deep mauve; Miss Bateman, pure white, very fine; and Standishii, lavender-lilac. These are old but very attractive varieties, and we can especially commend their cultivation to those who have cold greenhouses. All those we have named are hardy enough to last through the winter, and flower in the open air in spring; but sometimes an early frost will rob them of half their beauty, while under glass no such calamity can befall them: and even when not forced they come into flower a few weeks earlier than when growing in the open air.

Evergreen greenhouse plants, such as Camellias, Oranges, Myrtles, &c., have a particular season at which the roots elongate, and increase with more rapidity than is usual at other stages of their growth; and generally, or at least under ordinary circumstances of culture, that season is immediately they have made their growth in branches and leaves, and that is the most fitting time to shift such as require it into larger pots and fresh nourishing soil just as the roots are extending, and are ready to push into the fresh root food. It will be then found that these plants get pretty well established in their pots by winter, when the season of comparative rest comes.

The act of shifting a plant into a larger pot often becomes necessary when pruning is not called for. When it is desired to increase the size of a plant, or, in other words, to give it more root-room, it should be shifted into a larger pot as soon as the roots have coiled themselves among and around the soil in the pot in which the plant has hitherto been growing to such an extent that renders it safe to perform the operation without danger of the ball of earth falling all to pieces when it is turned out of the pot. Generally speaking, a safe indication as to when a plant requires more root-room and nourishment is when the roots can be seen at the bottom of the pot, and make their appearance through the drainage hole at the bottom. It is, however, much preferable at the near approach to winter—as we have frequently recommended—to leave the plants a little cramped at the roots than to shift them on at such a season, and the operation of repotting can safely be deferred till early spring. Azaleas and Camellias should not be shifted till they have done flowering and they are beginning to make fresh growth, though some are found advocating the repotting of Azaleas just as their flowering buds are swelling in March. The exact season for repotting such plants must, of course, be determined by the time at which they are had in flower, whether forced into bloom or allowed to bring forth their flowers in due season in a cool atmosphere.

Garden Operations.

PLANT HOUSES.

Plant Stove.—Many plants will now require immediate attention in repotting. It is not well to delay any work of this kind later than can be avoided, as the advancing season brings with it things innumerable that must be seen to. Consequently when such portion of the occupants of the stove as show signs of beginning to move are potted early, it allows more leisure afterwards for other matters. Most of the fine-leaved subjects can now receive their annual shift. Alocasias, of the metallica and Veitchii section, to grow them well, need very different soil to the majority of stove plants, for if their roots are placed in anything of an adhesive nature they rot almost as soon as they get into it. These all want shaking completely out every spring, and the soil renewing. The latter should consist of the fibrous portion of good peat, with a liberal admixture of sphagnum and rotten dung that has lain exposed to the air until it has become quite dry, to which a good sprinkling of sand should be added. A. macrorhiza does best in half turfy loam and half rotten dung, with some sand. Strong rooted species like A. zebrina do best in soil somewhat lighter than A. macrorhiza, but heavier than the first-named kinds. Anthuriums also succeed best in lumpy, open, fibrous material, with some sphagnum added. Most of the above plants make many roots near the surface, and like a good depth of drainage. In potting Crotons more drainage should be used than with most hard-wooded subjects, and plenty of fibrous material ought to be placed over the crocks, as the extraordinary amount of syringing they require to keep down the yellow thrips, where this exists, soon makes the soil too wet if the drainage is at all deficient. As to the treatment of the handsome Ananassa Porteana and A. sativa variegata, when grown amongst ordinary stove plants, they too often have their leaves drawn up so weak as not to be able to support themselves in their wonted position, apparently through a forgetfulness that they are Pine-apples, and that to grow them well they must have Pine-apple treatment by giving them an abundance of light, and neither too much pot-room or water, using pure, good loam, and potting them hard. In potting Dracænas advantage should be taken of their being turned out to take a couple of inches off the bottom of the main root with the fibres attached to it, placing these in small pots, turning them the bottom end upwards. So treated, they soon begin to grow, and will make nice little plants during the summer. These come in to take the place of such as get old and naked. Cyperus alternifolius and C. variegatus should be increased by division of the roots now when potted. Marantas, also, may now be increased by division of the crowns. This can be done at any time of the year when the whole of the leaves are fully matured, but the spring, just before they begin to grow, is best. These plants, if wanted for exhibition or for placing in the conservatory for a time during the warmest part of the summer are much better not grown so hot as is usual, but kept at the coolest end of the stove; so managed they make slower growth. Old plants of the elegant Fern-like Cupania filicifolia, to keep them well furnished with healthy leaves down to the bottom, require heading back every two years. If they are cut down now within 8 inches of the collar they will break several shoots. This plant has far the best appearance when confined to a single growth, consequently all but one, when large enough for cuttings, should be taken off with a heel and struck. Like many subjects of similar habit it looks best in a small state. The same applies to small-leaved Aralias, of which A. Veitchii may be taken as the best. When this plant gets too tall it to some extent loses its elegant appearance: if headed down now the tops can be struck and the shoot again grown on; after it has broken all the shoots but one should be taken off and struck. Pandanus Veitchii or P. javanicus variegatus are both very suitable in a small state for room or table decoration, and where there is not a sufficiency of the former, which is the best, the latter is a good substitute; if removed and potted like Pine suckers they will soon root, making nice plants for the above purpose in a single season. Large specimens of these Pandanus look much best when confined to a single crown. Where Dieffenbachias have lost their bottom leaves they should have their tops taken off and struck; they will root readily in a close warm atmosphere: pieces of the old stem with two or three joints will also grow if put in small pots and not kept too wet, or they are liable to rot. They are free growing things, and will succeed in any porous soil. Where a back wall has to be covered in a warm stove there is yet nothing more beautiful than Cissus discolor; with plenty of pot-room and good rich soil it will cover a large space in very little time. Small growing plants should not be neglected—the beautiful Bertolonias, particularly, deserve a place. For shady corners where something is wanted but few things will grow, the Fittonias are particularly adapted, either for planting out or for pot culture; pieces of the shoots taken off a few inches in length will quickly make roots. They succeed in either ordinary well drained peat or loam, or sphagnum mixed with sand. *T. Baines.*

Orchids.—Continue as directed in the last Calendar with the potting and top-dressing of the subjects in the East India-house. As each plant is done let it be carefully sponged, that all dust, that soon collects, and any scale that may be upon them, may be washed off. Then, when all have been gone over, wash the pots of those that require it. Sponge the inside glass, and arrange the plants on the centre stage and side shelves in a careful and systematic manner. Let the Cypripediums be placed on the shady side of the house, as these are terrestrial and require less sun-light than is desirable for such things as Dendrobiums, Vandas, &c. Cypripedium caudatum will be found to succeed better in the Cattleya-house than among the general collection in the East India-house: it should now be just showing its flower-scapes, and requiring a good share of water. Thunia Bensoniæ, which should have been kept nearly dry for the last three or four months, will now be showing signs of growth; if it is necessary to shift it into a larger pot let it be done at once, using a mixture of peat, moss, sand, and broken crocks. Fill the pot about a third full of crocks, and in potting it is not so needful to elevate this so much above the rim as is the case in the majority of these plants. When potted place it in the East India-house, where it can get plenty of light, and as the young growth increase in height, and the new roots push away from them, it should be treated very liberally as regards heat and water, and occasionally to doses of weak liquid manure. This plant should flower in May and June. It will thus be seen that for the next four months, which really should represent the whole of its growing and flowering period, it becomes desirable that it should be assisted with all the means we may have at command. As a decorative plant it is very showy, and when a well flowered specimen is placed on an exhibition stage its distinct colour and fine trusses make it very telling and effective. The old bulbs (after the new growths have attained a height of about 6 inches) may be cut partly off, and laid in pieces of 2 or 3 inches long in the pots of the Vandas, &c., where they will soon emit roots, and during the summer will in some cases make bulbs a foot or more in length. Let Trichopilia suavis be looked over; it will be found in most cases that the flowers are showing at the base of the bulbs: these must be kept just above the soil, otherwise through damp and insects they soon become damaged. Dendrobium crassinode should now be in bloom, and the young growths pushing up. It will now be necessary to increase the supply of water to the roots of this, likewise Wardianum, Chrysanthemum, Cambridgeanum, &c., whilst such as Bensoniæ, Parishii, crystallinum, albo-sanguineum, thyrsiflorum, densiflorum, &c., which are still dormant, must be kept somewhat dry, increasing the quantity of water as the flower and growths appear. Epidendrum vitellinum majus will now be pushing up its spikes through the small sheath at the top of the bulb. This, the majus variety, should flower in April and May, and sometimes continue good till June on growths formed during the previous summer, and dormant during the winter, whilst the species, the flowers of which are much smaller, come up with the new growth in the autumn and flower during October and November. Odontoglossums must be well supplied with water, as spikes will now be coming up very rapidly. O. pulchellum, Phalænopsis, triumphans Roezlii, and the lovely vexillarium will already be showing in many cases, and, if carefully watched, will soon make a fine display. *W. Swan, Fallowfield.*

FRUIT HOUSES.

Pines.—It is still, notwithstanding the efficiency of modern heating appliances, a commendable practice to employ a fermenting bed as a means to excite speedy root-action with suckers and rootless Pine plants; beyond this these beds are unnecessary, and should be replaced by heated chambers, which are capable, under proper management, of affording the necessary degree of warmth at the roots constantly with more regularity than otherwise, and producing even better results at an immense advantage in regard to time and labour, at but a trifling additional cost in fuel. As it will soon be time to commence with an early batch of suckers, timely attention should be given to whatever is needful for the purpose. If a fermenting bed is to be used, this should be prepared beforehand, to have the heat well up at the required time; a partly decayed one of tan is preferable, which should be animated with an additional 2 feet of new tan, and this be well incorporated with the old. Soil should also be broken into suitable sized pieces by hand, taking away the small and using the fibrous peat only in potting. Pots should also be washed inside; 8 and 5 inch ones are the sizes we employ. Where it is customary, as it is here, to shift at about this season, the plants which have been wintered in small pots, the operation should be proceeded with whenever circumstances will permit. If this batch of plants is subject to a bottom-heat of 90°, after being potted and properly cared for in other respects, they will form the plants for starting into growth at about next January. Continue to apply former directions which related to the treatment of those plants which are now fruiting. If it be desirable to retard a portion of those which are about starting, let them advance slowly at a night temperature of 60° or 65°, but maintain the bottom-heat regularly at from 80° to 90°. *G. T. Miles, Wycombe Abbey.*

Orchard Houses.—The weather lately has been very changeable and unfavourable for the early orchard-house trees, such as Apricots, Peaches and Nectarines. If they are at present in the blossoming stage care must be taken in the middle of every day in fertilising the blossoms by gently shaking the branches, or, if grown in pots, by tapping the pots with a piece of stout stick. As soon as the blossoms are all set, syringing the trees daily must be commenced, to keep down red-spider; and if aphis appear, fumigation must be resorted to before they multiply in numbers to curl the foliage. In the dull cold weather now prevailing, and where the houses are heated, the temperatures need not be kept so high as in bright sunny days—from 45° to 50° in the night, and from 55° to 60° in the day-time will be sufficient. In unheated orchard-houses the Apricots, Peaches and Nectarines will now be swelling their buds, and the longer they can be kept back in blossoming the better will be their chance of setting a crop. This can be best done by giving them all the air possible both night and day when there is no frost, and by keeping the earth in the pots rather dry till the blossoms begin to expand, when the pots must be well saturated. As some beginners in orchard-house culture may wish for a list of the different kinds of fruit best adapted for growing in pots or for planting out, I have, therefore, given the following as varieties I can recommend from having grown them myself for several years: they are given in the order of their ripening. Apricots: Early Moor Park, Shipley, Kaisha, Royal Moor Park, and St. Ambroise. Peaches: Early Louise, Hale's Early York, Grosse Mignonne, Barrington, Desse Tardive, and Princess of Wales. Nectarines: Hunt's Tawny, Lord Napier, Elruge, Rivers' Orange, Rivers' Pine-apple, and Victoria. Plums: Early Favourite, Oulin's Golden Gage, Green Gage, Cox's Emperor, Jefferson and Coe's Golden Drop. Pears: Citron des Carmes, Beurré Giffard, Louise Bonne of Jersey, Doyenné du Comice, Gratioli, and Marie Louise. The above selection of varieties will be found, I believe, to be suitable for keeping up a supply of good fruit before the outdoor supplies come in. *William Tillery.*

HARDY FRUIT GARDEN.

Where the pruning of bush fruits, such as Gooseberries and Currants, has been delayed, as they sometimes are, on account of the depredations of birds, no time must now be lost in pruning them at once. Let the shoots be well thinned out in the middle of the trees, and remove all branches which trail too near the ground; spur all cross branches, but leave sufficient wood at a good length for a crop. After pruning clear the ground, and select a quiet day to dress the trees over with a mixture of soot, lime, and wood-ashes, in a dry state. If the trees are not wet, water them over with a fine rose, and follow it up by sprinkling the powder thickly over all the branches. This will have a considerable effect in warding off the attacks of birds, but if not sufficient the gun must do the rest. A good dressing of rotten manure should next be spread over the surface and lightly pricked in. If Black Currants and Raspberries have been delayed so long the manure must only be laid on the surface, and not pricked in. If digging is necessary it must now be left until early in autumn, as these trees have their roots close to the surface, and it is now too late in the season to mutilate them.

The pruning of pyramid and bush trees of Apples, Pears, Plums, and Cherries, will require immediate attention, for although the most important part of the pruning is the summer and autumn pinching back, every tree will require to be looked over before it starts in the spring, and all unripened wood, cross or ill-placed branches, and dead spurs should be pruned off at once; care should also be taken to thin out the growth wherever crowded, as it is a great mistake to leave too much wood.

The necessary pruning and nailing of Morello and other Cherries on north walls should be finished off at once. Morello Cherries bear their fruit principally on the young shoots of last year's growth, a good supply must therefore be laid in, but at the same time a sufficient number must be well cut back to assure a sufficient supply of young wood for another season. *John Cox, Redleaf.*

HORTICULTURAL EXHIBITIONS, 1876.

FEBRUARY.

16.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.

MARCH.

1.—Royal Horticultural Society, South Kensington, Meeting of Fruit, Floral, and Scientific Committees.
14.—Manchester Botanical and Horticultural Society. Floral Meeting at the Town Hall.
15.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees. Spring Show.
15 and 16.—Leeds Horticultural Society. Spring Show.
22 and 23.—Bristol, West of England, and South Wales Chrysanthemum Society's Spring Show.
29.—Royal Botanic Society, Regent's Park. Spring Show.

APRIL.

5.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
5.—Royal Caledonian Horticultural Society's Spring Show.
19.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
25.—Manchester Botanical and Horticultural Society. Exhibition of Auriculas, &c., at the Town Hall.
26.—Royal Botanic Society. Second Spring Show.
27.—Royal Horticultural Society of Ireland. Spring Show.

THE

Gardeners' Chronicle.

SATURDAY, FEBRUARY 12, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Feb 14.—Sale of Orchids, at Stevens' Rooms.
WEDNESDAY, Feb. 16.—Royal Horticultural Society: Meeting of Fruit, Floral, and Scientific Committees. Sale of Roses, Camellias, Gladioli, Lilies, &c., at Stevens' Rooms.
THURSDAY, Feb. 17.—Meeting of the Linnean Society, at 8 P.M. Sale of Lilium auratum, Conifers, &c., at Stevens' Rooms.
SATURDAY, Feb. 19.—Sale of Roses, Bulbs, Shrubs, Fruit Trees, &c., at Stevens' Rooms.

THE annual meeting and the report of the ROYAL HORTICULTURAL SOCIETY constitute, from a horticultural point of view, the most noteworthy events of the week. Of the report, which is given in another column (p. 201), we may say that it is in some respects the most satisfactory one that has been issued for some time past. We say so because, with great propriety, horticultural work is brought to the fore, and when the endless difficulties that have arisen, and will arise, between Her Majesty's Commissioners and the "local Fellows" are forgotten, the work that the Society has managed to do, even in such evil days as those we are now passing through, will still have a definite value; and especially is this the case as regards the garden at Chiswick, where as much really good work was done during the past year as in many previous years when the funds were more ample. The early publication of the valuable reports on Onions and Celery is in itself worthy of all praise. The Council, then, are able to report, under all circumstances, a very satisfactory and useful amount of work done at Chiswick—work which is thoroughly appreciated alike by commercial horticulturists and by their clients. The Council are able to show also that Chiswick actually pays its expenses. This is an important circumstance, lamentable as may be the fact that its energies are so largely devoted to growing decorative and bedding plants for the adornment of Kensington. We have no doubt whatever that these things, useful as they are, might just as well and more cheaply be grown by some market gardener; meanwhile the money of the Society and the ability and zeal of its officers is thrown away, and the proper duties of an experimental garden are perforce neglected or restricted to the narrowest limits. We are glad to see in the report a proper acknowledgment of the several Committees and of the public spirit of the exhibitors. We need not more particularly refer to Mr. WORTHINGTON SMITH'S discovery, as we have so frequently referred to it already, and as its practical importance will be more evident in the future than it possibly can be now. It is necessary to call attention to these matters, because many people, like the writer in the *Times* and the *Pall Mall Gazette*, quietly ignore, probably because they know nothing about it, the work that the Society really has done.

We think, therefore, that the report shows that the present Council are more entitled to the support of the gardeners of Great Britain, professional or amateur, than any Council we have had for some years, and we trust that they may receive support accordingly.

Turning now to the general meeting, it must first of all be stated that the meeting on Tuesday was of necessity merely a formal one, carried out in compliance with the charter, and very properly adjourned till the following Thursday, after the necessary formal business had been completed.

At the Thursday meeting an attempt was made by Mr. HARDCASTLE, on the part of the "local Fellows," to upset the present Council, and he concluded a temperate speech by formally moving "that the Council be requested to resign."

Sir ALFRED SLADE briefly, and Mr. PINCHES at great length, advocated the same course. Then followed Lord BURY, who contrived very seriously to injure his own cause, and made some, at least, thankful that the Council over which he presided were no longer in office.

Mr. SHIRLEY HIBBERD succeeded in showing that Lord BURY and his associates wanted to turn the Council out "because they have done their best," and contributed to the general amusement by repeating as spoken Lord BURY'S words. Mr. HIBBERD had no difficulty in showing that the Kensington Garden was one of the chief millstones around the Society's neck, and that, directly and indirectly, its cost might be set down at about £6000 annually, while the benefits it rendered to horticulture were almost *nil*.

Mr. ALFRED SMEE pointed out the incumbrance presented by the existing charter, which was so drawn that no Council could work satisfactorily.

Eventually an amendment to Mr. HARDCASTLE'S proposal, to the effect that the report be adopted, was carried by forty-five to thirty-two—a result, we believe, in no small degree due to the tact and generalship of the President, Lord ABERDARE, who has won his laurels on this occasion as the most judicious President the Society has had for some time past.

In accordance with a suggestion made by the President, supported by some of the Fellows, a committee was ultimately appointed to confer with the Council as to the question of privileges. The names of the committee proposed to carry out this conciliatory work are those of C. J. Freake, C. H. Pinches, J. A. Hardcastle, G. F. Wilson, F.R.S.; A. Grote, and the Hon. R. W. Chetwynd; and, with the object of allowing these gentlemen to confer with the Council, it was arranged that the meeting should be adjourned for a fortnight.

It is to be hoped that some satisfactory arrangement may be made as to this question, which seems to be a burning one to the local Fellows, but which is well-nigh a matter of indifference to the horticulturists as such. Though we have little faith in the possibility of working the Society, as a horticultural Society, all the time it is hampered with its present charter and agreements, nevertheless it is the duty of horticulturists at the present juncture to uphold the Council; and we are glad to find that they were so well supported on Thursday last by the good sense of the meeting in general, as much or more than by the support of their professed adherents.

—— WE give on p. 209 a clever representation of the PARENT LARCHES AT DUNKELD, by Mr. WORTHINGTON SMITH (fig. 37), and for the following interesting details concerning them we are indebted to Mr. GRIGOR'S practical work on *Arboriculture*, published in 1868:—

"An account published in the *Transactions of the Highland Society*, under the authority of the late Duke of ATHOLE'S trustees, states that the first Larches at that places were brought from London by Mr. MENZIES, of Migeny, in 1738; that five small plants were left at Dunkeld, in alluvial gravelly soil, abounding with round stones, in a sheltered situation, elevated 40 feet above the Tay and 130 above the level of the sea. Three of the five were cut down, two of which were felled in 1809, of which one measured 147 cubical feet, and the other 168 cubical feet. The last-mentioned was sold on the spot to a ship-building company in Leith for 3*s.* a foot, or £25 4*s.* the tree. The other two Larches are of immense size, and continue to grow on the lawn at Dunkeld. The popular account, that the trees at Dunkeld were the first Larches introduced into Scotland, and that they were imported from Italy with other exotics, and nursed in a hothouse, does not appear to be correct; but as the trees at Dunkeld are now among the oldest and largest in the country, it is by no means surprising that, in the absence of the first imported trees, the tradition respecting their treatment should be engrafted on the celebrated tree on the banks of the Tay at Dunkeld. Of the Larches planted at Blair, one, 106 feet high, was cut down, from which the coffin was made of the celebrated Duke of ATHOLE, who planted the tree so extensively."

—— A diploma, gold medal, and 2000 marks were awarded to Messrs. T. H. P. DENNIS & Co., Mansion House Buildings and Chelmsford, for their Victoria Regia house at the Cologne Exhibition, and also a diploma and 750 marks for the heating apparatus for the same.

—— According to a recent Chinese *Materia Medica*, the principal FLOWERS USED IN PERFMUMING TEA are those of Gardenia radicans, Jasminum Sambac, Aglaia odorata, Ternströmia japonica, Camellia Sasanqua, and Olea fragrans, those of the last-named shrub being especially esteemed for the purpose. The leaves of Salix alba, and many other species of Willow are employed in making a kind of tea called T'ien-cha, and are openly mixed at Shanghai with the tea intended for exportation.

—— We are sorry to hear that Mr. DON, the able and courteous Superintendent of the Royal Botanic Society's Garden, Regent's Park, is about leaving there, after spending many years in the service of the Society.

—— At the anniversary dinner of the Edinburgh Botanical Club, held at the residence of Professor BALFOUR, Mr. I. A. HENRY addressed the company in an epic strain, calling to mind the noble deeds of Scotsmen in the cause of botany and plant culture. We regret that the pressure on our space forbids our doing more than extract the concluding lines:—

"None here to-night remembers
So large a meeting of distinguished members;
Save two resigned, two on, or o'er, the sea,
Our twenty-one entire should present be.
Though on your time I am a sad transgressor,
I humbly move a toast to the Professor,
Whose power magnetic, spite of wind or weather,
From north, south, west, has drawn so many hither—
'To Dr. BALFOUR and his partner dear,
And all their olive plants both far and near—
The smart Lieutenant and the bright M.D.,
And daughters fair—with honours three times three;'
And as none here has longer known our host,
I move his friend, Sir ROBERT*, give the toast.
Yet has the Club another debt to pay:
In every gardening journal of the day
Of JAMES M'NAB, what he is doing, has done
Suggestive of gardening thought, is dwelt upon
With general acceptance. Then can we
Of our staff officer forgetful be?
Look at his grand rock garden on the rise,
With its seven summits swelling to the skies,
With winding walks around their bases thrown,
Its slopes set with the rarest alpines known
In any one collection. Why, a lecture
Might be devoted e'en to its architecture!
To him a vote of thanks at least is due,
How best to pay the tribute rests with you."

—— Among winter-flowering Orchids it is impossible to find anything to excel CŒLOGYNE CRISTATA, especially when you can meet with specimens 3 feet in diameter completely covered

* Sir R. Christison, President of the Edinburgh Botanical Society.

with its pure white flowers, remaining in perfection from a month to six weeks. The flower-spikes in most instances are nicely thrown above its beautiful deep green arching foliage, whilst others lay amongst its large pseudobulbs. Whether required as cut flowers for bouquets, or for the ornamentation of ladies' hair, it is most invaluable. The above specimens can now be seen at the Victoria and Paradise Nurseries, Upper Holloway, N.

—— We learn that the beautiful and richly-stocked GARDEN of the late M. THURET, at Antibes, is for disposal. We have been privileged to lay before our readers on several occasions illustrations from this really wonderful establishment. Apart from the valuable and exhaustive report, giving a complete HISTORY OF THE POTATO FUNGUS and of its allies, with a critical examination of the observations and opinions of Mr. WORTHINGTON G. SMITH. The series of experiments which has been carried on during the last two years by Professor DE BARY at the instigation of the Society are fully recorded, with their bearings on the cultivation of the Potato. The results of his experiments and observations establish that the disease persists in a dormant state during the winter in the Potato tubers; and that the spores for the propagation of the disease have been produced by the mycelium growing in the Potato plants produced from such tubers. The committee recommended that the balance due to Professor DE BARY, viz., £50, they are well grown, and show something of their natural characters.

—— In spite of the chronic state of warfare the reports by the Secretaries of Legations and Consuls show that the EXPORT AND IMPORT TRADE OF SPAIN steadily increases, imports having trebled and exports quadrupled since 1849. These figures reveal the great wealth of the country, and give some idea of its possible prosperity if its enormous resources were fully developed. A comparison made between the years 1849 and 1873 shows that the value of the wine exported increased 600 per cent.; lead, 450; olive oil, 700; raisins, nearly 400; flour, nearly 700; cork, 700; brandy, 300; salt, 350, and sulphur, 500; the

FIG. 37.—THE PARENT LARCHES, DUNKELD.

delicious winter climate and most attractive scenery, the garden, which is of large extent, is stocked with the richest and rarest assortment of Vines, shrubs, succulents, and other plants that we have ever seen in the open air in any establishment, public or private. The collection was got together by the late eminent botanist, M. THURET, and his coadjutor, M. BORNET, so that scrupulous care has been taken with the nomenclature. It would be a sad thing for horticulture and botany if this collection were allowed to be dispersed or to degenerate in any way. We must refer to our advertising columns for further details.

—— At the last monthly Council meeting of the Royal Agricultural Society of England, Mr. WHITEHEAD, Chairman of the Botanical Committee, reported that the report of Professor DE BARY had been received, and will be published in the next number of the Society's *Journal*. This is described as a most be paid to him, and that the Secretary of the Society invite Professor DE BARY to communicate to the Society any further discoveries he may make in connection with this disease.

—— We have received the list of seeds offered for exchange by the BOTANIC GARDEN of Claudiopolis, which in English, or rather Hungarian language, is Kolozvár, *alias* KLAUSENBURG, Hungary.

—— The large cool conservatory in the ROYAL BOTANIC GARDENS, GLASNEVIN, just now presents a sight well worth a journey to witness, being all ablaze with the blossoms of the Himalayan Rhododendrons. It is, we learn, literally one sheet of bloom from end to end with Rhododendron Falconeri, R. barbatum, R. argenteum, R. Hodgsoni, R. arboreum, R. lancifolium, and many other mixed sorts. These prove to be really magnificent plants, when, as here, whole value of exports having increased 500 per cent. The greatest increase is in wine, which rose (to the United Kingdom alone) from 3,000,000 in 1859, to 7,000,000 in 1873. At Valencia, and in a less degree at Barcelona and Alicante, the production and exportation of Oranges has largely increased, affording remunerative employment to British vessels homeward bound from other ports of the Mediterranean.

—— That charming everlasting, RHODANTHE MANGLESII, is in some places cultivated in pots during the winter with great success, and when in flower in the spring used for the decoration of the conservatory. It is when grown in this way that we come to realise something of its great beauty, the bright pink flowers of the old type, and the satin-like blossoms of the white variety, with their golden centres, being something unusual. The seed is sown early in August

under glass, and when the plants are large enough to admit of transplantation they are singled out and planted three or five in a 60-pot, according to their size, and placed on a shelf close to the glass, where, with a free circulation or air, they will be unharmed by damp. Moderate supplies of water are given, and as the plants require it they are shifted into larger pots; the side branches are stopped as soon as they attain a length of 3 inches, and all flower-buds are removed till the plants are thoroughly established in good-sized pots. Plants have been seen in 10-inch pots forming half spheres nearly 2 feet in diameter, and covered with hundreds of flowers; and in the presence of such specimens the real character of the Rhodanthe as a decorative plant comes out in a striking manner. The treatment needs to be liberal, and from Christmas onwards a warm growing temperature is requisite, the heat increasing as the days lengthen. This is recommended, in order that the plants should make as much headway as possible in the early part of the spring, for as the light increases the inclination of the plants to bloom is so great that it is difficult to procure them of large size. A moist atmosphere in spring, and an occasional dose of liquid manure, weak rather than strong, are of great assistance—with a fumigation now and then, when greenfly proves troublesome. The soil best suited for the growth of the Rhodanthe in pots is one composed of equal parts of turf and peat, with a sprinkling of gritty sand, for the winter, substituting leaf-mould and manure for the peat at the subsequent shiftings.

—— We are informed by Mr. MECHI that the income of the ROYAL AGRICULTURAL BENEVOLENT INSTITUTION (for the relief of decayed farmers, their widows and orphans) has been increased during the year 1875 by the sum of £1800 in new donations and subscriptions. Sixty new pensioners will be elected in June.

—— It is stated that, owing to the almost exclusive use of Alizarine by the Turkey-red dyers of Europe, MADDER is becoming less and less in demand; consequently, its cultivation in Cyprus is being gradually abandoned, and what was once a large and valuable branch of commerce will in all probability ere long become extinct. The Madder lands of Cyprus are being turned to other purposes, as the prices obtainable for the roots become less remunerative to the grower.

—— In the February number of the *Floral Magazine*, edited by Mr. W. G. SMITH, one plate represents Begonia metallica, a handsome Begonia, with bronzy leaves, purple on the under surface, and trusses of pretty pink flowers. It is to be sent out by Mr. WILLIAMS. Another plate is devoted to three new Gloxinias, also sent out by Mr. WILLIAMS, among them one, Avalanche, of a pure white colour. As if to show the contrast, the next plate represents a globe-flowered Chrysanthemum, named Mrs. George Glenny, and said to be a sport from Mrs. George Rundle and Triomphe du Nord—a rich maroon-coloured flower, with the recurved petals tipped with yellow. Poinsettia pulcherrima plenissima has too recently been made the subject of notice in these columns to necessitate further notice now.

—— The last number of the *Moniteur Horticole Belge* contains an article on specimen perennial plants, on the PLANTING OF POTATOS, in which the author recommends that the seed Potatos should be cut, and only the top end planted.

—— The Royal Tuscan Society of Horticulture, under whose auspices the International Exhibition at Florence in 1874 was held, and who have a garden near Florence, have just issued the first number of a *Bulletino*, to be published at intervals, and to comprise original and extracted articles bearing on horticulture, reports of the proceedings of the Society, and other cognate information. The Committee of Publication include Professors PARLATORE, ARCANGELI, MM. GRILLI, SOMMIER, and E. O. FENZI, the latter acting as secretary. We are glad to see the Society protesting against the stupid restrictions on the entry of plants into Italy, a matter on which we have already published our opinion. Professor ARCANGELI has in the same number a paper on a specimen Cycas media in the Botanic Garden; Signor PUCCI one on the Artichoke; and there are divers other articles to which we cannot now further allude.

—— According to letters received from Ternate by Professor PARLATORE, dated September last, from Dr. BECCARI, that adventurous traveller had discovered on Mount Arfak, in New Guinea, a Balanophora and an Araucaria, besides species of Vaccinium, Rhododendron, Podocarpus, Umbelliferæ, and a Drimys. We have merely these names to tantalise us, but they suggest a very interesting flora.

—— Following the example of Belgium, Denmark has established a SCHOOL OF HORTICULTURE at Copenhagen. Everywhere, it seems, but in England.

—— The great success of the INTERNATIONAL POTATO SHOW held last year has emboldened the promoters to arrange for a similar exhibition in the autumn of the present year. Arrangements have therefore been made for a second International Potato shows to be held in the Alexandra Palace, Muswell Hill, on September 28 and 29 next. The prizes will amount to over a hundred pounds, and the subscriptions are headed by one of forty guineas from the Alexandra Palace Company.

—— The three last numbers of the *Illustration Horticole* (English edition) are before us. The coloured plates represent Croton hastiferus, a variety with three-lobed yellow variegated leaves, the central lobe being the longest; five new Gloxinias, raised by M. DUVAL, of Versailles; Clidenia vittata, a handsome Melastomad, with a broad central band of white traversing the centre of the leaf; and Cocos Weddelliana, too well-known to demand further notice at our hands. Oncidium tigrinum, a handsome Oncid or Odontoglot, for it has been referred to both genera, has a large yellow lip, and brown barred sepals and petals; it is a handsome "cool Orchid," with a delicious fragrance. Centroselenia lgnea is a curious Gesnerad, with oblong-lanceolate leaves of rich satiny green colour above, purple beneath; the flowers are white, and the plant a handsome stove plant. Begonia Frœbelii has been recently alluded to in our columns. The purple-leaved Peach makes a handsome plate—we have not seen the tree growing so. Aralia? Veitchii is an elegant decorative plant, well known in our exhibitions. Todea Wilkesiana, a fine Tree Fern from New Caledonia, with stems not exceeding 3 feet in height, and deeply cut translucent fronds. As we have already stated, the English edition is now discontinued, but the French edition is continued, and we see with pleasure that M. FOURNIER, a very competent botanist, has assumed the duties of editor.

—— There will be a national horticultural exhibition at ROME from May 6 to 14, the first of its kind, as we learn from the *Bulletin* of the Royal Tuscan Horticultural Society, that has taken place in that city. It is likely to be "*una vera festa nazionale.*" From the same journal we learn that a similar exhibition will be held at Genoa on April 30.

—— The *Gartenbau Gesellschaft* of VIENNA announces the holding of a great horticultural exhibition in that city from April 29 to May 4.

—— The January number of the *Monatschrift* of the Royal Prussian Horticultural Society, Berlin, contains a coloured plate of Acidanthera bicolor. Among the articles is a translation of Professor DYER's article on the Papyrus, which appeared in our columns last year.

—— The Horticultural Society of ERFURT propose to hold a great exhibition in that city from September 9 to 17. The secretary is Herr RÜMPLER, Erfurt.

—— The apparent leaves of the species of RUSCUS, to which genus the BUTCHER'S BROOM, the Alexandrian Laurel, and other species commonly grown in gardens belong, are considered by botanists not to be leaves at all, but leaflike branches. One great reason for this supposition is the fact that the flowers are produced from these organs. Now flowers do not grow from or out of leaves, but they do spring from branches. Such is the botanical canon, and one which, for the sake of convenience, we are disposed to assent to—always with a reservation, however, because we do not believe it to be wholly true. We do not intend to discuss this point here, our sole object being to call attention to a singular malformation, specimens of which are now before us, in which the free ends of the leaflike branches of Ruscus hypoglossum are deeply divided, some into two, others into three lobes. The division in some cases reaches quite down to the point whence the true leaf or bract subtending the flowers proceeds. The occurrence is worth noting, but we do not see at the moment that it proves anything with regard to the branchlike or leaflike nature of these bodies. In many species of Asparagus the division is carried to a much greater degree than in the case of this Ruscus.

—— We clip the following from last week's *Field*:—"Mr. J. BERNHARD SMITH brings us a portion of the root of a tree to show the EFFECT OF THE ESCAPE OF GAS from the mains into the soil. It is part of a root of a tree being dug up in Piccadilly, in order to plant a young tree in place of one that has died. Some fresh mould was put into the hole, and another young tree planted. The wood is quite fœtid from being saturated with gas, and well shows the way in which London soil is poisoned for tree life."

—— A writer in the *Chronique de la Société d'Acclimatation* recommends the cultivation of the one-flowered or new Leviathan SUNFLOWER for the seeds (achenes) to feed fowls. They are of a somewhat heating nature, and should, therefore, be given in moderation. In spring, during the laying season, they will probably be found useful to promote laying. The principal point to be observed in the culture of the Sunflower is early sowing, in order to ensure perfect maturity before the cold weather returns. Strong plants should be ready to turn out early in May.

—— The *Bulletin d'Arboriculture* for January contains a descriptive report on the Peaches and Grapes exhibited at the Ghent fruit show last autumn, the description being mostly of sorts well-known in this country; a coloured plate of a new Grape, named, after the Burgomaster of Ghent, Count de Kerchove. This is a golden Muscat Grape, with rounded berries of moderate size, said to be of good habit, and raised by M. BESSON, of Marseilles. M. VAN HULLE has an article on the Arboriculture of Denmark; M. BURVENICH one on a plan of bending down all the branches of a fruit tree, advocated by DOLIVOT, and which has certainly many claims to consideration.

—— It is not very often that we find the FLOWERS of a tree or plant employed AS AN ARTICLE OF FOOD. Such instances, of course, are not wanting; the capers of our "caper sauce" are well-known to be the flower-buds of Capparis spinosa, or of Zygophyllum Fabago, which latter are occasionally substituted for real capers. In many parts of India, however, Dr. BRANDIS tells us that the flowers of a Sapotaceous tree, Bassia latifolia, form a really important article of food. These blossoms, which are succulent and very numerous, fall by night in large quantities from the tree, and are gathered up early in the morning; they have a sweet but sickly taste and smell. They are then dried in the sun, and sold in the bazaars. An ardent spirit, which is strong and intoxicating, is distilled from these flowers by the hill people, who also eat them either raw or cooked, often with parched grain; they are also put in sweetmeats. The blossoms of another species, B. longifolia, are employed in a similar manner by the natives of Mysore and Malabar, where it abounds; they are either dried and roasted, and then eaten, or bruised and boiled to a jelly and made into small balls, which are sold or exchanged for fish, rice, and various sorts of small grain. The flowers of both species are also eaten by owls, squirrels, lizards, jackals, &c.; and ROXBURGH mentions a report that the last-named animals "are apt to grow mad by too much feeding on them," especially in the time of blossom.

—— In France 2,000,000 hectares, or nearly 5,000,000 acres, are devoted to VINE CULTURE, and the average production of wine exceeds 50 hectolitres (about 176,000,000 gallons), valued at two and a half milliards of francs, or £100,000,000. It is estimated that about 90,000,000 gallons of wines, spirits, and liqueurs together are annually exported from France, of a total value of £16,000,000. Sparkling wines enter largely into this quantity, upwards of 50,000,000 bottles being exported annually. The home consumption of wine in France is about 25 gallons per

head of the entire population. The foregoing figures, taken from the *Chronique de la Société d'Acclimatation*, will give some idea of the importance of this industry in France, and the urgent need of an efficacious remedy against the spread of the Phylloxera. The same journal gives the average production of Spain as 30,000,000 hectolitres; Italy, 33,000,000; Portugal, 4,000,000; Austro-Hungary, 174,000; and Roumania at 600,000 hectolitres: making a total of 67,774,000 hectolitres, or about 1,500,000,000 gallons. Then there remain all the German wine-producing countries, and those of southern Russia, both yielding enormous quantities. In proportion to its capabilities Greece produces very little wine, the greater part exported coming to England.

—— In the *Journal of the Statistical Society* we find the following STATISTICS by Mr. W. E. STARK, relating to the COLONY OF VICTORIA, Australia. Out of the area of the colony (56,446,720 acres) only 9,397,849 acres had been sold or granted up to 1873, leaving 47,000,000 still for disposal. So there is abundant scope for the naturalist to pursue his investigations in the field. In 1873, 964,996 acres were enumerated as being under cultivation. Of this area 349,976 acres were under Wheat, producing 4,752,289 bushels; and 152,934 acres under other cereals. The culture of the Grape Vine is rapidly extending. In 1873 there were 5222 acres of vineyards. In 1857 only 280 acres were returned for Vines; and in 1874 there were 9,000,000 Vines, producing 105,650 cwt. of Grapes, 85,279 of which were made into wine (562,713 gallons) and brandy (100 gallons). This branch of industry, Mr. STARK informs us, is steadily increasing. There were 38,349 acres of Potatos in 1873, and 583 of Tobacco. Gardens and orchards covered an area of 16,060 acres. The average yields of Wheat and other cereals strikes us as remarkably low for a new country, though this is probably due to defective cultivation rather than infertility of the soil. For the ten years (1865 to 1874 inclusive) the average produce for an acre of Wheat was only 16 bushels, only half a bushel more than the average for twenty years of an unmanured plot in the Rothamsted experimental farm, and the average yield of Barley, during the same period, was about 20 bushels, which is less than the average produce of the unmanured Barley plots at Rothamsted.

—— The following report on the commercial aspect of the VANILLA CULTIVATION IN RÉUNION has recently reached us. The writer says:—

"The great demand for this perfume latterly in the markets of Europe has brought large profits to the planters, and the plantations have multiplied on all sides to such a degree that the crop exported in 1874 amounted to 20,854 kilos. Unless circumstances arise, which are at present unforeseen, and also by reason of the newness of some of the plantations, the colony can produce in two or three years from 50,000 to 60,000 kilos. of Vanilla. I learn that this cultivation is also extensively carried on in Madagascar and Mauritius, and it is feared by persons interested that this extended cultivation will create a supply too great for the demand, or, in other words, that prices will go down. The cultivators of this product in Réunion have been much disturbed by a recent discovery made by a German chemist who has succeeded, it is stated, in extracting from the Pine tree an essence of which the perfume is identical with that of Vanilla. The essence is said to be called Vanilline, and can be offered in the market at a very reduced rate. This intelligence, although received with a certain amount of doubt, gives much cause for anxiety in Réunion. Vanilla is cultivated more particularly by the small proprietors than by the great; its produce assists a part of the population who are averse to work, and the small extent of whose lands has not allowed them hitherto to think of attempting a cultivation like that of Cane, Maize, Manioc, or Coffee, which would require the assistance of labourers or field hands. Provided the soil be fertile, moist, and shaded, it needs but a small space to accommodate thousands of Vanilla plants, and this produce, being of considerable value, yields to the cultivator a profit which no other plant in the island can give. The crop of 1874 sold at an average of £5 per kilo., therefore a sum of £104,000 has circulated principally among the small planters and coloured population. It would be rash to expect such a sale in future, but even admitting a reduction of £2 per kilo., it would still be advantageous to continue this cultivation."

It seems that Cloves, Mace, Nutmegs, Pepper, &c., which were at one time produced in the island in comparatively large quantities, are at the present time an insignificant produce.

Home Correspondence.

Eucharis amazonica.—This, when well-grown, is one of the most useful plants in cultivation. On a group of ten plants now growing in the gardens at Rendlesham Hall may be seen 250 spikes of bloom, and each spike will average seven flowers. In the Orchid-houses at the same place a small plant—not more than 6 inches across—of Sophronites grandiflora has seventeen blooms. It is one of the best varieties I ever saw. There is a nice display of Phalænopsis just now, altogether thirty spikes of bloom. *R. Keen, Campsey Ash, Wickham Market.*

Limekiln Heating.—Most of your readers will be disappointed in Mr. Moule's rejoinder to Mr. Kinnear's letter. Mr. Moule stated that he considered chalk to be really a subsidiary fuel, and gave his reasons for so doing. Mr. Kinnear has shown, by an elaborate argument, that this cannot be true. Instead of meeting this argument Mr. Moule now says that he has neither "time nor inclination" to do so, and asserts that Mr. Kinnear has ignored his so-called "facts." I think this is scarcely the way to meet a fair opponent. You are probably aware that the system of heating horticultural boilers by the intervention of limekilns is not new. It was tried eighty years ago at Billing, in Northamptonshire, and also at Bishopscourt, in Ireland, but seems to have been discontinued at both places. It was again revived about twenty-five years since, and again abandoned. I venture to predict that it will meet with the same fate now. The advocates of the system say that wherever it has been introduced, the result has been a great economy in fuel. This may be quite true, but does not prove that a still better result might not have been obtained without the kiln. There is no mystery in the process of heating water or producing steam, but the one requires just as good a boiler as the other. During the last twenty-five years steam-boilers have undergone a complete transformation, both in general construction and arrangement of heating surfaces; but the horticultural boilers of the present day can only be fitly compared to the old-fashioned "waggon" steam-boiler of the days of Watt. The general arrangement of a really good boiler for heating water should be a fire-box sufficiently large to contain fuel for ten or twelve hours' consumption, and a very large extent of flue surface disposed in the form of tubes, through which the products of combustion pass, somewhat similar to the ordinary type of marine steam-boilers. For every 1000 feet of 4-inch pipe I would recommend not less than 25 square feet of fire-box surface, exposed to the direct action of the fire, and 100 square feet of tube flue surface. Such a boiler as this is expensive, but the first cost is soon saved. If it would interest your readers I will send you drawings of a boiler of this description, which I have had made to my own design, and which has proved very easy to work and economical. *J. G. H.* [Please do. EDS.]

Sex in Seeds and Spores.—My remarks on this subject, as quoted by your correspondent "W. B. H.," were directed against the idea of "male spores" and "female spores," as published in a recent paper by Van Tieghem in the *Comptes Rendus* (Feb. 8, 1875). I regret that my words did not properly express my meaning, for I did not mean that I considered the ovule belonged to the female sex (or I should then be on the same side with Van Tieghem), but that the ovule was female in the sense of its belonging to an essentially female organ—the ovary; in the same way as pollen might be termed male or the element peculiar to male organs. The following quotation, from a recent paper of mine published elsewhere, will show that my views on the subject of sex in seeds are the same with those of your correspondent:—

"In the vegetable kingdom nothing is more common than to find so-called male or female plants changing their characters. Males will, under altered conditions, carry female organs, and females will produce anthers and pollen, which conclusively shows that not only are ovules, spores, seeds, and eggs not in themselves male or female, but the produce itself of these eggs is inherently hermaphrodite. It is convenient to name many animals and plants 'male' and 'female,' because they are almost but not entirely so. Even in the case of the Equisetaceæ, Sachs is obliged to qualify his terms regarding these plants, and say that on the germination of the spores 'the prothallia are, in general, dicœcious' (*Handbook*, p. 363). And on Ferns the same qualification of terms is found, for under the latter head he merely says (p. 343): 'The prothallia show a tendency to be dicœcious,' and, 'Van Tieghem's idea of male and female spores in the Agaricini is altogether untenable; such a thing as a male ovum or spore is as unreasonable as a female spermatozoid or female pollen-grain. Seeds of all sorts are capable, on germination, of producing either or both sexes, though it is common enough to see one sex exalted at the expense of another. Even in the highest mammals the males have a trace of the female in their subordinate mammæ and other characters, and similar characters which show a trace of the male are found in most female animals.'"

It would appear from the editorial note published last week that no less than twenty-four years have passed since the note on alternation of sexes in the Hop was published in the *Gardeners' Chronicle*, therefore if convenient it might be advisable to reproduce the pith of this note just now. *W. G. Smith.*

Plumbago rosea.—The very little I said in favour of Plumbago rosea appears to have upset Mr. Ollerhead's equanimity in a remarkable manner. In his first communication relative to the above he stated that it would only last a few hours in a cut state, to which I replied that if the plants were subjected to a certain course of treatment the flowers would be improved in texture, and would then stand tolerably well. I further added that, if placed in window recesses away from dry heated air, they might be kept fresh for a week, and that I had so had them for that time. To this your correspondent demurs, and after again placing some in the body of a dry, gas-heated room, in the most trying position possible, comes triumphantly back to the subject without adducing any fresh facts whatever, but merely to state that he had used it with the same result as before. If he wished to give it a fair trial, why place it in the dry gas-heated apartment he speaks of? Mr. Ollerhead further remarks that he finds no difference in the lasting properties of the flowers cut from plants subjected to a cool temperature, with their heads well up to the glass, over such as are allowed to open in the strong, moist heat of a stove. It is very remarkable, to say the least of it, that Plumbago rosea should be the only plant whose flowers are not improved in texture by being subjected to such a course of treatment. If your correspondent had wished to return to the subject, and had done so at an earlier date, while the Plumbago was still in bloom, any one at all interested could easily have tested the matter for themselves by placing a spray or two in the position I spoke of. If it is so very evanescent as only to last a few hours, it can hardly be worth growing in the quantity your correspondent speaks of having it in, and the sacrifice of a few unexpanded buds when cutting the bloom would appear but a small matter in his case. As to these, I always look on them, in their various degrees of forwardness, as one of the principal adornments, and there are few flowers that can be cut without them even were it desirable to do so. I have no interest in lauding the merits of this or any other plant beyond its real value, but if the one in question is fit for no other purpose but to waste its beauties in the strong moist heat of a stove, or to cause a pang of regret at seeing it dried and withered after standing in a room for two or three hours, it is not worth much, but my experience of it is of a different kind. My only object in noticing it was to show how even thin-petaled flowers might be improved and kept in a fresh state if they were placed in certain positions favourable to their delicate nature. Others who have used the Plumbago in a cut state may be inclined to give their experience of it. *J. Sheppard.*

Keens' Seedling Strawberry.—We have usually looked upon this kind as one of comparatively modern introduction, but the celebrated Tom Ingoldsby in his veracious legend of the *Bleeding Hart Yard*, a tale of the days of Queen Bess, puts its almost mediæval origin beyond doubt. In the midst of the magnificent "spread" set out in Sir Christopher Hatton's mansion, a gentleman that shall be nameless joins in the dance, but he makes frightful havoc in the arrangements—

"See! see!—he's kicked over a table and chair!
There they go!—all the Strawberries, flowers, and sweet herbs,
Turned o'er and o'er, down on the floor.
Every caper he cuts oversets or disturbs
All the 'Keens' Seedlings and 'Wilmot's Superbs.'"

This surely is conclusive evidence; for who would doubt the veracity of clever Tom Ingoldsby? *A. D.* [Who, indeed? EDS.]

Black Holly Berries.—Are not the Holly berries mentioned by Mrs. Watney those of the previous year? Holly berries will remain on the trees for a very long time, if not taken by birds or other things. It is not at all an uncommon thing to find a part of the crop of two years on the tree at the same time, and on one occasion Mr. G. B. Wollaston showed me some berries on a tree in his garden which had ripened three years before, that is, there were portions of three years' crops on the tree at the same time. I need hardly add that all the old berries were quite black. *Walter W. Reeves, Royal Microscopical Society, King's College.*

The Strawberry Grape.—It may interest Mr. Malleson (p. 147), to know that the Strawberry flavour possessed by the Strawberry Grape resides only in the

skin. It has always been looked upon merely as a curiosity—the peculiar mucilaginous flesh, that does not readily melt in the mouth, together with the thickness and toughness of the skin, being generally objected to. *De Pontibus.*

Primulas.—We have had some very fine blooms of Primulas this year, and on three or four plants we have had blooms come in the same way as the one enclosed in the box. May I ask if it is worth saving seed from? We think them grand, as many of the plain flowers are as large as these. *J. L. P. P.* [The twin flowers are simply monstrosities, and not worth saving. You should certainly take care of the seed from the normal flowers. EDS.]

Horticultural Spelling Bee.—Judging by results at a recent spelling bee held at Southampton, it would seem that the general public are by no means *au fait* in garden nomenclature. One person came to grief by spelling "Asparagras," another followed suit in "Broculi," and a lady was thrown out with "Camellia," but how the speller was in fault, or whether the dictionary was to blame, is not stated. A fourth gave "Helietrope," and yet another rendered a well-known Pear as "Jargonel." These were by no means difficult words, and the failures indicate that horticultural knowledge amongst even the educated masses is at a low ebb. *A. D.*

Plant Names: How to Pronounce Them.—Mr. Leo Grindon, in proposing that we should devote an evening now and then to a botanical pronouncing bee, has quite forgotten to mention how the correct pronunciation on such occasions is to be decided. Obviously, it will not answer to have even a botanist "of presumably good education" for referee, as such men, he says, frequently commit "unpardonable errors" in their vocalisation, and I am not aware that any book or treatise on the subject exists which might be appealed to as a final authority. Mr. Leo Grindon must know that there are many Greek words the accentuation of which cannot be ascertained by "simply consulting a Greek lexicon," even supposing an aspiring plantsman has mastered his Alpha Beta, while the pet long or short of an educated umpire might be easily disposed of by citing old Alvarez' "Nomina Græcorum certâ sine lege vagantur." *Ebor.*

The Whitloef Chicory.—In reference to a leader paragraph, which appeared in your issue of th 29th inst., we take leave to state that the Whitloe Chicory was introduced to the Royal Horticultural Society by our firm, who, unsolicited, sent the packet of seed last summer to Chiswick Gardens for trial, and the plants lately exhibited were grown from this seed. *James Carter & Co.*

California as a Home for Horticulturists.—In your issue of January 29 I read with much interest the letter from Mr. J. R. Cross to Mr. Miller, of Combe Abbey, and was disappointed at not hearing more on the subject in your later issues. I am deeply impressed with the overcrowded state of horticulture in this country, and this leads me to believe that if young gardeners had security for employment, with fair remuneration on arriving in California, there would be numbers that would proceed thither. I fear there is a much greater obstacle in the way than "home sickness," and that is, that young gardeners are not burdened with too heavy purses; and the thought of arriving in a foreign country with, perhaps, an empty purse, and not finding employment, is the greatest drawback I know of. But I trust some of your correspondents will take up the subject, and show whether a guarantee for employment is practicable or not. *Thomas Stoddart, Axwell Park, Durham, Feb. 7.*

Ramsay's Solid Red Celery.—In the report of the Celeries grown at Chiswick, published in your issue of January 22, the above-named variety, Major Clarke's Solid Red and Turnmoss Red are placed as synonyms of the Leicester Red; but I think the last three names should be synonyms of the first. I have grown Ramsay's Solid Red Celery for fourteen years, and sent out the seeds 12 years ago, at which time neither of the other names were in circulation. I know that the difference between mine and the Leicester Red is very slight, a change of soil making a difference in size and quality. *James Ramsay, Gr., West Retford, Notts.*

The Weather of 1875.—Mr. D. Melville's notes regarding the weather in the far north during the year 1875 (see p. 149) are exceedingly interesting, and may possibly be more so when compared with that experienced in other and distant parts of the island. If you will kindly permit me to do so, I will endeavour to supplement them with a few remarks relating to the weather experienced in this part of East Anglia, 4 miles north from Bury St. Edmunds, and some 50 miles south-west from Lowestoft, which is the extreme easterly part of the island. As stated by Mr. Melville, magnificent weather was being enjoyed in Sutherland while most of the counties of England were suffering from an excess of rainfall, resulting in devastating and disastrous floods, more particularly during the months of July and November. According to Mr. M.'s notes the total rainfall of the year 1875 was, in Sutherland, 27.5 inches against 30.70 inches in 1874, and 34.20 in 1873. At this station, in Suffolk, the total rainfall of the year 1875 was 29.18 inches against 17.83 in 1874, and 24.72 during 1873. In Sutherland the number of days on which 0.01 of an inch and upwards fell was 157, in Suffolk 152. The heaviest fall during twenty-four hours occurred in Sutherland on July 23, amounting to 1.10 inch; at this station the greatest fall occurred on July 20, when 1.05 inch fell. In Sutherland the three wettest months were November, with 4 10 inches; January, with 3 70 inches; and October, with 3.10 inches. In Suffolk the three wettest months were July, with 5.29 inches; November, with 5.26 inches; and October, with 3.24 inches. In Sutherland the driest months were March, 1.10 inch; May, 1.40 inch; February, 1.50 inch. In Suffolk the driest months were March, 0.42 inch; August, 0.88 inch, and April, 1.05 inch In Sutherland the maximum temparature in the shade was reached on July 21, being 78°. At this station the maximum temperature was not reached until August 16, when it was 84°, and at a station some 8 miles distant in the same county it reached 89° on the same day. In Sutherland the minimum temperature appears to have occurred on January 1, 21¾°; while in Suffolk this occurred on December 3, at 16°. In Sutherland the highest reading of the thermometer was taken on March 17, viz, 30 72 inches, and the lowest on January 24, viz., 28.68 inches; in Suffolk the highest reading was 30 60 inches on February 18, and the lowest, 28.20 inches, on January 14. The weather here throughout the month of January was almost preternaturally mild, although succeeding a December of more than usual severity, and being in turn succeeded by a February of exceedingly inclement weather. During the entire month of January the mercury on only six occasions fell to the freezing point, and on no occasion did snow fall during the month. The mean or average temperature was unusually high, being 41°.7, while that of the preceding month of December was only 30°.5, and that of the following February, 34°.6. During the latter month there were only five nights on which the thermometer did not record a fall to or under the freezing point, the greatest depression being 17° on the night of the 23d. Altogether the weather during this month was a singular contrast to that of the month which preceded it. The month of March was distinguished by cold and drought, with occasional slight falls of snow, a prevalence of cold easterly wind, and a rainfall under half an inch. Very cold easterly winds also prevailed during no less than twenty days during the month of April; swallows, nevertheless, made their first appearance here on the 19th day, the nightingale was heard on the 21st, and the cuckoo on the 26th. Fine weather was experienced during the greater part of the month of May, with an absence of the usual late or May frosts, the mercury having never fallen so low as the freezing point during the month. Warm weather, with frequent thunder-storms were experienced during the month of June, but the weather during the greater part of July was comparatively sunless and cold, the maximum temperature falling under that of June, and the mean or average barely exceeding it. This month, however, is chiefly memorable on account of its heavy and continuous rainfall, and consequent destructive floods. The greatest fall during any twenty-fours during the year occurred on the 20th of this month, amounting to 1.05 inch, and that of the following day amounted to 0.98 inch; so that upwards of 2 inches fell during the two consecutive days. Fortunately the month of August proved dry and warm, with a rainfall under an inch. September was also dry and warm up to the 21st day, when a somewhat wet period set in. October proved a gloomy, somewhat sunless month, with considerable rainfall, and a prevalence of easterly wind. The devastating floods of July were greatly exceeded by those of November, although the respective rainfalls of the two months were nearly alike—that of July being 5.29 inches, while that of November was 5.26 inches. December brought with it a deep fall of snow and a considerable depression of temperature, apparently indicating the commencement of a very severe winter; but on the tenth day a favourable and unexpected change set in. The snow, which covered the ground to a depth of some 15 inches, rapidly disappeared, and the weather became mild and almost genial, and continued so until the end of the month, the mean or average temperature being 37°.7, or 7° in excess of the corresponding month of the year 1874. The rainfall of the year 1875, being 29.18 inches, is in excess of the average of the preceding sixteen years, but falls, nevertheless, under that of the years 1860 and 1872—that of 1860 being 33.20 inches and that of 1872 34.64 inches. The average rainfall of each month during the last seventeen years shows the month of October to be the wettest, and April to be the driest. The following will, however, show the average fall of each month, placed according to its respective amount, viz.:—

	Inches.		Inches.
October	2.61	August	2.01
July	2.42	May	1.97
September	2.34	January	1.89
November	2.33	March	1.77
December	2.31	February	1.56
June	2.30	April	1.43

P. Grieve, Culford, Bury St. Edmunds.

Incorrect Spelling.—The evil touched by your correspondent "R." in his complaint (page 179) that certain botanical names are mis-spelled in the *Evening Echo*,—is of very wide-spread extent. A newspaper, even if most ably conducted, cannot print a report of half-a-dozen lines on a technical subject in botany or zoology, without this sort of spelling. Take any one of the paragraphs which the *Times* condescends to devote to the exhibitions of the Horticultural or Botanical, and you will not fail to see a number of glaring errors in orthography. But is the cause of this evil truly hit by "R."? Is it that the reporter does not know how to spell the words he writes? Surely no. Not in a single case out of a hundred. It is not bad spelling that is at fault, but bad writing. The rapid mode of forming the letters, which every one is now obliged to practise, necessarily assumes that the reader (or the *compositor*, when the matter is to be printed) has aids to understanding the document, besides the mere forms of the letters;—he catches the general sense; he knows what the writer will probably say; he knows what words will most likely be employed; in general, if only a single letter in the word be certain, the word is instantly suggested to the mind; and this is at once tested by the appearance and the number of the formless letters, and by other considerations, almost without a conscious effort. But if the words be unknown to the reader, or unfamiliar, these helps are wholly wanting. Thus, to a compositor quite sufficiently educated to decipher ordinary current-hand, botanical names are perhaps totally unknown; and if these be written in the usual rapid and careless way, he has no clue to their component letters; and if the proof be not submitted to the author, small blame to the printer if his article be full of blunders. Taking your correspondent's examples, the two closing lines contain only common English words; and the printer has had no difficulty. Why did he set-up "Frices"? No doubt the author had written "Ficus," but he had written it so that only the initial and the terminal were recognisable; the "F" and the "s" were connected by four curves, which might just as well do duty for "rice" as for "icu." To the compositor's mind there was nothing to suggest Ficus, rather than Frices, or Furis, or Feecis, or half-a-hundred other combinations of letters usually represented by mere touches. But I hinted that this is only one form of the mischief, which is far more widely spread than this. In the correspondence of every-day, how often we receive letters, in the body of which we have little difficulty, but of which the signature, and perhaps the place of address, are hopelessly illegible! Why? For the very same reason: *we have no clue to guessing*. We cannot possibly guess a proper name. Gosse, if written in this style, may be Gope, or Gassi, or Gerfsi, or almost any other uncouth assemblage of vowels and consonants. Now for the remedy. It is not learning to spell better. And I do not recommend a forming of every letter in copy-book style. This would be hopelessly quixotic. But the evil would be met if only writers would have the consideration to put themselves for a moment in the place of their own readers. Then they would write such casual words as common sense tells them will not be spontaneously suggested to the reader, in plain rounded copy-book letters; particularly all proper names, and all technical terms. If this simple rule were observed, how many thousands of editors and printers, not to mention private friends, would be gladdened! *P. H. Gosse.*

Penny-cress (Thlaspi arvense).—Has this old name any reference to the "Dr. Penny, a famous physition of London in his time," mentioned by Parkinson in the *Theatre of Plants*, p. 666, A.D. 1640? Dr. Prior says, "from its round flat silicules resembling silver pennies." *G.*

Boston Market Celery.—In Mr. Barron's repor on Celeries he mentions this variety as not being used to produce a single bead like the ordinary Celeries, but as forming a number of small heads, and that it begins to run to seed almost as soon as planted. During five years' culture of this variety in the United States I found that to have it in good condition it was necessary to take off all the side-shoots, and allow only a single head to grow. I am aware a good many adopt the many-headed plan

of growing it around Boston, but it does not keep so well when so grown as when only a single head is retained. It is strange that it runs prematurely to seed in England. I had no trouble with it in that respect, nor did I hear any one complaining about it doing so there. This variety stands pre-eminent for market around Boston, and, although dwarf in habit, is one of the best white Celeries I ever grew, either in this country or in the United States. *Mansfield Milton, Williamston, Insch, Scotland.*

A Step in the Right Direction.—I note by a paragraph in your columns that the Wimbledon gardeners have obtained leave to meet at the lecture hall once a fortnight, to discuss matters relative to horticulture, &c. This is certainly a step in advance, and as it should be. This recalls to my mind the days of yore, when we used to meet to discuss the merits of the Pink, Auricula, Tulip, &c. Few at the present day are aware of the benefits derived from such meetings. If private gentlemen and amateur growers would consult more with each other, or contrive in their respective neighbourhoods to have such meetings, which involve no expense, they would learn probably more in one year than they do now in seven. Societies might be formed with no other object than periodical conversations and discussions amongst the members, and these conversations and discussions might be promoted by the production at the meetings of any plants, flowers, fruits, or vegetables that any members might have in their possession, in a state of showing—simple common productions well grown, and therefore fine of their kind. Subjects in flower of kinds not often bloomed, others rare, or scarce, or new, all tend to gratify those who have not got them, and naturally raise discussions on the mode of treatment, the nature of the plant, the places where found, and the period when as well as the persons by whom they were introduced. By placing the subscription to such societies on the lowest possible scale, humble but excellent gardeners and florists, frugal but clever men, and inexperienced but enthusiastic cultivators, would be able to join it. It would be morally impossible to attend such a meeting a single evening without learning something. Let other places follow in the same track as the Wimbledon gardeners, and may God speed their work. *Edward Bennett, Rabley, Herts.*

Hardy Palms, &c.—I am much disappointed at the reply of Mr. W. Wildsmith in answer to my question, which, in fact, is no reply at all, and I am under the impression that he is not quite at home in Palm-land. It is well known that Chamærops Fortunei and C. humilis are the hardiest of the species; at the same time I have no hesitation in saying that there are no plants of C. humilis in this country growing in the open air for the last six years without protection, and 10 feet high — this being the average height of this species in the south of Europe. I fear there is some mistake here. The Palms most hardy, after the above-named, that I have met with, are Caryota mitis, Phœnix reclinata, P. tenuis, Seaforthia elegans, and Areca sapida, the last being the most hardy; but, after all, there is very little satisfaction with them, as they require considerably more protection than a single, or even a double mat, wrapped round them. One great thing, I find, is to elevate the plants on a mound 2 feet or 3 feet high. Aralia Sieboldii is well known to be hardy; Grevillea robusta has proved so, so far; Eucalyptus robusta is as hardy as E. globulus, if not more so; Phormium tenax may be as hardy as a Braganza Cabbage, but no other. In conclusion, I advise those who have got good plants of Palms to winter them under glass, and not trust to single mats. *Owen Lloyd.*

Titmice.—In the *Gardeners' Chronicle*, Jan. 29, a Devonshire correspondent on "Natural History" informs us he feeds titmice daily with the same article of food as sparrows. Are not the former unquestionably insectivorous? Does he confound the white with the pied wagtail? Many ornithologists doubt such a species as Motacilla alba. Are black thrushes "indigenous" to Devonshire gardens? Enlightenment on the above will be gladly received. *F. G. S. Rawson, Thorpe, Halifax.*

Flowering of Palms.—I have a Chamædorea graminifolia, about six years old, for I bought it, a small seedling, in 1870. It is now about 6 feet high, with a stipe beautifully green and smooth, about three-quarters of an inch in thickness throughout. This winter the five central joints of this stipe have pushed out each a thick pointed bud, the uppermost two of which remain dormant; but the lowermost three, beginning much below mid-height, have developed into as many slender pendulous spikes of blossom. Each of these consists of a stiffly straight green axis, a foot long, bearing on its terminal moiety eight to twelve branches. These are from 5 to 10 inches long, of uniform thickness (that of whip-cord), dependent from their bases, studded with spirally-set tiny knob-like flowers, no larger than the small letter "o" of this print, in which the trine structure—doubtless the three convergent sepals as yet unopened—can be readily seen with a pocket lens. It is rather difficult to count them; but I estimate that there are about 300 flowers on the branch which I have pleasure in submitting to your autopsy, and which is a fair sample. If any of them fruit, I shall hope to let you know. *P. H. Gosse, Sandhurst, Torquay.* [The flowering of Chamædorea is by no means uncommon. EDS.]

BRITISH GARDENERS.—XXXV.

WILLIAM HILL.

MR. HILL, the subject of our present portrait, will be best known to those outside the circle of personal friends by his success as a cultivator and exhibitor of

Grapes. Those who know him more intimately, and know also the fine establishment over which he has now for a quarter of a century so worthily presided, will be quite ready to endorse our statement that Mr. Hill has shown himself to be a master-hand in all branches of the profession. Of the horticultural training which has led up to this he gives us the following particulars:—

"I was born at Silsoe, in Bedfordshire, in 1824. My first start in gardening was in the year 1838, at Bedgebury Park, Kent, then the seat of Viscount Beresford, but I was there for a few months only, as my parents left the neighbourhood, and I lost sight of gardening (or was not fully occupied) until March, 1840, when a premium of £10 was paid to Mr. Cockburn, Caen Wood, Highgate, under whom I served for three years. In the autumn of 1843 I left Caen Wood for the Horticultural Gardens, Chiswick, when I entered the fruit department under the late Mr. R. Thompson. While at Chiswick I had an excellent opportunity of becoming acquainted with fruits, particularly Apples and Pears, as the unpacking and arranging for comparison fell to my lot, as also the collecting of scions for all parts of the world. This was Chiswick in its palmy days, when Mrs. Lawrence, Mr. Green, Mr. Cock, and a host of others used to exhibit, and when there was also some good fruit shown, and thousands of visitors. In those days it was not an unusual thing to see the rank of carriages extending nearly to the Broadway, Hammersmith, while the whole of Turnham Green (this was previous to the church being built) was covered, and they extended a long way towards Kew. What a change has come over the scene!

"In April, 1845, I left Chiswick for Trentham Garden, under Mr. Fleming, to gain experience in the early forcing houses among Vines, Pines, &c. At this time extensive alterations were going on. In April, 1846, Mr. Fleming was applied to for a young man for the vineries, &c., at Nuneham Park, Oxford, and I left Trentham for Nuneham, where I remained until November, 1849, returning again to Trentham; but previous to this, however, in July, Mr. Fleming had recommended me to the late Mr. Sneyd, with the understanding that I was to remain at Trentham for twelve months previous to going to Keele, to become further acquainted with the gardening peculiarities of the soil, and the climate of North Staffordshire, as the late Mr. Sneyd, when he engaged a gardener, wanted one to remain in his service.

"On October 17, 1850, I entered on my duties at Keele Hall. I shall never forget a remark my late employer made to me: 'Hill, I am particularly anxious to have good Grapes, as they are the only fruit I eat.' In this respect I have every reason to believe he was perfectly satisfied. For many years we were never without Grapes all the year round; and with regard to their quality the metropolitan exhibitions will afford the best criterion. The following is a list of the prizes which I took for Grapes during ten years, viz., from 1853 to 1863:—

"Royal Horticultural Society of London: twenty-two 1sts, eleven 2ds, and six 3ds.

"Royal Botanic Society, Regent's Park: twenty-three 1sts, eight 2ds, and thirteen 3ds.

"British Pomological Society: two 1sts.

"Crystal Palace Company, Sydenham: fourteen 1sts, seven 2ds, and two 3ds.

"Many of our best productions have been obtained since the above date (1863). The finest Black Princes and Buckland Sweetwater exhibited on the opening day at South Kensington were the produce of a graft put on Black Hamburgh in 1860. These received 1st prizes at South Kensington on the Saturday, and, on the following Wednesday, two 1sts at the Regent's Park, the same Grapes being exhibited. There was something worth competing for at that time. The highest prize I ever received for a single dish of Grapes was at Regent's Park, for Black Prince, £4; and the lowest at the Royal Horticultural Society, South Kensington, 1s. 8d., with the following note—'I have the pleasure to enclose a remittance of 1s. 8d., being the amount of your prize account for the last show'!

"During the twenty-five years I have been at Keele, I have had considerable experience in the formation of new Vine borders and the renovation of old ones. I have also had much practice in planting forest trees and evergreens of all descriptions, both large and small, as well as in the formation of woodland walks by the mile, green carriage drives, &c.

"I must refer your readers to the *Gardeners' Chronicle*, 1871, p. 1452, for a full description of Keele, where I have spent my happiest days, and met with great kindness, not only from my previous but also from my present employer."

Forestry.

MEASUREMENT OF STANDING TIMBER.—We are favoured by Mr. Lea, of Stone, near Kidderminster, with a description of a novel method of finding the contents of standing timber. The theory is founded on the first eight propositions of the Sixth Book of Euclid, and in practice our correspondent claims for his method an accuracy superior to the systems ordinarily employed.

To Ascertain Height of Tree.—Having procured a strip of wood (A, B) Fig. 39, or other material, of any convenient length—say 6 inches, and having attached to it a string (C, D) three times the length of the strip, capable of sliding up and down it, the observer must place himself at such distance from the tree that the top and bottom of tree and strip—viz., the points D A E, D B F—are each in line; then the height of the tree, in feet, will be equal to the observer's distance, in yards, from its base. The string must be kept parallel to the ground, and of course tight, its extremity, D, being held close to the eye, and the strip held in a vertical position, or rather parallel to the tree.

To Find Quarter Girth.—Take the quarter girth 5 feet from the bottom and deduct therefrom the amount in inches, given in the annexed table opposite height of tree; the remainder is the middle quarter girth.

Girth-Deduction Table.

Height of Tree.	Amount to be Deducted.	Height of Tree.	Amount to be Deducted.	Height of Tree.	Amount to be Deducted.	Height of Tree.	Amount to be Deducted.
10	..	20½	1	31½	2¼	42	3¼
10½	..	21		32		42½	
11	..	21½		32½		43	
11½		22		33		43½	
12	1¼	22½	1¼	33½		44	
12½		23		34		44½	
13		23½		34½		45	3½
13½		24		35	2½	45½	
14		24½		35½		46	
14½		25	1½	36		46½	
15	1½	25½		36½		47	
15½		26		37		47½	
16		26½	1¼	37½		48	3¾
16½		27		38	2¾	48½	
17		27½		38½		49	
17½	3/4	28		39		49½	
18		28½		39½		50	
18½		29		40		50½	4
19		29½	2	40½	3	51	
19½	1	30		41		51½	
20		30½		41½		52	
		31					

[Our esteemed correspondent, "W. T. T.," who sent us the above extract from *The Timber Trades' Journal*, says:—"If the engraving is reproduced, a note should be made that the lengths of the string and strip of wood (as drawn) are in the proportion of 18 to 11, and not in the proportion of 18 to 6, as suggested. This

FIG. 39.—MEASUREMENT OF TIMBER.

is not a matter of importance to a mathematician, who knows that whatever may be the proportion between the length of the string and the strip of wood, the same proportion must exist between the man's distance from the tree and the tree's height, when the string and strip are held in the manner explained. But it is of importance to those who are not so experienced, that an illustration should exactly correspond with the printed account of it; otherwise, as in this case, it appears to illustrate that the description is wrong, since it is evident that the man is not three times as far from the tree as the tree is high. It is, therefore, important that any and all differences between illustration and description should be referred to and clearly explained.

Although it is easy to recognise the soundness of the mathematics upon which this rule for measuring the height of trees is founded, there are some difficulties in understanding how to apply it practically.

In the first place the string must be held perfectly horizontally. This is not difficult to continue to do when you have got it into a horizontal position, but the difficulty is to determine whether the position in which you are holding it is or is not parallel to the ground. This may be proved either by the assistance of a companion, if you have one with you upon whose correctness of vision you can depend, or by making a mark upon the trunk of the tree at the same height from the ground that your eye is. In the latter case, when you are at a distance from the tree, you should, on looking along the string, see the trunk-mark at the end of the string, and you may then feel pretty sure that you are holding the string horizontally.

In the next place you have to hold the strip of wood quite upright. This is less difficult than holding the string horizontally, if you hold the stick at an easy and convenient distance in front of you, without its being of consequence how far off your face it is. But it is quite a different matter if you have a string looped round that stick, and are required to keep the string horizontal and the stick vertical. If you have a friend with you who can correct you if the string is not horizontal, you may be tolerably sure of keeping the stick vertical if you hold it at that part where the loop of the string goes round it; but you cannot hold the stick where the string joins it if you are alone, because by so holding it you would be unable to see the mark upon the trunk, and consequently would not be able to see whether the string was horizontal or not. Then, again, if you hold the stick either above or below the loop, the strain of the string upon the stick would be almost certain to throw the stick out of an upright position. Hence it seems that there is no advantage in this over several other modes of measuring tree heights, which have been described in the *Gardeners' Chronicle*.

Nevertheless, the principle might be applied in a way which could be used by any one without assistance. Procure a light rod 8 feet long, let the bottom be shod with an iron point, and the top part be rounded for about 2½ feet; prepare a coil of stout brass wire of such a size that it will slide stiffly up and down the rounded part of the rod; let the two ends of the coil stand out straight from the coil, and let these ends be exactly 6 inches distant from each other; let there also be a string 18 inches long looped round the rod, or rather round the coil after it is on the rod. If this rod be stuck firmly into the ground at what is supposed to be the proper distance from the tree, and care be taken that it is quite upright by plumbing it, the coil may be slid up or down as required, and the string kept horizontal by looping it round the coil at the height of the eye from the ground.

Up to this moment nothing has been said about the measurements being taken upon level ground, or that the observer's feet should be on a level with the bottom of the trunk of the tree; but it is most important to remember that this principle can only be applied under such conditions. By using the proposed rod, and having a mark on the tree-trunk at the height of the eye, it will readily be known on looking along the string whether the observer is or is not on the same level as the tree; and if he is not, he must choose another spot from whence to take the tree's height, or he must alter the elevation of his eyes until they are on a level with the mark on the trunk of the tree." EDS.]

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

FOR THE WEEK ENDING WEDNESDAY, FEB. 9, 1876.

MONTH AND DAY.	BAROMETER.		TEMPERATURE OF THE AIR.					HYGROMETRICAL DEDUCTIONS FROM GLAISHER'S TABLES 5TH EDITION.		WIND.		RAINFALL.
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Dew Point.	Degree of Humidity Sat. = 100.	Direction.	Average Direction.	
Feb.	In.	In.	°	°	°	°	°	°				In.
3	30.04	+0.27	49.1	34.1	15.0	41.0	+ 2.2	37.2	86	S.S.W.; S.W.	S.	0.02
4	29.79	+0.03	43.3	35.1	8.2	38.3	— 0.6	32.9	81	W.N.W.; N.W.	N.	0.04
5	29.70	—0.07	40.2	31.9	8.3	35.8	— 3.2	33.0	90	N.; N.N.W.	N.	0.06
6	29.70	—0.07	38.5	31.4	7.1	34.8	— 4.3	31.7	88	N.; N.N.E.	N.	0.01
7	29.73	—0.04	38.2	31.1	7.1	34.1	— 5.0	30.6	86	N.N.E.; N.E.	N.E.	0.02
8	29.71	—0.06	35.9	30.9	5.0	33.3	— 5.8	30.7	91	N.; N.E.	N.E.	0.00
9	29.69	—0.08	37.4	29.3	8.1	33.0	— 6.1	28.2	82	N.N.E.; N.E.	N.E.	0.00
Mean	29.77	0.00	40.4	32.0	8.4	35.8	— 3.3	32.0	86		N.	sum 0.15

Feb. 3.—A fine day, but cloudy and dull at times. Rain fell between 6 and 7 P.M.
— 4.—A fine cloudy day. Hail fell in early morning.
— 5.—A dull cold day. Occasional rain and sleet. Snow fell in very large flakes at 9.30 A.M.
— 6.—A dull cold day. Occasional snow.
— 7.—A cloudy day. Slight hail at 1 and 3 P.M.
— 8.—A cold dull day. Occasional slight snow and hail.
— 9.—A fine day.—Occasionally dull and cloudy. Clear at night.

—— During the week ending Saturday, February 5, in the vicinity of the metropolis the reading of the barometer at the level of the sea increased from 30.33 inches at the beginning of the week to 30.44 inches by the morning of January 31, decreased to 30.11 inches by the evening of February 1, increased to 30.34 inches by the evening of the 2d, and decreased to 29.83 inches by the end of the week. The mean reading for the week was 30.18 inches, being 0.23 inch below that of the preceding week, and 0.22 inch above the average.

The highest temperatures of the air observed by day varied from 57° on January 31 to 40¼° on February 5; the mean for the week was 48¼°. The lowest temperatures of the air observed by night ranged from 31½° on January 30 to 43¼° on the 31st; the mean weekly value was 36¼°. The mean daily range of temperature in the week was 12°, the greatest range in the day being 17½° on January 30, and the least, 8¼°, both on February 4 and 5. The mean daily temperatures of the air and the departures from their respective averages were:—January 30, 41°.4, + 3°; 31st, 49°.5, + 11°; February 1, 43°.9 + 5°.3; 2d, 43°.7, + 5°; 3d, 41°, + 2°.2; 4th, 38°.3, — 0°.6; 5th, 35°.8, — 3°.2. The mean temperature of the air for the week was 41°.9, being 3°.2 above the average of observations extending over a period of sixty years.

The highest reading of a thermometer, with blackened bulb in vacuo placed in sun's rays, was 89¾° on January 31. The lowest reading of a thermometer on grass, with its bulb exposed to the sky, was 25° on January 30. The mean for the seven low readings was 30½°. The direction of the wind was variable, and its strength brisk. The weather during the week was somewhat fine, though the sky was generally cloudy.

Rain fell on five days; the amount collected was 0.25 inch.

Snow fell in very large flakes at 9.30 A.M. on the 5th inst.

In England the highest temperature of the air observed by day was 57° at about London, at Brighton 48¼° was the highest temperature in the week, the mean value from all stations was 53½°. The lowest temperatures of the air observed by night were about 29° at Truro and Eccles; at Sheffield and Liverpool 33½° was the lowest temperature observed in the week, the mean from all stations was 31¼°. The range of temperature in the week was the greatest at about London, 25¾°, and the least at Brighton, 16½°; the mean range of temperature from all stations was 22¼°. The mean of the seven high day temperatures was the largest at Truro, 50¾°, and Plymouth, 50¼°, and the smallest at Newcastle-on-Tyne, 44½°; the average value from all stations was 47½°. The mean of the seven low night temperatures was the smallest at Newcastle-on-Tyne, 31¾°, and the largest at Truro, 39¾°; the mean value from all stations was 36½°. The mean daily range of temperature in the week was the greatest at Manchester, 14½°; and the least at Brighton, 8¼°; the mean from all stations was 11°.

The mean temperature of the air for the week from all stations was 41¾°, being 3½° higher than the value for the corresponding week in 1875. The highest was 45° at Truro, and the lowest 37¾° at Newcastle-on-Tyne.

Rain fell on four or five days in the week at most stations; the amounts varied from eight-tenths of an inch at Plymouth, Sheffield, Manchester, Eccles, and Hull, to two-tenths of an inch at Truro, Leicester, Cambridge, and Brighton; the average fall over the country was four-tenths of an inch.

The weather during the week was somewhat fine, though dull and cloudy. Snow fell at several stations on Saturday the 5th inst.

In Scotland the highest temperatures of the air observed by day ranged from 53¼° at Edinburgh to 50° at Glasgow and Paisley; the average value over the country was 51¼°. The lowest temperatures of the air observed by night varied from 28° at Paisley to 33° at Leith, the general average over the country being 30¾°. The mean range of temperature in the week was 20½°. The mean temperature of the air for the week was 41¾°, being 4° higher than the value for the corresponding week in 1875. The highest occurred at Leith, 43°, and the lowest at Glasgow, 41°. Rain fell to the amount of an inch and nine-tenths at Greenock, at Paisley 1¼ inch fell, but at Dundee and Aberdeen four-tenths of an inch only was measured. The average fall over the country was nine-tenths of an inch.

At Dublin the highest temperature in the week was 57½°, the lowest 23¾°, the range 33½°, the mean 43¼°, and the fall of rain 0.10 inch.

JAMES GLAISHER.

Enquiries.

He that questioneth much shall learn much.—BACON.

96. PRESERVING THE CONES OF CONIFERS.—Which is the best way of preserving Coniferæ cones against decay, and how are collections of such best got up—taking economy, space, and appearance into consideration? *E. Benary.*

97. KESTELL'S PATENT LABELS: We should be obliged to any of our correspondents for the address of the maker of these labels.

98. SAINFOIN SEED: I am greatly obliged by your reply with reference to Sainfoin in yours of 29th ult.; but as I have often heard a report (which is, in fact, the prevailing opinion in this part of the country) [west of England] that English seed will always stand for seven years in succession, and often longer, but French rarely stands more than three or four years, would you kindly favour me with your opinion whether or not such is the case, assuming that both are new seeds when sown. *S. J.* [Can any of our correspondents enlighten "S. J." on this subject? EDS.]

99. ARTICHOKE MARROW: *R. J. W.* writes:—Can you kindly assist me in obtaining the name of a Vegetable Marrow which I have grown for the last ten years, but unfortunately have lost this winter through the seed being devoured by mice? It is similar in shape to the well-known Custard, but much superior in flavour, and of a bush habit; the colour is a yellowish white, flesh very firm. I believe the name I received with it was the "Artichoke," but I do not see a variety offered by that name by any of the principal seedsmen whose lists I have lately received.

Answers to Correspondents.

BELGIAN BUSINESS: *Nurseryman.* Some people are too sharp by half, and by your account the firm you mention come under this category. If the facts are as you state them a public apology should be made.

CHEAP KNIVES (Qy. 95, p. 182): The address of the cutler who sells "cheap knives of sufficiently good quality at a shilling a-piece," is Messrs. English & Sons, Colonnade, North Street, Brighton. The knives referred to are single-bladed clasp-knives, in rough brown handles, fit for boys' use, and also strong single-bladed penknives in white handles. *O.*

HERBS: *A Would-be Grower.*—Consult Mr. Earley's *High-class Kitchen Gardening.*

NAMES OF FRUITS: *A. L., Reigate.* Your Pear is the Bergamotte d'Esperen.—*J. S. Apples:* 1, not known; 2, Hormead Pearmain.—*Harrison & Sons. Apples:* 1, Dumelow's Seedling; 2, not recognised; 3, has the characters of a late Fearn's Pippin, but not certain about it.—*G. E. R.* We believe your Apple is Fearn's Pippin, but it was far too much shrivelled for us to speak with certainty.

NAMES OF PLANTS: *J. M.* 1, Litobrochia macilenta; 2, Lomaria fluviatilis; 3, Lastrea glabella; 4, Polystichum Richardi.—*C. & M. H.* Cephalotaxus Fortunei, A. M.—*C. Ford.* 1, Acacia dealbata; 2, A. armata.

MALFORMED SHADDOCK: *A Weekly Reader.* In your specimen a second pistil has been formed above the original one, which has grown over and enclosed the new-comer. Such cases are not very uncommon, but they are always of interest.

PEAS AND MICE: *N. J. V.* When you make a sowing of Peas put some chopped Gorse into the drill at the same time, or rub the Peas in red lead.

TRANSPLANTING: *Subscriber.* Apply to Mr. Barron, Elvaston Nursery, Borrowash, Derby.

VARIEGATED VIOLET: *W. Bishop.* Very pretty, and no doubt a good spring garden plant.

COMMUNICATIONS RECEIVED.—E. H.—H. J.—G. T. M.—G., Bath.—F. Newman.—C. D. S. (we have not yet received the tobacco-cloth).—J. W. B.—J. B.—H. T.—W. M.—H. H.

Markets.

COVENT GARDEN, February 10.

A quiet market, with a fair demand for best goods and early forced vegetables, has been the rule during the past week, but common fruits and vegetables remain much the same. We are still heavily supplied with St. Michael Pines. A quiet business doing in Kent Cobs at improved prices. *Jas. Webber, Wholesale Apple Market.*

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per doz.	30 0	60 0	Heaths, in var., doz.	12 0	30 0
Begonias, per doz.	6 0	12 0	Hyacinths, per doz.	9 0	18 0
Bouvardias, do.	12 0	18 0	Hyacinths, Rom., do.	12 0	30 0
Cineraria, per doz.	12 0	18 0	Lily of Valley, doz.	18 0	36 0
Cyclamen, do.	12 0	24 0	Mignonette, do.	6 0	9 0
Cyperus, do.	6 0	12 0	Myrtles, do.	3 0	9 0
Dracæna terminalis	30 0	60 0	Pelargoniums, scarlet, per doz.	6 0	9 0
— viridis, per doz.	18 0	24 0	Primula sinensis, do.	6 0	12 0
Euphorbia jacquiniæfolia, per doz.	9 0	18 0	Solanums, do.	6 0	24 0
Ficus elastica	2 6	15 0	Tulips, do.	8 0	12 0
			Veronica, do.	4 0	12 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz.	6 0	..	Mint, green, bunch	1 6	..
— Jerusalem, p. lb.	0 3	..	Mushrooms, per pott.	1 0	2 0
Asparagus (English), per bundle	8 0	10 0	Onions, young, bun	0 4	0 6
Beans, French, p. 100	5 0	..	Parsley, per bunch.	0 4	..
Beet, per doz.	1 0	2 0	Peas, green, per lb.	1 6	..
Brussels Sprouts, lb.	0 4	..	Potatos (new), baskt.	1 0	..
Cabbages, per doz.	1 0	2 0	— new Jersey, p. lb.	1 6	2 0
Carrots, per bunch.	0 6	..	— Sweet, per lb.	0 6	..
Cauliflowers, p. doz.	2 0	4 0	Radishes, per bunch.	0 2	0 4
Celery, per bundle	1 6	2 0	— Spanish, doz.	1 0	..
Cucumbers, each	2 0	3 6	— French	0 6	..
Endive, per doz.	1 0	2 0	Rhubarb, per bundle	0 6	1 0
— Batavian, p. doz.	2 0	3 0	Salsafy, per bundle	0 9	..
Herbs, per bunch	0 2	0 4	Seakale, per punnet	1 0	2 0
Horse Radish, p. bun.	3 0	5 0	Shallots, per lb.	0 3	..
Leeks, per bunch	0 2	0 4	Tomatos, per doz.	1 0	2 0
Lettuces, per score	2 0	..	Turnips, per bundle	0 4	..

Potatos—Rocks, £5; Regents, £7 to £8; Kidneys, £7 to £8 per ton.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1 0	2 6	Melons, each	0 0	0 0
Cobs and Filbts., lb.	0 6	0 9	Oranges, per 100	6 0	12 0
Grapes, per lb	3 0	8 0	Pears, per doz.	2 0	6 0
Lemons, per 100	6 0	10 0	Pine-apples, p. lb.	1 6	4 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz	6 0	18 0	Narcissus, per dozen	3 0	6 0
Azaleas, 12 sprays	1 0	3 0	Pelargoniums, 12 spr.	2 0	4 0
Camellias	1 0	9 0	— Zonal do.	1 6	3 0
Carnations, 12 blooms	2 0	4 0	Poinsettia, per doz.	4 0	12 0
Cineraria, per bunch	1 0	2 0	Primula, dbl., p. bun.	1 0	1 6
Cyclamen, 12 blooms	0 3	0 6	Rhododend., 12 bds.	4 0	12 0
Epiphyllum, p. doz.	1 0	3 0	Roman Hyacinths, 12 sprays	3 0	6 0
Eucharis, per doz.	6 0	18 0	Roses, indoor, p. doz	3 0	12 0
Euphorbia, 12 spr.	4 0	9 0	Spiræa, 12 sprays	2 0	4 0
Gardenia, per doz.	12 0	18 0	Stephanotis, 12 sprays	9 0	18 0
Heliotropes, 12 spr.	0 6	1 0	Tuberoses, per doz.	4 0	9 0
Lily of Valley, 12 spr.	1 6	6 0	Violets, 12 bunches	2 6	4 0
Mignonette, 12 bun.	6 0	9 0			

SEEDS.

LONDON: *Feb.* 10.—Extreme firmness now characterises our seed trade. Of red Clover seed the supply does not increase: choice samples of home-grown are almost entirely wanting. One extra fine parcel has just been sold on our market at 180*s.* per cwt. With regard to French, red stocks on the other side seem nearly exhausted, the Germans, like the English, having lately bought largely from France. The latest cable advices from New York confirm the earlier reports received as to the general deficiency of the American crop. In Trefoil seed the high currencies recently touched are fully maintained, 50*s.* per cwt. and upwards being demanded for best qualities. The general tendency to high prices also extends to white Clover, foreign Italian, and perennial grasses. Alsike is a good bit dearer. For spring Tares a very active demand is now shown; the quantity in London left unsold is now quite small. Large Tares are much inquired for, but are not to be had; for the few parcels of Scotch Gores which have reached this market an advance is asked of 6*s.* to 8*s.* per quarter. Winter Vetches keep in good request. The bird seed trade lacks animation. In neither Mustard nor Rape seed is there much doing. Feeding Linseed continues dull. Large blue Peas sell more freely. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, E.C.*

CORN.

Trade at Mark Lane on Monday was slow, with no improvement in prices. The rates of last Monday for Wheat, both English and foreign, were with some difficulty upheld, there being a distinct want of quality and condition in the produce offered. Barley was dull, and only the better kinds were fully as dear. Malt was not materially cheaper. Oats were quiet, and efforts to establish a rise of 3*d.* per quarter were not successful. Maize was somewhat lower. Beans and Peas were quoted as before. Flour was weak in price.—Trade on Wednesday was slow for all classes of produce. Holders were a little firm for fine and dry Wheat, the supply of which was proportionately small, and were not generally disposed to refuse offers for inferior sorts of either English or foreign. Barley, excepting the very best, was easy in price, and any change in malt, Oats, Maize, Beans, Peas, and flour was advantageous to the buyer. —Average prices of corn for the week ending Feb. 5:—Wheat, 43*s.* 7*d.*; Barley, 34*s.* 1*d.*; Oats, 24*s.* 5*d.* For the corresponding week in 1875:—Wheat, 42*s.* 7*d.*; Barley, 45*s.*; Oats, 29*s.* 11*d.*

HAY.

At Whitechapel on the 8th trade was steady, at late rates. There was a fair show of all classes of fodder. Prime Clover, 100*s.* to 144*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 132*s.*; inferior, 55*s.* to 75*s.*; and straw, 35*s.* to 44*s.* per load.—On Thursday a fair demand prevailed for good qualities of meadow hay and Clover, but inferior sorts were dull of sale. Quotations: Clover, best, 117*s.* to 147*s.*; inferior, 75*s.* to 95*s.*; hay, best, 112*s.* to 132*s.*; inferior, 55*s.* to 75*s.*; and straw, 34*s.* to 44*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 130*s.* to 140*s.*; inferior, 95*s.* to 110*s.*; superior Clover, 138*s.* to 147*s.*; inferior, 100*s.* to 112*s.*; and straw, 44*s.* to 48*s.* per load.

POTATOS.

At the Borough and Spitalfields markets on the 7th a steady demand prevailed, and full rates were given for the better kinds of Potatos, but inferior sorts remained dull. The arrivals were moderate. Kent Regents, 110*s.* to 130*s.* per ton; Essex ditto, 100*s.* to 120*s.*; Rocks, 85*s.* to 100*s.*; kidneys, 110*s.* to 130*s.*; flukes, 130*s.* to 150*s.*; Victorias, 110*s.* to 140*s.*—The arrivals of foreign Potatos into London last week inclnded 81 tons 13,373 bags from Antwerp, 60 bags from Brussels, 55 tons from Dahouet; 118 tons from St. Valery; 165 tons from La Vivier; 68 tons from St. Malo; 5 bags from Amsterdam; 310 bags from Ghent; 1232 sacks 1389 tons from Dunkirk; 570 sacks 193 bags from Boulogne; 1843 bags from Harlingen; 767 tons from Rouen; 150 tons from Duclaire; and 540 bags from Hamburg.

COALS.

Wednesday's market was steady, at the following quotations:—Bebside West Hartley, 17*s.* 9*d.*; Hastings Hartley, 17*s.* 9*d.*; Eden Main, 18*s.* 6*d.*; Walls Ends—Harton, 18*s.* 3*d.*; Hetton, 22*s.* 6*d.*; Hetton Lyons, 18*s.* 3*d.*; Hawthorn, 18*s.* 3*d.*; Lambton, 22*s.*; Original Hartlepool, 22*s.* 6*d.*; South Hetton, 22*s.* 6*d.*; Kelloe, 18*s.* 6*d.*; East Hartlepool, 22*s.* 3*d.*; Tees, 22*s.* 3*d.*

B. S. WILLIAMS'

CHOICE

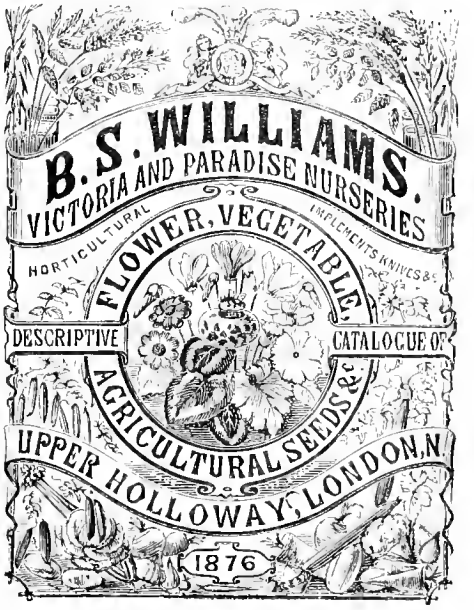
FLOWER AND VEGETABLE

Seeds for 1876.

	Per Packet—s. d.
BEANS, Williams' Early Prolific Dwarf French, in sealed half-pints	1 6
BRUSSELS SPROUTS, Welch's Giant, one of the finest in cultivation	1 0
CUCUMBER, Tender and True	2 6
„ Osmaston Manor (new), one of the Finest Varieties, either for Summer or Winter use, 26 to 32 inches long, very prolific	2 6
MELON, Osmaston Manor Hybrid (new), a splendid Green-fleshed Variety, beautifully netted, globular in form, and of delicious flavour	2 6
ONION, Williams' Magnum Bonum, the heaviest cropping and longest-keeping Onion in cultivation	1 6
PEA, Williams' Emperor of the Marrows per quart,	2 6

Illustrated Seed Catalogue for 1876

NOW READY.



Gratis and post-free to all applicants.

CHOICE FLOWER SEEDS.

	Per Packet.—s. d.
BALSAM, Williams' Superb Strain	2s. 6d. and 1 6
BEGONIA FROEBELII (new). This new and distinct species will prove one of the finest scarlet bedding plants in cultivation	2 6
CYCLAMEN PERSICUM GIGANTEUM.—This is a great improvement on the old type, having very broad, beautifully-mottled coriaceous leaves; the flowers are thrown well above the foliage, each flower measuring from 2 to 2½ inches in length; pure white, with a fine bold violet-purple eye	5 0
CYCLAMEN PERSICUM, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1 0
CELOSIA PYRAMIDALIS PLUMOSA	1 0
CALCEOLARIA, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1 6
CINERARIA, Weatherill's Extra Choice Strain, 5s., 3s. 6d., 2s. 6d., and	1 6
GLOXINIA, Finest Drooping Varieties	1 6
„ Finest Erect Varieties	1 6
PRIMULA, Williams' Superb Strain, Red, White, or Mixed 5s., 3s. 6d., 2s. 6d., and	1 6
PYRETHRUM GOLDEN GEM	1 0
SOLANUM, Williams' Improved Hybrids	1 6
STOCK, Williams' Improved Giant Scarlet Brompton	1 6
WALLFLOWER, Harbinger, Autumn and Winter flowering	1 0

Packets of Flower Seeds, excepting heavy kinds, Free by Post.

FREE DELIVERY.—All Orders for Seeds, amounting to £1 and upwards, will be delivered, Free of Carriage, to any Railway Station in ENGLAND; and all Orders of £2 or more in value, to any Railway Station in SCOTLAND or WALES, and any Steam Port in IRELAND.

VICTORIA AND PARADISE NURSERIES,

Upper Holloway, London, N.

A BARGAIN is offered in a lot of very extra strong BLACK HAMBURGH VINES, which must, on account of alterations, be moved out of a border in which they were planted to be fruited this year. They have never borne a berry, and would ripen 20 lb. to 30 lb. of fruit well. Strong Canes, with splendid healthy roots, 10s. 6d. each.
L. WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

THE PLANTING SEASON.
CHEAP OFFER.

LAURELS, 2 feet, 80s. per 1000; transplanted last spring, 2 to 3 feet, bushy, 100s. per 1000; fine plants, 3 to 5 feet, 25s. per 100; Portugal do., specimens, all transplanted last spring, 2 to 3 feet, 60s. per 100; 3 to 3½ feet, 100s. per 100; TREE BOX, fine, 2 to 3 feet, 30s. per 100; Variegated do., 2 to 3 feet, 40s. per 100; CEDRUS DEODARA, fine specimens, 3 to 4 feet, 30s. per dozen; 4 to 5 feet, 42s. per dozen; OAKS, English, 4 to 6 feet, very strong, 60s. per 1000; CHESTNUTS, Horse, strong, 3 to 4 feet, 50s. per 1000; 4 to 6 feet, very strong, 80s. per 1000. Put on rail for cash by

R. TUCKER, The Nurseries, Faringdon, Berks.

A Priced CATALOGUE of General Nursery Stock on application.

Trees and Shrubs on Sale.—Special Offer.

BENJAMIN WHITHAM,

The Nurseries, Reddish, near Stockport,

Has a large quantity of the following, fine healthy plants—must be cleared, the land being required for other purposes:—

FRUIT TREES.

APPLES, Pyramids, 3-yr., heads, 3 to 4 feet, 6s. per dozen, 40s. per 100.
,, half standards, stems 2 to 4 feet, 4 to 5 feet high, 7s. per dozen, 50s. per 100; 5 to 6 ft., 8s. per doz., 60s. per 100.
CURRANTS, Black, fine, 10s. per 100.
,, Red, fine, 10s. per 100.
,, White, extra fine, 16s. per 100.
STRAWBERRIES, Yates' Seedling, very fine sort, abundant bearers, extra, 3s. per 100.
GOOSEBERRIES, large show and dessert sorts, extra strong, 15s. to 20s. per 100.

FOREST TREES.

AREA THEOPHRASTA (Service tree), grafted sorts, 3 to 4 feet, 5s. per dozen, 30s. per 100; 4 to 5 feet, 6s. per dozen, 40s. per 100; 5 to 6 feet, 8s. per dozen, 60s. per 100; 6 to 8 feet, 9s. per dozen, 70s. per 100.
BEECH, all fine, stout, extra transplanted, 1½ to 2 feet, 3s. 6d. per 100, 25s. per 1000; 2 to 3 feet, 4s. per 100, 33s. per 1000; 3 to 4 feet, 6s. per 100, 40s. per 1000; 4 to 5 feet, 10s. per 100, 65s. per 1000; 5 to 6 feet, 20s. per 100; 6 to 8 feet, 30s. per 100; 8 to 10 feet, 50s. per 100.
CHESTNUT, Horse, 2 to 3 feet, 5s. per 100; 3 to 4 feet, 6s. per 100; 4 to 5 feet, 7s. per 100; 5 to 6 feet, 10s. per 100; 6 to 8 feet, 20s. per 100.
,, ,, fine single specimens for avenues, very stout, straight stems, 12s. per dozen.
,, ,, Scarlet, 5 to 6 feet, 10s. per dozen; 6 to 8 feet, 12s. per dozen.
LIME, fine stock, 2 to 3 feet, 7s. per 100; 3 to 4 feet, 10s. per 100; 4 to 5 feet, 15s. per 100; 5 to 6 feet, 20s. per 100; 6 to 8 feet, 30s. per 100; 8 to 10 feet, 70s. per 100.
PINUS AUSTRIACA, 1½ to 2 feet, 7s. per 100; 2 to 3 feet, 12s. per 100; 3 to 4 feet, 25s. per 100.
POPLAR, Lombardy, 2 to 3 feet, 4s. per 100, 35s. per 1000; 3 to 4 feet, 5s. per 100, 40s. per 1000; 4 to 6 feet, 8s. per 100, 75s. per 1000; 6 to 8 feet, 15s. per 100; 8 to 10 feet, 25s. per 100
,, Ontario, 4 to 6 feet, 8s. per 100; 6 to 8 feet, 12s. per 100; 8 to 10 feet, 25s. per 100.
,, Balsam, 4 to 6 feet, 10s. per 100; 6 to 8 feet, 20s. per 100.
PRIVET, Evergreen, 1½ to 2 feet, 15s. per 1000; 2 to 3 feet, 20s. per 1000; 3 to 4 feet, 25s. per 1000; 4 to 5 feet, 30s. per 1000.
SYCAMORE, 2 to 3 feet, 2s. 6d. per 100, 20s. per 1000; 3 to 4 feet, 3s. per 100, 25s. per 1000; 4 to 5 feet, 4s. per 100, 30s. per 1000; 5 to 6 feet, 6s. per 100, 50s. per 1000.
,, fine, 6 to 8 feet, 18s. per 100; extra strong, 8 to 10 feet, 45s. per 100.

EVERGREENS, ORNAMENTAL TREES AND SHRUBS.

AZALEA PONTICA, bedded, 4 to 6 inches, 6s. per 100, 50s. per 1000.
,, ,, bushy, transplanted, 1½ to 2 feet, 6s. per dozen, 45s. per 100; 2 to 2½ feet, 9s. per dozen, 65s. per 100.
BOX, Green, 1 to 1½ foot, 3s. per dozen, 16s. per 100.
,, 1½ to 2 feet, 4s. per dozen, 25s. per 100; 2 to 3 feet, 4s. 6d. per dozen, 30s. per 100.
LAUREL, Portugal, 1½ to 2 feet, 4s. per dozen, 30s. per 100.
,, ,, very fine, 2 to 3 feet, 8s. per dozen, 60s. per 100.
,, ,, extra fine round bushes, 3 to 4 feet diameter, 2½ to 3 feet, 12s. per dozen, 90s. per 100.
LEDUM LATIFOLIUM, bedded, 3 to 6 inches, 50s. per 1000; 12 to 18 inches, 6s. per dozen, 40s. per 100.
MAHONIA (Berberis) AQUIFOLIA, 1½ to 2 feet, 10s. per 100; 2 to 3 feet, 15s. per 100.
RHODODENDRON, best hybrid, bedded, 3 to 6 inches, 8s. per 100, 60s. per 1000; 6 to 9 inches, 10s. per 100, 90s. per 1000; 9 to 12 inches, 14s. per 100.
,, Ponticum, fine dwarf, round bushes, 1 to 1½ foot, 25s. per 100, £10 per 1000; 1½ to 2 feet, 5s. per dozen, 30s. per 100; 2 to 3 feet diameter, 2 to 2½ feet, 6s. per dozen, 45s. per 100; 3 to 4 feet diameter, 3 to 4 feet, 18s. per dozen, 150s. per 100.
,, Cunningham's White, very bushy, 1¼ to 1½ foot, 50s. per 100; 1½ to 2 feet, 65s. per 100.
,, best named sorts, bushy, 18s. to 30s. per dozen.
THORN, new double scarlet (Paul's), 4 to 5 feet, 5s. per dozen, 35s. per 100; 5 to 6 feet, 6s. per dozen, 40s. per 100; 6 to 8 feet, 7s. per dozen, 55s. per 100.
,, Double Pink, 4 to 5 feet, 5s. per dozen, 35s. per 100; 5 to 6 feet, 6s. per dozen, 40s. per 100; 6 to 8 feet, 7s. per dozen, 55s. per 100.
,, ,, White, 4 to 5 feet, 5s. per dozen, 35s. per 100; 5 to 6 feet, 6s. per dozen, 40s. per 100; 6 to 8 feet, 7s. per dozen, 55s. per 100.
,, Single Scarlet, 4 to 5 feet, 5s. per dozen, 35s. per 100; 5 to 6 feet, 6s. per dozen, 40s. per 100; 6 to 8 feet, 7s. per dozen, 55s. per 100.
,, Cockspur, 4 to 5 feet, 5s. per dozen, 35s. per 100; 5 to 6 feet, 6s. per dozen, 40s. per 100; 6 to 8 feet, 7s. per dozen, 55s. per 100.
YEW, English, fine, large stock, 9 to 12 inches, 12s. per 100; 1¼ to 1½ foot, 20s. per 100; 1 to 2 feet, 5s. per dozen, 25s. per 100; 2 to 3 feet, 7s. per dozen, 45s. per 100; 3 to 4 feet, 12s. per dozen, 80s. per 100.
Irish, 2 to 3 feet, 8s. per dozen; 3 to 4 feet, 12s. per dozen.

MR. LAXTON'S NEW PEAS FOR 1876.

MESSRS. HURST & SON

Have been entrusted with the introduction of the following Two First-class New Peas raised by MR. LAXTON, and which are recommended as being of very high quality and distinct:—

THE SHAH.

A short-strawed, early white wrinkled marrow, of the same height and as early as "Ringleader," described by the Royal Horticultural Society as having very full pods, produced abundantly, and containing from eight to nine very large Peas of very fine quality, and as being an exceedingly fine and and early prolific white wrinkled variety. First-class Certificate Royal Horticultural Society.

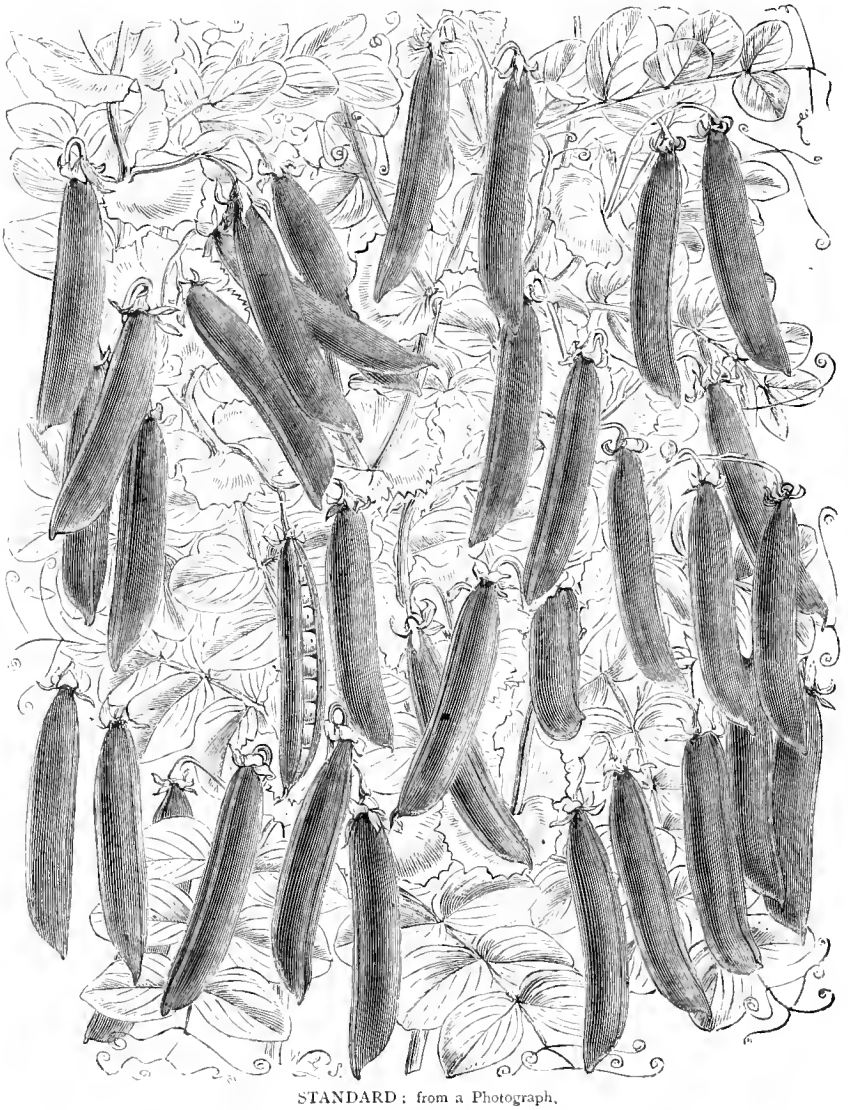
Price 5s. per sealed quarter-pint packet.

STANDARD.

Unquestionably the most useful maincrop blue wrinkled Pea yet raised, and will take the same place as a prolific market Pea of high quality amongst blue wrinkled marrows as "Fillbasket" has in round Peas. Described by the Royal Horticultural Society as having long curved pods containing from nine to eleven Peas of large size and excellent quality in each; and as being a very handsome and prolific Pea.

Mr. Laxton, in a letter to us, says, "I cannot find a fault with this Pea," and Mr. Gilbert, of Burghley, says of it, "It is certainly the best Pea I know." Height 3 feet.

Price 5s. per sealed quarter-pint packet.



STANDARD: from a Photograph.

The following Novelties of 1875 can also be supplied:—

SUPPLANTER.

A first-rate Exhibition Pea of fine quality—the earliest of the "Veitch's Perfection" type. Height, 3 feet, handsome, and very prolific, producing very large pods in pairs; plant very robust and vigorous. First-class Certificate.

Price, 5s. per sealed half-pint packet.

CONNOISSEUR.

A most distinct and delicious late Pea, raised from "Ne Plus Ultra." Height 6 feet.

Price 5s. per sealed half-pint packet.

UNIQUE.

A very handsome and prolific dwarf early Pea with long deep green coloured pods, coming into use at the same time, and of the same height as "Little Gem." First-class Certificate.

Price, 5s. per sealed half-pint packet.

DR. HOGG.

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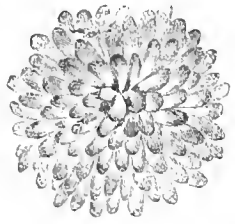

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SEED CATALOGUE

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Awarded a First-class Certificate by the Royal Horticultural Society, October 6, 1875.

Fruit 2¾ inches wide, and same in height, conical; skin smooth, brilliant red, with minute fawn-coloured dots; flesh very tender, crisp, juicy, and sweet, with a very pleasant flavour, perhaps the most valuable of all for market. The tree is as productive as Lord Suffield Apple, and one of the handsomest fruits in cultivation. Ripe end of August, and will keep till Christmas.

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Savoy	1 ,,	Spinach	1 pkt.
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Capsicum	1 pkt.	Tomato	1 pkt.
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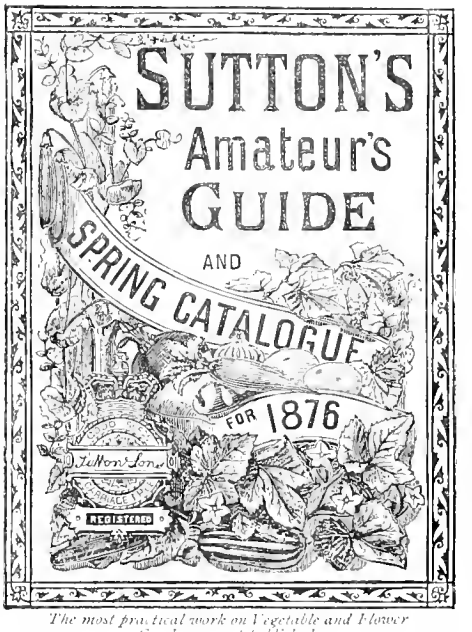

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MADE of PREPARED HAIR and WOOL.

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PARCHMENT or CLOTH LABELS, TREE or PLANT LABELS. Punched Parchment, 4 inches long, 3*s.* 6*d.* per 1000, or 30*s.* per 10,000; if eyeleted, 4*s.* per 1000. Vellum Cartridge, 4 inches long, 3*s.* per 1000 for 10,000. Sample Labels sent on receipt of postage stamp. Orders delivered free in London.

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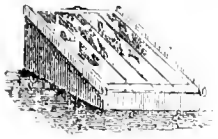

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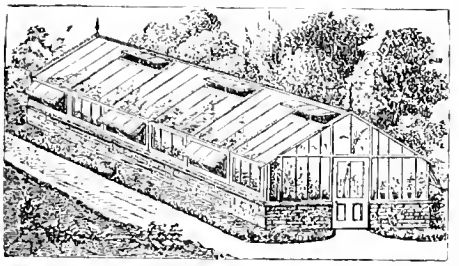

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REDUCED PRICES. SEASON 1876.
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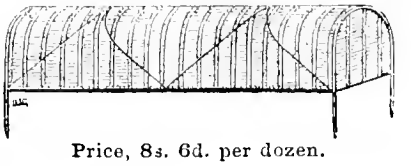

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Illustrated and Priced Catalogues of every description of Horticultural Wirework on application.
Post-office Orders payable at 310, *Edgware Road.*

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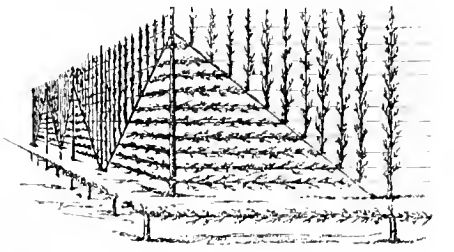
OF TRAINING FRUIT TREES, &c.



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	Painted.	Galvd		Painted.	Galvd
4½ ft. high..	5s. 6d.	7s. 6d.	7 ft. high	8s. 0d.	11s. 0d.
5 ft. high ...	6 0	8 6	8 ft. high	9 0	12 0
6 ft. high ...	6 9	9 6	9 ft. high	10 0	13 0

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SCREWS and NUTS, neater than Raidisseurs, 3s. 6d. per doz.
No. 13 WIRE, 10 inches apart, 2s. 6d. per 100 Yards.
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THE MEDAL FOR MERIT
At the Vienna Universal Exhibition, 1873,
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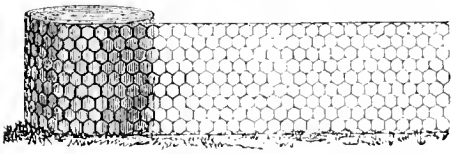

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Size of Mesh.	Mostly used for	Gauge.	Or Light Quality.	Gauge.	Or Medium Quality.	Gauge.	Or Strong Quality.
2 in.	Dogs or Poultry.	19	3¾d.	18	4½d.	17	5¾d.
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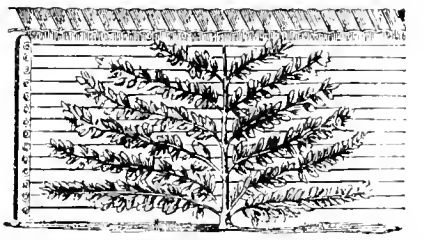

R. HOLLIDAY, PRACTICAL WIREWORKER, 2A, Portobello Terrace, Notting Hill Gate, London, W., begs to call the attention of all Gardeners who are about to have their Garden Walls Wired to his system of Wiring Walls, as being superior to all others for neatness, strength, and durability.

For Neatness,—Because all the Wires are kept perfectly tight, without the use of the Raidisseur.

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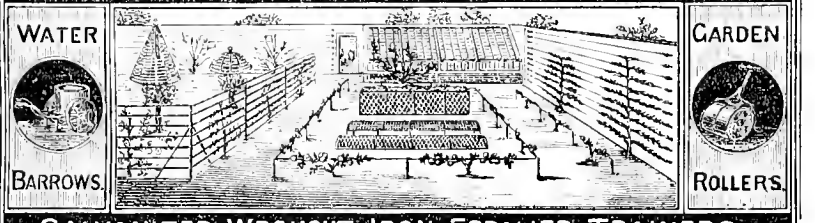

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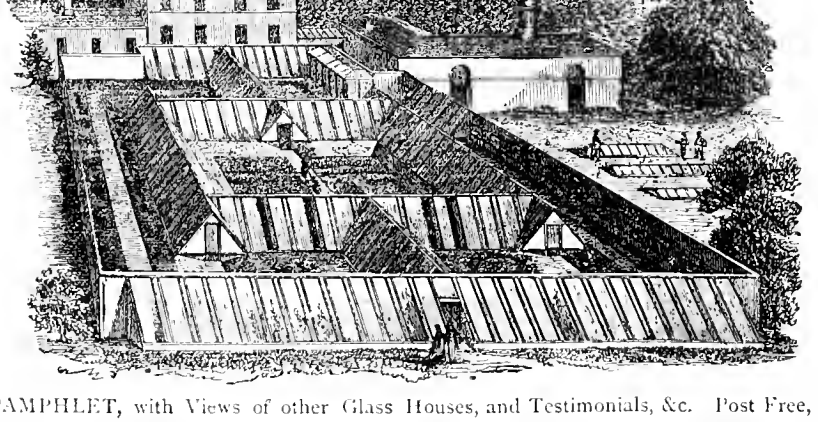

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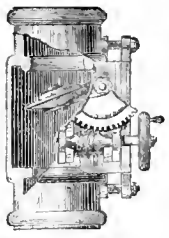

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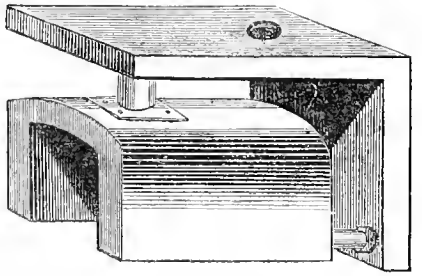

These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements—viz., the water space at back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel; the cost of setting is also considerably reduced, and likewise the space occupied; at the same time these Boilers are simple in construction, and being made of wrought iron are not liable to crack. They are made of the following sizes:—

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20 in.	18 in.	18 in.	300	7	0	0
20 ,,	18 ,,	24 ,,	400	8	0	0
20 ,,	18 ,,	30 ,,	500	9	0	0
24 ,,	24 ,,	24 ,,	700	12	0	0
24 ,,	24 ,,	30 ,,	850	14	0	0
24 ,,	24 ,,	36 ,,	1,000	16	0	0
24 ,,	24 ,,	48 ,,	1,400	20	0	0
28 ,,	28 ,,	60 ,,	1,800	25	0	0

Larger sizes if required.

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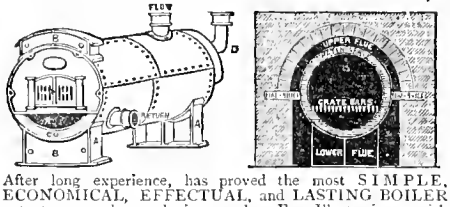

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☞ Our Boilers are the ONLY ones made with the sanction and under the inspection of the inventor, Mr. Stevens—all others being base imitations.

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THE BEST AND CHEAPEST EVER OFFERED TO THE PUBLIC.

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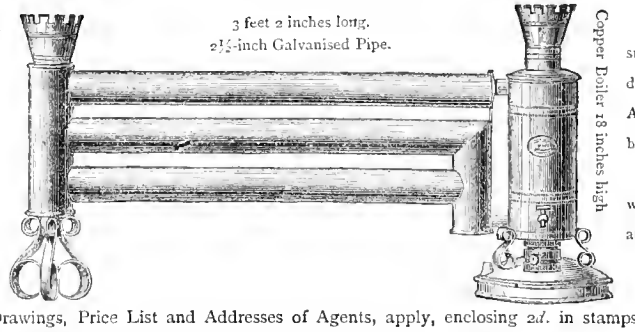

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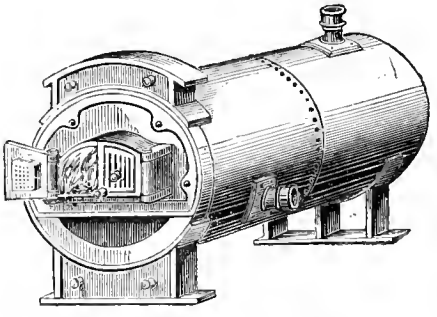

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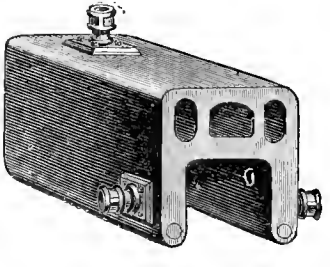

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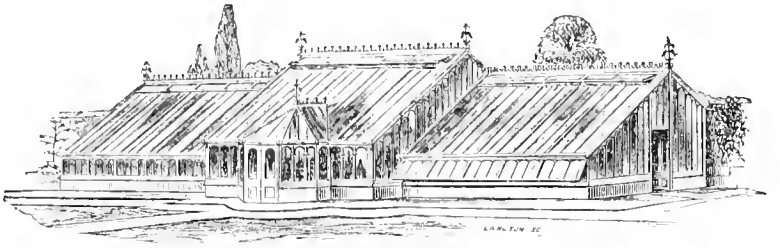

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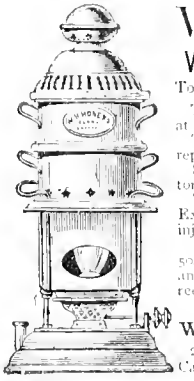

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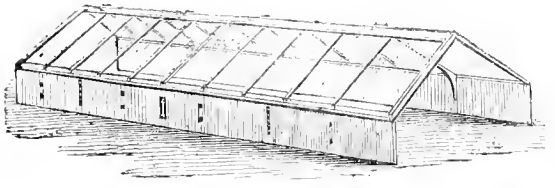

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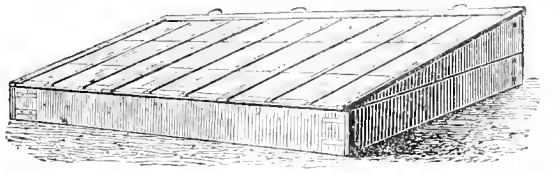

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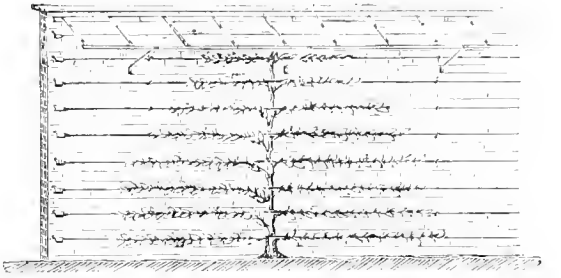

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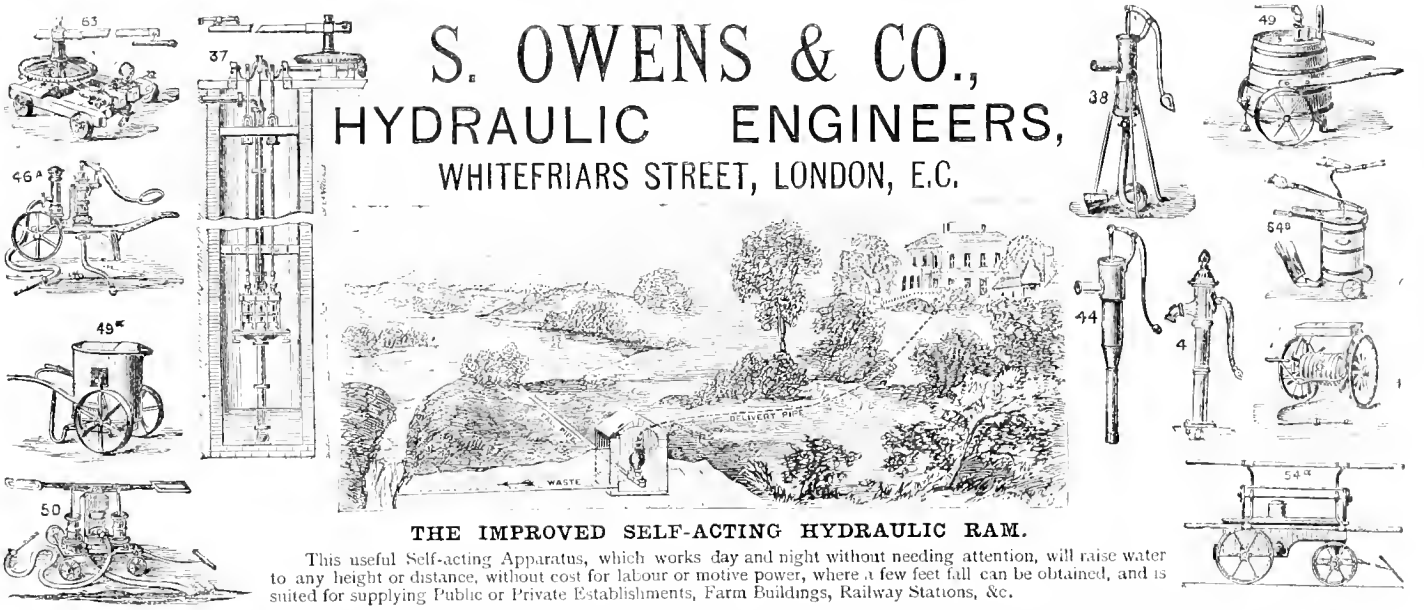

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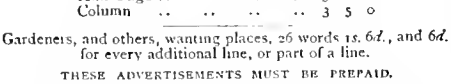

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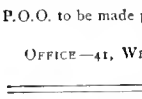

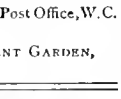

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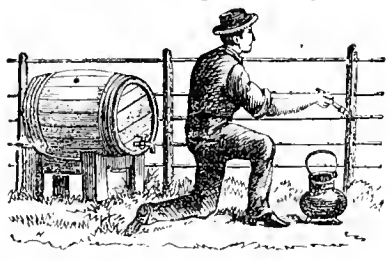

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THE AGRICULTURAL GAZETTE

for MONDAY, FEBRUARY 7.

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GARDENER (HEAD), where one or more are kept.—Age 29, married; thorough knowledge of the profession. First-class references.—S. DANIELLS, The Gardens, Norbury Hall, Ashbourne, Derby.

GARDENER (HEAD).—Age 36, married, no family; thoroughly understands Vines, Melons, and Cucumbers, Stove and Greenhouse Plants, Flower and Kitchen Gardening. Six years' good character.—F. W., Mr. E. Jones, Seedsman and Florist, Henley-on-Thames, Oxon.

GARDENER (HEAD, WORKING), age 33, married.—A GENTLEMAN wishes to recommend his Gardener, a Scotchman, thoroughly competent.—B., 356, H. Greenwood, Advertising Agent, Liverpool.

GARDENER (HEAD, WORKING), seventeen years' experience in Vines, Melons, Stove Plants, Fruit, Flowers, and Kitchen Garden. Six years' character.—H. Y., 2, Berry Grove Cottages, Hamilton Road, Norwood, S.E.

GARDENER (HEAD, WORKING).—Age 32, married, no family; has had eighteen years' practical experience of both Early and Late Forcing of Fruit, Flowers, and Vegetables; also Flower and Kitchen Gardening. Can be well recommended from previous and present employers.—W. WEIR, Fetcham, Leatherhead, Surrey.

GARDENER (HEAD, WORKING).—Married; thoroughly understands the Management of Vineries, Greenhouses, Melons, Cucumbers, Fruit, Flower, and Kitchen Garden. Twenty-five years' experience. Over eleven years Head Gardener to present employer, of whom first-class references can be had.—Address, stating wages, &c., to G. K., Chipperfield, near Rickmansworth, Herts.

GARDENER (HEAD, or SINGLE-HANDED). Married, two children. Five and a-half years' good character from last situation. Apply, stating wages, &c., to B. E., Christopher Cottage, Burton Hill, London, S.W.

GARDENER (HEAD, or SINGLE-HANDED).—Age 33, married; understands Gardening in all its branches. Leaving through Gentleman going away. Three years' good character.—W. H., Sheale Post Office, near Reading, Berks.

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GARDENER (UNDER), in a good Garden.—Age 24, has a general knowledge of Gardening, both Outdoor and under Glass (including Pines, Melons, Grapes, &c.). Four years in present situation, last two in Indoor Department.—J. LEGG, The Garden, Chilworth Manor, Romsey, Hampshire.

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FOREMAN.—Has a general knowledge of Forcing Vines, Peaches, Cucumbers and Melons; Greenhouse and Conservatory work, also Fruit and Kitchen Garden.—I. EVERY, Grove Villa, Landulph, Hatt, Cornwall.

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NURSERY MANAGER.—Has had considerable experience in the Propagation and Management of Coniferæ, Rhododendrons, Roses, Fruit Trees, Ornamental Trees, Shrubs, &c., Indoor and Outdoor. First-class references.—E., Messrs. Keith & Co., Edinburgh.

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PROPAGATOR and GROWER (good), Nursery, Market, or Private. Good useful man to a good Employer, Neighbourhood of London, and good wages.—M., Post Office, Old Isleworth, W.

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To Head Gardeners.

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TO FLORISTS.—The Advertiser is open for an appointment as Head Man in a first-class Florist's shop. Understands Plants and Flowers, fitting up Fern Cases, Epergnes, and Dining-room Decoration; and is well up in the Seed and Bulb Trade—indeed, everything appertaining to a first-class shop.—M. P., 97, St. John's Wood Terrace, St. John's Wood, N.W.

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"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided our breakfast tables with a delicately-flavoured beverage which may save us many heavy doctors' bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal shaft by keeping ourselves well fortified with pure blood and a properly nourished frame."—*Civil Service Gazette.*

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The best remedy for ACIDITY of the STOMACH, HEARTBURN, HEADACHE, GOUT, and INDIGESTION, and Safest Aperient for Delicate Constitutions, Ladies, Children, and Infants.
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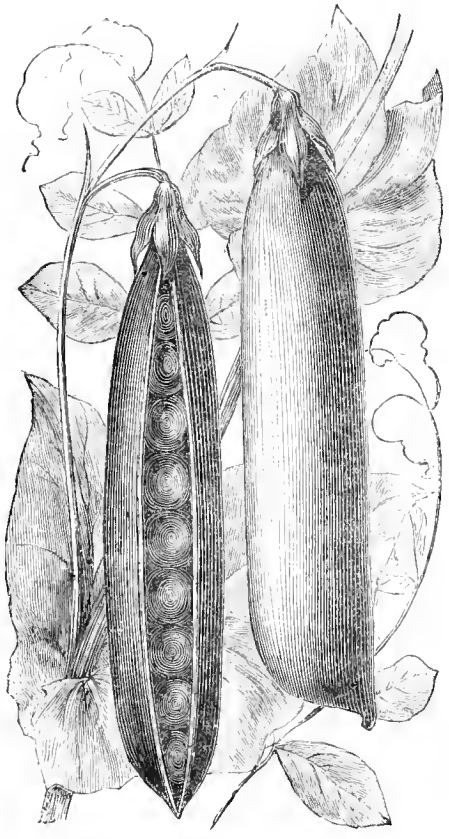
The best and most distinct Early Pea.



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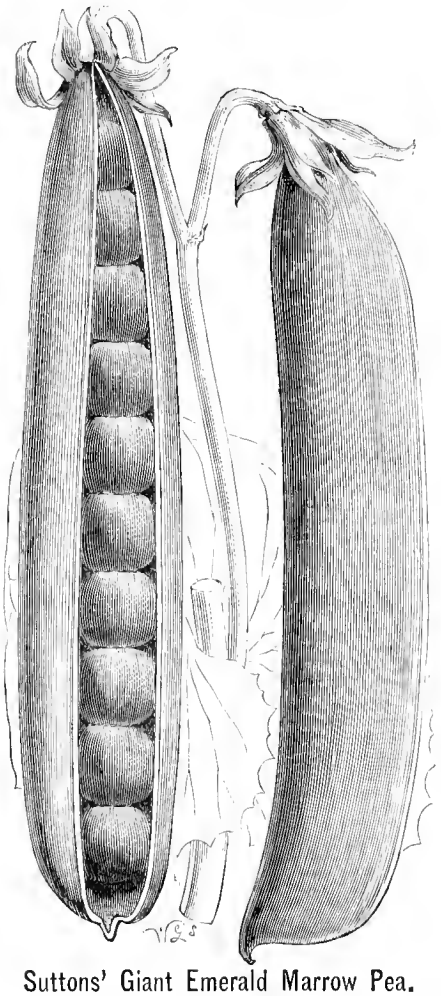

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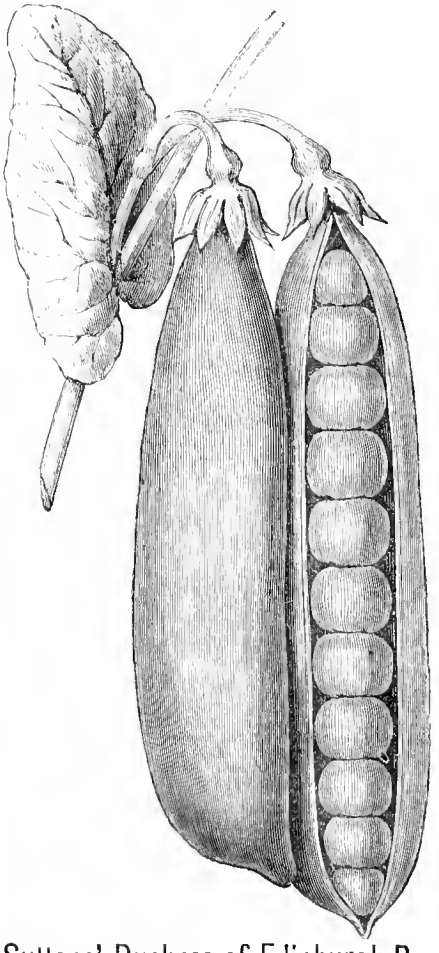

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Price, 2s. 6d. per Quart.

NEARLY £100 IN PRIZES, INCLUDING 18 GOLD, SILVER, AND BRONZE MEDALS,

will be offered by SUTTON AND SONS at the Royal Horticultural Society's Meetings during 1876, for the best Vegetables, Fruits, and Potatos, including Special Prizes for the above Peas.

Full Particulars and Conditions of Competition Gratis and Post free on application.

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Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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THE GARDENERS' CHRONICLE

VOLUME for JULY to DECEMBER, 1875.

W. RICHARDS, 41, Wellington Street, Strand, W.C.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

The ADJOURNED ANNUAL GENERAL MEETING of the Royal Horticultural Society will be HELD in the COUNCIL ROOM, South Kensington, on THURSDAY, February 24, to reconsider the Privileges of the Fellows for 1876. Chair to be taken at 3 o'Clock P.M.

Notice.

ROYAL AQUARIUM SUMMER and WINTER GARDEN.—SCHEDULES of all the FLOWER and FRUIT EXHIBITIONS are now ready, and may be had by applying to

JOHN WILLS, Superintendent of Horticultural Exhibitions, Royal Aquarium Summer and Winter Garden, Westminster, London, S.W.—Feb. 9.

ROYAL MANCHESTER BOTANICAL and HORTICULTURAL SOCIETY. ARRANGEMENTS for 1876.

FLORAL MEETING at the Town Hall, March 14.

EXHIBITION of AURICULAS, &c., at the Town Hall, April 25.

NATIONAL HORTICULTURAL EXHIBITION, at the Gardens, June 2 to 9.

EXHIBITION of CARNATIONS, FRUITS, &c., at the Gardens, August 11 and 12.

SCHEDULES may be had from the undersigned.

BRUCE FINDLAY, Curator and Secretary.

Botanical Gardens, Manchester.

RICHMOND HORTICULTURAL SOCIETY.

President—H.S.H. the Duke of Teck, G.C.B.

The SECOND EXHIBITION of PLANTS, FLOWERS, FRUITS, VEGETABLES, and TABLE DECORATIONS, will be held in the Old Deer Park, Richmond Green, S.W. (by the kind permission of Mr. Fuller), on THURSDAY, June 29. Schedules are now ready, and may be obtained of the Honorary Secretary. ALBERT CHANCELLOR, Hon. Sec.

1, King Street, Richmond, Surrey, S.W., Feb. 18.

CLAY CROSS HORTICULTURAL SOCIETY.—The NINETEENTH ANNUAL EXHIBITION, August 15. Prizes (open to All England), for Twenty Plants, £25, £20, £15, £10, £5. Other Prizes for Plants, Flowers, and Fruits in proportion. Total amount of Prizes, £363. Schedules by the end of this month.

Clay Cross, near Chesterfield. J. STOLLARD, Sec.

A limited number of Advertisements of an appropriate character will be inserted in this Schedule, which has a very large circulation. For particulars apply to the printers, Messrs. CHAS. PLUMBE and SON, Sutton-in-Ashfield, Notts.

MR. LAXTON'S NEW PEAS—For descriptions of "The Shah" and "Standard," also of "Unique," "Dr. Hogg," "Connoisseur" and "Supplanter"—Four First-class Certificates—see large Advertisement at p. 232 of this week's *Gardeners' Chronicle*.

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SUTTON'S GRASS SEEDS for PASTURES, 22s. 6d. to 36s. per Acre. Carriage free.

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SUTTON'S GRASS SEEDS for GARDEN LAWNS, 20s. per Bushel. Carriage free.

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VINES.—Fine CANES, some hundreds at 42s. per dozen for planting. FRUITING SIZED CANES, first-class quality, 10s. 6d. each. Usual discount to the Trade. List of sorts on application.

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Victoria and Paradise Nurseries, Upper Holloway, London, N.

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J. HARTNELL, Bailiff, Houghton Hall, Rougham, Norfolk.

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LOMBARDY POPLARS, fine large, 20 to 30 feet high, 3s. to 5s. each. Delivered on Rail.

T. JACKSON and SON, Nurseries, Kingston, Surrey.

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CRANSTON and MAYOS, Cranston's Nurseries, Hereford.

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WANTED, CLEMATIS ROOTS, or strong Plants of C. FLAMMULA, or any other hardy Clematis. Address price and particulars to

WM. WOOD and SON, The Nurseries, Maresfield, Uckfield, Sussex.

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WANTED, a few bushels of good FIBROUS LOAM; stiff soil preferred. State price per four-bushel sack.

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CARTER'S POPULAR COLLECTIONS of the best VEGETABLE SEEDS produce a constant supply of Choice Vegetables All the Year Round.

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Standard and Dwarf Roses.

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The Nurseries, Great Berkhamsted, Herts.

To the Trade.

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Helleborus niger (Christmas Rose).

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ACER NEGUNDO, for grafting this summer, 24s. per 1000.

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To the Trade.

MAIDEN APRICOTS, PEACHES and NECTARINES, magnificent trees. Price on application.

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Mangel and Swede.

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To the Trade.

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Helcia sanguinolenta	Odontoglossum sceptrum
Masdevallia polysticta	Oncidium macranthum
Odontoglossum Hallii	Odontoglossum Roezlii
Maxillaria venusta	Cattleya Aclandiæ
Odontoglossum angustatum	Odontoglossum vexillarium
Oncidium superbiens	Dendrobium Kingianum
Odontoglossum Andersonianum	Odontoglossum odoratum
Masdevallia Harryana	Odontoglossum cirrhosum
Odontoglossam blandum	Oncidium Marshallianum

And various other choice species ; also 100 growing plants of Odontoglossum crispum (Alexandræ) ; a large importation, just received, in good condition, of Saccolabium Blumei majus, and a quantity of good plants of Odontoglossum cirrhosum, Odontoglassum Hallii, Oncidium pentadactylon, Dendrobium barbatum, Acrides maculosum, Saccolabium curvifolium, and various others.

On view the morning of Sale, and Catalogues had.

Plants and Bulbs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, February 23, at half-past 12 o'Clock precisely, Specimen AZALEAS, PALMS, EUCHARIS, FERNS, &c., the property of a Gentleman ; also a quantity of Standard and Dwarf ROSES, SHRUBS, FRUIT TREES, HERBACEOUS PLANTS, GLADIOLI, ANEMONES, RANUNCULI, LILIUMS, &c.

On view the morning of Sale, and Catalogues had.

Choice Lilies, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, February 24, at half-past 12 o'Clock precisely, without reserve, an exceedingly choice Collection of LILIUMS, mostly English grown, consisting of Liliums Krameri, Wilsoni, Buschianum, Catesbæi (true), giganteum, Brownii, Washingtonianum, neilgherrense, dalmaticum, colchicum, callosum, canadense, rubrum and flavum (true), carolinianum, Maximowiczii, pardalinum, puberulum, Humboldtii, Bloomerianum, parvum, auratum virginale (pure white), speciosum punctatum, tigrinum, Leopoldi, &c. ; also an importation of new AMARYLLIS, an importation of TREE FERNS and TODEA SUPERBA ; a splendid collection of CALOCHORTI and CYCLOBOTHRA and other Californian bulbs ; fine flowering plants of CYPRIPEDIUMS, including japonicum, spectabile, &c. ; also established plants of the rare JAPANESE ORCHIDS, Calanthe Sieboldi (yellow), Dendrobium, &c. ; 2000 fine bulbs of LILIUM AURATUM, and 1000 LILIUM KRAMERI, and a quantity of GLADIOLI, ANEMONES, RANUNCULI, &c.

On view the morning of Sale, and Catalogues had.

Orchids, Lilies, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, February 25, at half-past 12 o'Clock precisely, a valuable consignment of ORCHIDS, in good condition, including Dendrobium Farmeri, Pleione, new species ; Aerides Fieldingii, Cymbidium eburneum, Vanda cœrulea, Vanda undulata, Saccolabium ampullaceum, Pleione Hookeri, Aerides affine superbum, and various other varieties ; also a consignment of Orchids and Bulbs, just arrived from Japan in splendid condition, including Dendrobium japonicum, Angræcum falcatum, Calanthe Sieboldii, Goodyera japonica, Platanthus radiata, Lilium Krameri, L. mediohioides, L. auratum, and various others.

On view the morning of Sale, and Catalogues had.

Prize Amaryllis.

MR. J. STEVENS has been favoured with instructions from Charles Kieser, Esq., of Broxbourne, to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, March 9, at half-past 12 o'Clock precisely, his entire, extensive, and unique COLLECTION of AMARYLLIS SEEDLINGS, raised by him, which always gained the First Prizes at the Shows of the Royal Horticultural Society and Royal Botanic Society, and a number of First Class Certificates, and were so favourably noticed by all Floral Magazines.

May be viewed the morning of Sale, and Catalogues had shortly.

Pine-apple Nursery, Edgware Road.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions from Mr J. Weeks to offer for SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., almost without reserve, about the MIDDLE of APRIL, the Valuable PREMISES and GOODWILL of the PINE-APPLE NURSERY, Maida Vale, Edgware Road, W., together with Dwelling-house, Seed Shop, and Offices, and all the extensive ranges of Horticultural Buildings and Sheds.

Held :—As to part, for a term which will expire in 1909, at a Ground-rent of £45 ; and, as to the remainder, for a term which will expire in 1923, at a Ground-rent of £89. The Nursery has, within the last three or four years, been very greatly enlarged and improved, upwards of £10,000 having been expended in additions, improvements, and repairs ; and it is considered in the Trade to be the most important Establishment of the kind in the World. It possesses an extensive connection both in the Nursery and Seed Trade, amongst the Nobility and Gentry and their Gardeners. Part of the purchase-money may remain on Mortgage.

Nurseries in the immediate neighbourhood of London are seldom valued by the acre ; but this is an exception, as the Horticultural Buildings and Show-grounds cover about 2½ Acres, and form a most valuable property, and well adapted for a Skating Rink, permission for which can no doubt readily be obtained, as well as a Nursery Business.

For further particulars apply to Messrs. KEARSEY, SON, AND HAWES, 35, Old Jewry, London, E.C. ; and Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

City Auction Rooms, 38 & 39, Gracechurch Street, E.C.

IMPORTANT SALE of about 200 choice Double CAMELLIAS, 2 to 4 feet, English grown, and beautifully furnished with bloom-buds ; choice AZALEA INDICA, ERICAS, EPACRIS, FUCHSIAS, DAHLIAS, &c., and a superb assortment of Standard, Dwarf, and Climbing ROSES, of the best varieties ; selected FRUIT TREES, CONIFERÆ, and EVERGREEN SHRUBS, hardy AMERICAN PLANTS, with some choice LILIUMS, GLADIOLUS, RANUNCULUS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, E.C., on TUESDAY, February 22, at half-past 12 o'Clock precisely.

On view the morning of Sale. Catalogues may be had at the Rooms, and of the Auctioneers, &c., 98, Gracechurch Street, E.C., and Leytonstone, E.

Tooting, S.W.

IMPORTANT SALE of Extra Thriving NURSERY STOCK, remarkably well grown, and in excellent condition for removal, comprising thousands of Border Shrubs, admirably adapted for effective planting, bushy Hybrid and Pontica Rhododendrons, well set with buds, Aucubas, &c. ; also a splendid assortment of Fruit and Ornamental Trees, Standard and Dwarf Roses to name ; likewise a quantity of Hardy Climbers in pots, &c.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. R. Parker to SELL by AUCTION, on the Premises, Exotic Nursery, Tooting, Surrey, fifteen minutes' walk from Tooting Junction and Balham Stations, on TUESDAY, February 22, at 11 for 12 o'Clock precisely, without reserve.

Viewed day prior. Catalogues had of the Auctioneers, 98, Gracechurch Street, E.C.

Near Sunningdale Station, Bagshot, Surrey.

G. BAKER, DECEASED.

MESSRS. PROTHEROE AND MORRIS are instructed by the Mortgagees to SELL by AUCTION on the Premises, the American Nursery, Windlesham, near Bagshot, Surrey, on WEDNESDAY and THURSDAY, February 23 and 24, at 12 o'Clock precisely, without reserve, 6000 young best named RHODODENDRONS, about 9 inches to 2 feet, mostly set with bloom-buds ; thousands of KALMIAS, Ghent AZALEAS, LEDUMS, 1000 variegated HOLLIES, 3000 RETINOSPOREA AUREA, 10,000 LIGUSTRUM, &c., particularly worthy the attention of the Trade and large buyers, it being mostly young stock, and light of carriage. Luncheon provided on the premises.

Now on view. Catalogues had on the Premises ; and of the Auctioneers, 98, Gracechurch Street, E.C.

Hendon, Middlesex, N.W.

Dissolution of Partnership of the old-established firm of Messrs. J. and A. Wright. The first of four important CLEARANCE SALES, LEASE and STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION without reserve, on the Premises, The Bell Lane Nurseries, Hendon, Middlesex, N.W., on TUESDAY, February 29, and two following days, at 11 for 12 o'Clock each day, the whole of the thriving and particularly well grown NURSERY STOCK extending over 11 acres and comprising thousands of Standard Roses, also several quarters of Briers just planted ; many thousands of Forest Trees ; 2000 fine Limes, 10 to 12 feet ; 10,000 Ligustrum ovalifolium ; considerable quantity of Laurels, Cupressus, Berberis, and other useful shrubs ; 2000 bushy Aucubas, thousands of hardy Climbers in pots. Also four strong, useful HORSES, bred on the premises, a large spring MARKET VAN, two strong light CARTS, capital DOG-CART, sets of Harness, Garden Implements, and other effects. The valuable LEASE of this Nursery will be offered on the first day of Sale, at 12 o'Clock precisely, prior to the sale of the Stock.

N.B. The Sales of the remaining Leases and Stock will take place in the following order :—

March 7, 8 and 9, at the Church End Nursery, Hendon, Middlesex, N.W.

March 14 and 15, at the Nursery, Mill Hill, Hendon, Middlesex, N.W.

March 17, at the Nursery, Edgware, W.

The Stock, &c., may be viewed any day prior to the Sales. Catalogues of Stock, printed Particulars of Leases, may be obtained at the several Nurseries ; of Messrs. ALLEN AND SON, Solicitors, 17, Carlisle Street, Soho, W. ; and of the Auctioneers and Valuers, 98, Gracechurch Street, City, E.C.

Clarendon Nursery, Maida Vale, St. John's Wood, and WILLESDEN, MIDDLESEX.

Highly Important to NURSERYMEN, FLORISTS, SEEDSMEN, and OTHERS desirous of securing a most valuable LEASEHOLD PROPERTY at the West End of London, universally renowned as one of the first Floral Establishments in the United Kingdom, patronised by the Nobility and the leading Gentry.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. F. Videon to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on MONDAY, March 13, at 1 for 2 o'Clock precisely, the valuable LEASES and GOODWILL of the old-established NURSERY GROUNDS, known as Clarendon Nursery, occupying the choicest position in the centre of the most aristocratic and *elite* of London Society, possessing 341 feet frontage, or thereabouts, to the Maida Vale and St. John's Wood Roads, London, N.W., and containing an area of about three-quarters of an acre of very Choice Land, with the following glass erections and other offices standing thereon :—An elegant modern Circular and Iron Roof Conservatory, communicating with Shop and Office ; the extensive Range of Greenhouses and Forcing Pits, fitted up with modern appliances. There is likewise a convenient Twelve-roomed Detached Family Residence, excellent Stabling and Coach-houses. The whole is held under leases of the average term of forty years unexpired, at the exceedingly low ground rent of £42 per annum. Also the LEASE of the BRANCH NURSERY at WILLESDEN, with several newly-erected Greenhouses and other Buildings standing thereon.

Particulars of Sale may be had, when ready, of J. A. BERTRAM, Esq., 22, Chancery Lane, W.C. ; and of the Auctioneers and Valuers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Preliminary.—Sale of a very Valuable Collection of

Specimen and Half-specimen STOVE and GREENHOUSE PLANTS, the whole of which have been exhibited.

ARTINGSTALL AND HIND (the surviving Partners of the late Firm of CAPES, DUNN & Co.) beg to announce that they have received instructions from Messrs. E. Cole & Sons to SELL by AUCTION, about the middle of April, at their Nurseries, Withington, near Manchester, the valuable Collection of EXHIBITION PLANTS.

Catalogues will be prepared in due course, and further information may be had by applying to the Auctioneers, 5, Princess Street, Manchester.

Abergavenny—Pentre Nursery Grounds, Brecon Road,

Close to the Brecon Road Station of the London and North-Western Railway, and about a mile from the Abergavenny Station of the Great Western Railway.

HIGHLY IMPORTANT SALE of VALUABLE NURSERY STOCK.

MESSRS. STAKER AND LAKE have been instructed by Mr. Wm. Saunders (his Lease having expired), to SELL by AUCTION, on the Pentre Nursery Grounds, on THURSDAY, February 24, the following valuable NURSERY STOCK, consisting of 100,000 Spruce Firs, 1 to 5 feet ; 30,000 Scotch Firs, 1 to 4 feet ; 10,000 Pinus austriaca, 2 to 4 feet ; 2000 Balm of Gilead Fir, 2 to 3 feet ; 75,000 strong Evergreen Privet, 2 to 4 feet ; 50,000 English Oak, 2 to 8 feet ; 10,000 Beech, 1 to 6 feet feet ; 5000 Wych Elm, 2 to 6 feet ; 4000 Spanish Chestnut, 2 to 8 feet ; 4000 Horse Chestnut, 4 to 12 feet ; 15,000 Laurustinus, 1 to 2 feet ; 10,000 Laurel, 1 to 3 feet, and a number of miscellaneous ornamental Trees, suitable for Parks, Avenues, or effective Landscape Painting, comprising Norway Maple, Sycamore, English and Turkey Oak, Spanish and Horse Chestnut, Elm, &c., from 10 to 15 feet.

Now on view. Apply to Mr. WILLIAM SAUNDERS, or to the Auctioneers—Offices, 2, Tiverton Place, Abergavenny, and Market Chambers, Brynmawr.

WANTED, a Small FLORIST BUSINESS, or a place suitable for one. E. C., 55, Loughborough Road, Brixton, S.W.

Antibes.

FOR SALE, the BEAUTIFUL PROPERTY of the late Mons. G. THURET, the eminent French Botanist, measuring about 72 acres, at Cape Antibes, on the shores of the Mediterranean. The Garden contains an almost unrivalled collection of Exotic and other Plants, accumulated during the past fifteen years by the late owner, estimated at 3000 species, living in the open air. For full descriptions, with cuts, see *Gardeners' Chronicle*, December 4, 1869 ; January, 30 ; February 13, 20 ; April 17 ; and July 31, 1875. The House, containing the usual reception rooms and five bedrooms, is in good order ; it commands the most lovely views of the Bay of Nice, the Esterelles Mountains, and the snowy range of the Alpes Maritimes. There is a large Kitchen Garden, also convenient Outhouses, a Cottage, and Stabling. Apply to

Dr. E. BORNET, Antibes ; or to T. HANBURY, Palazzo Orengo, Mentone.

To Florists, Walthamstow.

TO be LET on LEASE, in Summit Road, Walthamstow, a small compact NURSERY GROUND, of about half an acre, with Cottage and three large Greenhouses, one of which is 80 feet long, 14 feet wide, and heated by hot water. Immediate possession can be had. Rent £40 per annum. For further particulars, apply to

Mr. HOUGHTON, Solicitor, 15A, St. Helen's Place, London, E.C. ; or to Messrs. PROTHEROE AND MORRIS, Auctioneers, 98, Gracechurch Street, London, E.C.

Billingshurst, Sussex.

To NURSERYMEN and OTHERS.

TO BE LET, with Immediate Possession, about SIX ACRES of NURSERY GROUND, adjacent to the Village and Railway Station. For particulars apply to T. BAKER, Billingshurst, Sussex.

TO BE LET, a First-class NURSERY, with capital Houses, and close to Newbury Station. Rent moderate. Incoming by valuation. Cash required, about £500. Apply,

Mr. J. A. JOHNSTON, Estate Agent, Newbury, Berks.

WANTED TO RENT, at Michaelmas next, a HOUSE with Eight or Nine Rooms ; a Small Range of Glass, and not less than an Acre of Land. Must be within 12 miles of London, and not more than a mile from a Railway Station.

C., Mr. Audus's, 42, Exmouth Street, Commercial Road, E.

Isle of Wight.

TO BE LET, FURNISHED, from the commencement of May to the end of October, a CHARMING COUNTRY RESIDENCE, standing in its own well-arranged grounds of 4 acres, situate midway between Carisbrooke and Newport, and within a quarter of an hour's walk of Newport Station. The Residence, which is approached by a Carriage Drive, contains Drawing and Dining-rooms, Ante-room opening into a large Conservatory, eight Bedrooms, Kitchen, and complete Domestic Offices. The Grounds, which are carefully kept, comprise nearly 3 acres of Pleasure Garden tastefully laid out in Walks and Parterres, with three distinct Croquet Lawns, Summer House, &c., a well-stocked Orchard, good Kitchen Garden, and small Paddock, with Greenhouses, Hothouse, &c., Stabling for three Horses, with separate entrance. The whole forms a most enjoyable resort for any one taking an interest in Floricultural pursuits. Rent, 12 guineas per week, or 15 guineas if the Proprietor pays the Gardeners. For particulars and orders to view, apply to

Mr. HENRY VULLIAMY, Surveyor, 17, Abchurch Lane, London, E.C. ; or to Messrs. PITTIS AND SON, Auctioneers Newport, Isle of Wight.

N.B. Railway communication is now open from Newport to Cowes, Ryde (direct), Sandown, Shanklin, and Ventnor.

The Best White Spined Cucumber is

SUTTON'S DUKE OF CONNAUGHT.

"Quite tender and deliciously flavoured ; for beauty and quality cannot be surpassed."—SHIRLEY HIBBERD.

"The best I ever saw."—R. DRAPER, *Gr. to the* Right Hon. Earl Vane.

"Most excellent."—C. PENNY, *Gr. to* H.R.H. the Prince of Wales. Per packet, 2*s.* 6*d.*

SUTTON AND SONS, The Queen's Seedsmen, Reading.

VEITCH'S IMPROVED ASHLEAF KIDNEY POTATOS, warranted true. Cash price, 6*s.* per bushel.

G. STEVENS, St. John's Nursery, Putney, S.W.

Special Culture of Fruit Trees and Roses.

THE DESCRIPTIVE and ILLUSTRATED CATALOGUE of FRUITS (by THOMAS RIVERS) is now ready ; also CATALOGUE of Select ROSES. Post-free on application.

THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

G. CHORLEY, Midhurst, has to offer :—CHESTNUTS, Spanish, 2 to 3 feet, 40*s.* ; 18 inches to 2 feet, 30*s.* ; 100,000 Seedling do. ASH, 25*s.* to 30*s.* ALDER, 25*s.* to 30*s.* THORN QUICK, 12*s.* 6*d.* All stout, well-rooted, transplanted.

The Most Beautiful new Pelargonium is

BEAUTY OF ONTON.
Price, 1 guinea each.
A pretty and charming novelty is the new double-flowering IVY-LEAVED PELARGONIUM, "KONIG ALBERT" Price 7s. 6d. each
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Special Offer, to Clear the Ground.

MULBERRIES.—The finest lot of Standards in England; also a quantity of 1-yr. and 2 yr. old Plants. Prices low. Apply to
BENJAMIN R. CANT, Nurseryman, Colchester.

Special Offer, to Clear the Ground.

PEARS.—A superb lot of extra tall and strong Standards. Prices low. Apply to
BENJAMIN R. CANT, Nurseryman, Colchester.

FOREST TREES, the quickest growing. For particulars, see *Gardeners' Chronicle*, p. 162, Feb 5.
W. JACKSON AND CO., Nurseries, Bedale, Yorkshire.

MYATT'S ASHLEAF KIDNEY SEED POTATOS.—A quantity for Sale, cheap: grown on light soil. Apply to
A. MACK, Esq., Whitehall Farm, Cambridge Town, Surrey.

Centaurea candidissima (Wholesale Price).

WOOD AND INGRAM offer fine summer sown plants of the above, thoroughly established in thumb pots, at 20s. per 100; package, 3s 6d. per 100, or 2s. for 50, not less than which will be sold at the price
The Nurseries, Huntingdon.

RASPBERRY CANES.—To be Sold cheap, a large quantity; also 2-yr. old BLACK and RED CURRANT BUSHES. Apply to
S. HEIGHT, Foreman, Farnborough Hall Farm, Farnborough, Kent, or to Mr. C. M. DERRY, Gedney, Lincolnshire.

Special Offer.

LAURELS.—A large quantity, suitable for Shrubberies, Game Covers, &c., in good condition for removal, 2 to 3 feet, 10s. per 100; 3 to 3½ feet, 13s. per 100, package free.
G. M. DARBYSHIRE, The Nurseries, Enderby, near Leicester.

The Best Lawn Mixture.

JAMES DICKSON & SONS' FINEST LAWN MIXTURE, for Forming New or Renovating Old Lawns, is VERY SUPERIOR to all others.
108, EASTGATE STREET, CHESTER.

FRUIT TREES.—One of the largest stocks in the county, consisting of Standard and Pyramid CHERRIES, APPLES, PEARS, and PLUMS, from 70s. per 100. Also a large quantity of extra strong Standard and Espalier GREEN GAGES. Catalogues of
T. EVES, Gravesend Nurseries.

To the Trade.

SEAKALE, for planting, very fine, 30s. per 1000. 100,000 COMMON LAURELS of all sizes, from 1 foot to 5 feet, price on application.
WM. WOOD AND SON, Woodlands Nurseries, Maresfield, Uckfield, Sussex.

NEW PEAR, "LUCY GRIEVE."—First-class Certificate; described in Dr. Hogg's new *Fruit Manual*, and in our own CATALOGUES.
E. G. HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, N.W.

VERBENAS, VERBENAS, VERBENAS. White, Purple, Scarlet, and Pink; also twelve extra choice named varieties, strong, healthy-rooted cuttings, perfectly free from disease, 6s. per 100, 50s. per 1000, for cash.
H. BLANDFORD, The Dorset Nurseries, Blandford

Verbenas, Verbenas, Verbenas.

WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

VINES.—A superior lot of fine CANES of all the leading sorts for Planting or Fruiting; will carry several fine bunches this year; 5s. each. L. W.'s system of packing saves half the cost of carriage.
LEWIS WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.
Mr WEBB, Calcot, Reading.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

Every one that has a Farm or Garden should see

QUINCEY'S RETAIL PRICE LIST of ENGLISH and AMERICAN POTATOS, where quantity, quality, and cheapness are combined. Free on application to
CHRISTMAS QUINCEY, Potato Grower and Merchant, Peterborough.

EXCELLENT GARDEN SEEDS.
CHOICE FLOWER SEEDS.
SUPERIOR FARM SEEDS.
See Illustrated and Priced LIST, to be had free on application. The superiority of these Seeds is proved by the numerous testimonies constantly received, and those who wish for a superior article should order at once of
HARRISON AND SONS, Seed Growers, Leicester.

To the Trade.

JACS. JURRISSEN AND SON beg to call particular attention to their large stock of FRUIT TREES, Dwarf-trained PEACHES and APRICOTS, Standard ORNAMENTAL TREES and SHRUBS, HOLLIES, ROSES, CONIEERÆ, and FOREST TREES.
Wholesale TRADE LIST now ready, free on application.
Nurseries, Naarden, near Amsterdam, Holland.

The Longest-podded Bean is

NEW GIANT SEVILLE LONGPOD. This is the longest-podded Bean known. We grew some last year 1 foot in length. It is also very handsome in shape. Was awarded a First-class Certificate by the Royal Horticultural Society. Price 2s. 6d. per quart.
SUTTON AND SONS, The Queen's Seedsmen, Reading.

Fruiting Vines.

H. LANE AND SON have still some fine Fruiting Canes to offer, of their usual excellent quality. H. L. AND SON have always taken the First Prize for Vines in Pots at all the leading exhibitions. The Vine eyes, being taken from our own Vineries, may be depended on as true to name.
The Nurseries, Great Berkhamsted, Herts.

To the Trade

Home-grown GARDEN and AGRICULTURAL SEEDS.
H. AND F. SHARPE'S Wholesale Special Priced LIST of the above Seeds of 1875 growth is now ready; it comprises all the best sorts in cultivation. The quality is very fine, and the prices will compare favourably with those of other growers.
Seed Growing Establishment, Wisbech.

SPECIMEN TREES and SHRUBS. WELLINGTONIAS, 14 to 16 feet; THUJA LOBBII, 12 to 15 feet; LAURUSTINUS, bushy, 5 feet; PICEA PINSAPO, Sweet BAYS, Evergreen OAKS, in pots; CEDRUS ROBUSTA, &c., moved Spring, 1873. List sent. CLARKE, Nursery, Wellington, Somerset.

Maiden Nectarine and Peach Trees.

JAS. GARAWAY AND CO. offer the undermentioned varieties, clean, well-grown stuff, at 60s. per 100:—Elruge, Pine-apple, and Pitmaston Orange NECTARINES; Bellegarde, Barrington, Late Admirable, Noblesse, Royal George, and Walburton Admirable PEACHES
JAS. GARAWAY AND CO., Durdham Down Nurseries, Clifton, Bristol.

To the Trade.

DWARF-TRAINED PEARS.—Five to Seven-branched Trees, extra fine, £5 per 100, the following varieties:—Beurré Clairgeau, Brown Beurré, Beurré d'Amanlis, Beurré Diel, Chaumontelle, Citron des Carmes, Fondante d'Automne, Glou Morceau, Jargonelle, Louise Bonne of Jersey, Marie Louise, Williams' Bon Chretien, Winter Nelis.
JAS GARAWAY AND CO., Durdham Down Nurseries, Bristol.

The Best Wax-pod or Butter Bean is

MONT D'OR, a remarkably early and distinct French variety, producing an immense quantity of wax-like pods, very tender and fleshy; leaves small and pale in colour. Awarded First-class Certificate by the Royal Horticultural Society. Per quart, 2s. 6d.
SUTTON AND SONS, The Queen's Seedsmen, Reading.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving Size, Price, Popular and Botanical Names, Derivations, Description, Form, Colour, Foliage, Growth, Timber, Use in Arts, Native Country and Size there, Situation, Soil, and other information, with copious Index of their many Synonyms. Free by post for six stamps.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

VEGETABLE and FLOWER SEEDS.—In these days of Handsome, Beautiful, and, we may add, Costly CATALOGUES, perhaps few can be satisfied now with a plain, common-sense one. To such, however, we shall be glad to forward ours, free on application. We undertake to supply really good Seeds at moderate prices.
W. P. LAIRD AND SINCLAIR, Nurserymen and Seedsmen, Dundee, Scotland.

JOSEPH SMITH, SEN., Tansley and Scotland Nurseries, near Matlock, Derbyshire, has for Sale:—
RHODODENDRON PONTICUM, 4-yr. old seedlings, not grown on bog, but on heath soil, with fine roots; stiff healthy plants, 3 to 4 inches high, 5s per 1000. Also Hybrid Catawbiense, named sorts, 7s. 6d. per 1000; with transplanted, from 1 to 1½ foot up to 3 and 4 feet, at very low prices, which can be had on application.
OAKS, large quantity, 3 to 4 and 4 to 5 feet.
With a GENERAL NURSERY STOCK. Prices on application.

HARDY AZALEAS for POTTING and FORCING.—Choice Belgic, American, and other hardy Azaleas, together with RHODODENDRON FRAGRANS and AZALEA AMŒNA are offered in nice compact plants, well set with bloom-buds, at 18s. and 21s. per dozen. Few plants are more acceptable for furnishing Cut Flowers or decorating the Conservatory throughout the early spring.
WM. MAULE AND SONS, The Nurseries, Bristol.

BEECH, BEECH, BEECH—2 to 3 and 3 to 3½ feet, well rooted, 7s. 6d. per 1000; also LAURUSTINUS, ARBUTUS, PORTUGAL LAURELS, PINUS INSIGNIS, CEDRUS DEODARA, THUJA GIGANTEA all cheap.
SAMUEL BALE, Westacott Nursery, Barnstaple.

To Market Gardeners, Farmers, and large Growers of POTATOS

G. AND W. STEELL, NURSERYMEN, &c., of Richmond, Surrey, beg to offer the following New AMERICAN POTATOS—Early Rose, Early Goodrich, Early Prolific, Early Snowflake, and Extra Early Vermont, very low. Special prices for large quantities can be had on application.

CHOICE HYBRID GLADIOLI. The Gladiolus being a special feature in our business, we respectfully invite Growers of this magnificent Autumn Flower to send for our CATALOGUE of Prize Varieties before making their annual purchases. In it all the best sorts are described, and the prices quoted are very moderate.
ROBERTSON AND GALLOWAY, Seed Merchants and Nurserymen, 157, Ingram Street, Glasgow.

The Best and Most Distinct Wrinkled Pea is

SUTTON'S GIANT EMERALD MARROW
"I consider your 'Giant Emerald Marrow' to be altogether a splendid Pea, quite distinct, decidedly an acquisition."—JOHN TOWILL, *Gr. to the* Right Hon. the Earl of Glasgow.
Per quart, 5s.
SUTTON AND SONS, The Queen's Seedsmen, Reading.

MR. A. CHANDLER, HORTICULTURAL VALUER, Nurseries and Private Collections of Plants valued on reasonable terms. Address,
Mr. A. CHANDLER, Underhill Road, Dulwich, S.E.

AUSTRIAN PINES, extra fine, 5 to 6 feet high, 12s. per dozen, 75s. per 100.
ELCOMBE AND SON, The Nurseries, Romsey

EDWARD TAYLOR, SEEDSMAN, Malton, Yorkshire, offers BLENHEIM HALL MELON, true, 1s. per packet, or 5s. per 100 Seeds, forwarded free through the post immediately on receipt of orders.

CUCUMBER PLANTS "TELEGRAPH," strong plants, now ready. Price, including box and packing, 12s per dozen.
A. WATKINS, Nursery, Bishop Stortford.

MYATT'S PROLIFIC EARLY KIDNEY POTATOS, delivered free on rail here for cash, price £7 per ton; new 4 lb. 4 bush. sacks, 1s. 2d. each.
W. W. JOHNSON AND SON, Seed Growers and Merchants, Boston, Lincolnshire.

NEW DOUBLE IVY-LEAF PELARGONIUM, "KONIG ALBERT;" good plants, 3s. each, 30s. per dozen.
NEW ZONAL and NOSEGAY PELARGONIUMS of 1875, 9s per dozen, own selection. Terms cash.
ELCOMBE AND SON, Florists and Nurserymen, Romsey

Thorns, Thorns, Thorns.

PARKER AND BUSH offer extra strong THORN QUICK, 2 to 3 feet, three times transplanted. Price and samples on application.
St. Michael's Hill Nursery, Bristol.

PEAR STOCKS.—The Subscribers have on hand a quantity of 3-yr. transplanted Pear Stocks, very fine, which they will dispose of very cheap, as the ground must be cleared.
THOMAS METHVEN AND SONS, Leith Walk Nurseries, Edinburgh.

A. M. C. JONGKINDT CONINCK'S MAIDEN FRUIT TREES are extra strong, and all fit for Cordons. The greatest care has been taken to have the sorts true to name.
A great quantity of ROSES can be had very cheap.
Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

GENUINE GARDEN and FARM SEEDS. Retail Priced CATALOGUE of above now ready, free on application to
W. W. JOHNSON AND SON, Seed Growers, Boston, Lincolnshire.

TO THE TRADE.—LARCH, strong, 2 to 2½ and 2½ to 3½ feet, clean grown and well-rooted. PEAR STOCKS, twice transplanted; 2-yr. seedling PEARS. ASH, 1½ to 2½ feet, and 1-yr. seedlings. QUANS, 1-yr. seedlings. VIOLAS and PANSIES, bedding; and Show and Fancy do. PHLOXES, early and late
DICKSONS AND CO., 1, Waterloo Place, Edinburgh.

The Best Flavoured Pea is

SUTTON'S DUCHESS of EDINBURGH. "I consider your 'Duchess of Edinburgh' the best Pea grown, of excellent flavour, good cropper, and a decided improvement on any other variety."—ROBERT SOWERBY, *Gr. to the* Right Hon. the Earl of Macclesfield.
Per quart, 3s. 6d.
SUTTON AND SONS, The Queen's Seedsmen, Reading.

NEW POTATO, PRINCE ARTHUR.—Undoubtedly one of the finest English-raised Potatos ever offered. See report, *Gardeners' Chronicle*, Jan. 8, 1876. A few Bushels are offered to the Trade, 20s. per bushel. List of Firms who have a supply will be published shortly.
J. JACKSON, Nursery, Kidderminster.

Genuine Seeds.

J. LAING'S CATALOGUE of KITCHEN GARDEN, FLOWER and AGRICULTURAL SEEDS, IMPLEMENTS, GARDEN REQUISITES, &c., is now ready, and can be had free on application.
Stanstead Park, Forest Hill, S.E.

RHODODENDRONS.
2-yr. seedlings. | 4 to 8 inches, transplanted.
3 yr seedlings. | 6 to 10 inches, transplanted.
8 to 12 inches, transplanted.
For Prices and Samples apply to
HENRY FARNSWORTH, Matlock Bank, Derbyshire

To the Trade.—Seed Potatos.

H. AND F. SHARPE are prepared to make Special Offers of SEED POTATOS grown on their own Farms from the finest selected stocks. Their List this season comprises all the English and American varieties worthy of cultivation. The prices will be found very moderate.
Seed-growing Establishment, Wisbech.

RICHARD SMITH'S FRUIT LIST contains a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c. Free by post for one stamp.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

LARCH, 9 to 15 inches, 6s.; 1½ to 2 feet, 20s. SPRUCE, 1½ foot, 14s. SCOTCH, 1½ foot, 14s. OAK, 3 to 4 feet, 20s. Also Green HOLLY, PORTUGAL LAUREL, THUJA LOBBII, &c. Very cheap, all sizes.
STANDARD ROSES, fine, £3 10s. per 100.
J. JACKSON, Nursery, Kidderminster

COCOS WEDDELLIANA.—Fine Seedling Plants, 6 inches high, and three to four characterised leaves, single plant, 12s.; 12 plants, 120s.; 25 plants, 240s.; 50 plants, 440s.; 100 plants, 800s.
Imported Plants, well rooted, 10 to 15 inches high, 10s. to 15s.
PRITCHARDIA FILIFERA, the most splendid Palm for Table Decoration and Greenhouse. Young Seedlings, 25 plants, 40s.; 50 plants, 80s.; 100 plants, 140s.; 1000 plants, 1200s.
ARALIA ELEGANTISSIMA and VEITCHII will be disposable by the dozen and hundred in May next, at a very reduced price, sent on application.
J. LINDEN, Exotic Nurseries, Ghent, Belgium.

SELECT VEGETABLE and FLOWER SEEDS.—Amateurs and others who may be at a loss in making a suitable selection of Seeds for the Garden, will be greatly aided by referring to our Priced Descriptive CATALOGUE of VEGETABLE and FLOWER SEEDS for 1876, which will be sent free on application. All seeds delivered free of carriage as formerly.

THOMAS KENNEDY AND CO., Seed and Nursery Establishment, Dumfries, N.B.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000: and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.

Wonersh Nursery, Guildford, Surrey.

Special Offer to the Trade for Cash.

JOSEPH GREEN, The Nurseries, Garforth, near Leeds, has to offer:—

10,000 GOOSEBERRIES, 60s. per 1000.
10,000 RASPBERRY CANES, 30s. per 1000.
5,000 CURRANTS, Red and White, 5s. per 100.
20,000 OAKS, English, 2 feet, strong, 20s. per 1000.
POTATOS, Myatt's Prolific, 20s. per 12 stones.
,, Haigh's Seedling, 20s. per 12 stones.
,, Real Imperial Ashtop, 20s. per 12 stones.
,, Belgian Kidneys, first-rate variety, 20s. per 12 stones.

Abies excelsa aurea (the Golden Spruce).

MESSRS. J. AND C. LEE beg to announce that they now intend to send out this magnificent tree. When planted in the full sunlight the whole tree is suffused with the richest gold. First-class Certificate from the Floral Committee of the Royal Horticultural Society. Well-established plants, 21s. each. A few of extra sizes, 31s. 6d. and 42s. each. The usual allowance to the Trade.

Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

SPECIAL OFFER.

FIR, Larch, 3-yr., 1½ to 2½ feet.; 4-yr., 2½ to 3 feet.
LAUREL, Common, 2 to 2½ feet.
,, Portugal, 2 to 2½ feet.
ROSES, splendid Dwarf H.P.
YEW, Irish, 3-yr. and 4-yr.
THORN QUICKS, 2-yr., 3-yr., and 4-yr.
HAWS in large quantities.

All above held in large quantities; quality fine. For prices, &c., apply to

MICHAEL GRANT AND CO., Nurserymen, Newry, Ireland.

DAVIS'S PRIZE JERSEY SHALLOT, grown from seed, for exhibition and culinary use; large—10 to 12 inches in circumference—handsome, and very mild in flavour. Stock very limited this season; 1s. per packet. Agents, Messrs. HURST & SON, 6, Leadenhall Street, London, E.C.

VIOLETS, Victoria Regina, King and Queen doubles, 4s. per dozen.

ASPARAGUS (Connover's Colossal), and SEAKALE roots.

B. R. DAVIS, Seed Warehouse, Yeovil, Somerset.

Planting Season.

CHARLES BURGESS begs to offer the following:—Strong Standard, Pyramid and Dwarf-trained FRUIT TREES, ROSES, Evergreen and Deciduous FLOWERING SHRUBS, English OAKS, ELMS, and LIMES, up to 10 feet; Larch, Spruce, and Scotch FIRS, and a general Nursery Stock. Prices on application.

The Nurseries, London Road, Cheltenham.

The New Japan Apple.

PYRUS MAULEI, is now distributing, at 21s., 15s., and 10s. 6d. each. It is as hardy as the common Apple, blossoms at the same time; the flowers are of a vivid orange-scarlet, fruit of a bright transparent lemon colour, very fragrant, about the size of the Golden Pippin Apple, which is produced in the greatest profusion.

The jam of this season has been tasted by some of the best judges and connoisseurs, and pronounced exquisite, and perhaps superior to any English or foreign fruit.

W. MAULE AND SONS, The Nurseries, Bristol.

EWING AND CO.'S TRADE LIST, also TRADE and RETAIL LISTS of NEW ROSES for 1876, CLEMATIS, &c., are now ready. 10,000 GOOSEBERRIES, 6000 NUTS, strong, fine, and cheap; also ELMS, LIMES, CHESTNUTS, and other TREES for AVENUES, 9 to 20 feet, extra fine. LADY HENNIKER APPLE, 3s. 6d. and 7s. 6d. each. EWING'S MILDEW COMPOSITION, 1s. 6d. and 3s. per bottle.

Royal Norfolk Nurseries, EATON, near Norwich.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of

WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

AVENUE TREES.

	Girth 4 ft. from ground.	
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10	inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8	,,
MAPLES, Norway, 12 to 16 feet high ..	5 to 8	,,
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10	,,
,, Scarlet, 10 to 14 feet high	8 to 10	,,
,, Double, 10 to 14 feet high	8 to 10	,,
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10	,,
ELMS, 15 to 18 feet	7 to 9	,,

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.

Knap Hill Nursery, Woking, Surrey.

Dwarf-trained Peaches and Nectarines, true to name.

Price 24s. per dozen, 150s. per 100.

THOMAS WARNER can supply fine trees of the following:—

PEACHES—Crimson Galande, Early Alfred, Early Ascot, Early Leopold, Early Louise, Early Rivers, Early Savoy, Early Silver, Rivers' Early York, Goshawk, Lady Palmerston, Golden Rathripe, Marquis of Downshire, Nectarine Peach, Radclyffe, Sea Eagle, Stump the World.

NECTARINES—Albert Victor, Prince of Wales, Rivers' White.

The Nurseries, Leicester Abbey.

CERASUS LAURO-CERASUS CAMELLIÆFOLIA (the Camellia-leaved Laurel).—This extraordinary and elegant Laurel was raised by Mr. Wood, of Woodbridge, in Suffolk, on whose behalf we are now offering it for the first time to the public. The leaves are light green, like the common Laurel, but differ from it in shape in being elegantly curled, like a Camellia leaf, or more closely resembling in form the beautiful Croton volutum.

The effect of the plant, grown as a pyramid and well pruned, is peculiarly striking, and if planted close as an edging plant, and pinched well back, it produces a very neat and pleasing appearance.

We propose to distribute this well-known variety at the following low prices, being desirous of seeing it largely used, as it deserves to be, for the purposes above-mentioned:—Per plant, 5s.; per dozen, 42s. Special offer to the Trade.

J. AND C. LEE, Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

DAVID LLOYD AND CO. (LIMITED).

CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.

Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following:—

J. T. RUBERY, 8n, Rumford Place, Liverpool.
SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
R. AND J. TAYLOR, 17, Vachel Road, Reading. [ham.

AGENTS WANTED.

To the Trade and Others.

SURPLUS STOCK, CHEAP.

VINES, fruiting and planting; dwarf-trained PEACHES, NECTARINES, PLUMS, and CHERRIES; BLACK CURRANTS; LAURELS, Common, 3 to 6 feet; PRIVET, 3 to 5 feet; CHESTNUTS, Horse, 6 to 10 feet; Scarlet do., 6 to 8 feet; ELMS, 6 to 8 feet; MAPLES, Common, Norway, and Scarlet, 6 to 9 feet; POPLARS, Abele, Black Italian, and Balsam, 6 to 10 feet; Lombardy do., 6 to 12 feet.

The above are all clean and well grown. Price on application to

B. MALLER, The Nurseries, Lee and Lewisham, S.E.

Important to Potato Growers.

PRINGLE'S HYBRIDISED POTATO SEED.—The extraordinary success which has attended Mr. Pringle in his attempts to improve this valuable esculent—which has resulted in the production of the SNOWFLAKE and ALPHA, and last, though not least, the RUBY—has encouraged him to still greater efforts in his favourite pursuit of hybridisation, and we have now the pleasure of offering a very choice strain of seed saved by him, which is the product of numerous hybridisations, variously operated, with every care during the past favourable season, between the above-named and many of the best new and old varieties in cultivation, both English and American, and includes every strain, which Mr. Pringle will himself sow the coming spring.

In order to encourage the cultivation of seedlings in this country, as well as in European countries, where the importation of the Potato is prohibited for fear of the Colorado Beetle, he has decided to offer his seed for sale, and has placed his entire stock in our hands, that all who desire may have an opportunity of giving it a trial, with the absolute certainty of producing varieties almost sure to equal, if not to excel, any hitherto offered. To prevent imposition, the seed will be put in sealed packets, with the *fac simile* of our signature upon each packet.

The following Testimonial from one of the most successful growers of Potatos in America, is a convincing proof of the wonderful productiveness of this seed:—"Last spring I obtained from C. G. Pringle some of his Hybridised Potato Seed; planted in the hotbed in the middle of April; transplanted to the open ground May 10, and I dug from one plant 10½ lb., and from another plant 6 lb. of large, smooth, handsome Potatos."

Price, per packet of 25 seeds, 2s. 6d.; five packets, 10s., with full directions for culture. All orders enclosing remittance in postage stamps or Postal Order on New York or London, will be promptly answered by return post, and guaranteed to reach the purchaser. Prices to the Trade upon application.

Please address B. K. ELISS AND SONS, Seed Merchants, 34, Barclay Street, New York, U.S.A. For sale by

Hooper & Co., Covent Garden Market, London, W.C.
James Carter, Dunnett & Beale, Holborn, London, W.C.
Christmas Quincey, Peterborough, England.
Ernst Benary, Erfurt, Prussia.
A. Busch, Gr., Massow bei Zewitz, Pomern, Prussia.

Our new Illustrated POTATO CATALOGUE mailed free to all applicants.

JOSEPH SMITH, JUN., has to offer the following, at per 1000:—

ALDER, 1 to 1½ foot, 10s.; 1½ to 2 feet, 12s.; 2 to 3 feet, 20s.; 3 to 4 feet, 28s. ASH, Mountain, 1½ to 2 feet, 15s.; 2 to 3 feet, 20s.; 3 to 4 feet, 25s.; 6 to 8 feet, 75s.; 8 to 10 feet, 110s.; 10 to 12 feet, 140s. BEECH, 1 to 1½ foot, 15s.; 1½ to 2 feet, 18s. BIRCH, 1 to 1½ foot, 15s.; 1½ to 2 feet, 18s. ELM, 1½ to 2 feet, 12s.; 5 to 8 feet, 45s. SPRUCE, 1½ to 2½ feet, 25s.; 2½ to 4 feet, 35s.; Scotch, 3 to 4 feet, 30s.; 3½ to 4½ feet, 35s. LARCH, 1 to 1½ foot, 15s. LIMES, 2 to 2½ feet, 45s.; 2 to 3 feet, 55s.; 3 to 4 feet, 75s.; 4 to 5 feet, 95s. MAPLE, Norway, 4 to 5 feet, 40s.; 5 to 6 feet, 55s.; 6 to 8 feet, 75s. OAKS, 2 to 3½ feet, 28s.; 3½ to 5 feet, 40s.; 5 to 8 feet, 60s. PINUS AUSTRIACA, 1½ to 2 feet, 20s.; 2 to 2½ feet, 25s.; 2½ to 3½ feet, 30s.; 3 to 4 feet, 40s. POPLAR, Black Italian, 2 to 3 feet, 20s.; Ontario, 2 to 3 feet, 20s.; 3 to 4 feet, 35s.; 6 to 8 feet, 90s. PRIVET, Evergreen, 9 to 15 inches, 8s.; 1 to 1½ foot, 10s.; 1½ to 2 feet, 14s.; 2 to 2½ feet, 15s.; 2 to 3 feet, 17s. QUICK, 2-yr., transplanted, 8s.; 3-yr., 10s.; 4-yr., 12s. SYCAMORE, 4 to 6 feet, 30s.; 5 to 7 feet, 35s. WILLOWS, of sorts. LAUREL, Common, 0 to 12 inches, 25s.; 1 to 1½ foot, 35s. COTONEASTER MICROPHYLLA, 1 to 1½ foot, 70s.; 1½ to 2 feet, 90s.; do. SIMONDSII, 2 to 3 feet, 50s.; 3 to 4 feet, 80s. RHODODENDRONS, &c.

CATALOGUE of General Stock sent on application.

Moor Edge Nurseries, Tansley, near Matlock, Derbyshire.

Cheap Gladioli from Paris—Named and Seedlings.

LÉVÊQUE AND SON, NURSERYMEN, Ivry-sur-Seine, near Paris, have a large and splendid stock of good and strong flowering bulbs of GLADIOLI SEEDLINGS, equal in flower to the collection, at 8s. per 100, £3 per 1000, and £26 per 10,000—mixed, white, red, and pink; per colour, 12s. to 20s. per 100; yellow, 24s. per 100; per names (100), ten sorts, 8s. per 100; 25 sorts, 14s. per 100; in 50 or 100 sorts, the best, from £1 to £6, less or more, according to the novelty of the sorts. All good flowering bulbs. English cheque on London, or Post-office Order on Paris, accepted in payment.

Dwarf Maiden Peaches and Nectarines, true to name.

Price 50s. per 100.

THOMAS WARNER can still supply the following:—

PEACHES—Crimson Galande, Dagmar, Dr. Hogg, Early Albert, Early Alfred, Early Ascot, Early Leopold, Early Silver, Rivers' Early York, Lord Palmerston, Magdala, Nectarine Peach, Princess of Wales, Radclyffe, Sea Eagle, Stump the World.

NECTARINES—Albert Victor, Dante, Darwin, Elruge, Hardwicke Seedling, Humboldt, Large Elruge, Lord Napier, Pine Apple, Rivers' Orange, Stanwicke Elruge, Victoria, Violette Hative, Rivers' White.

The Nurseries, Leicester Abbey.

SNOWFLAKE POTATO—Having grown and imported largely of this splendid new variety, we can offer FINE ENGLISH-GROWN SEED, price 6d. per lb.; 6s. per peck of 14 lb.; 21s. per bushel of 56 lb. Much cheaper by the sack or ton.

FINE IMPORTED TUBERS, same price. Orders of 21s. and upwards carriage paid.

P. M'Kinlay, Esq., Beckenham, a well-known authority, writing of this Potato in the *Gardeners' Magazine*, Jan. 15 last, says:—"My experience with American varieties has been somewhat extensive, and I find that they generally improve as they become acclimatised. . . . I have no doubt Snowflake will improve in quality, and will become one of the best in cultivation."

DANIELS BROTHERS, Seed Growers, Norwich.

New Cucumber for 1876.

LEE'S ALTRINCHAM DEFIANCE.—This Cucumber is quite a novelty, and is very distinct from anything hitherto offered to the public; it is a smooth variety, very dark green, a great cropper, and is quite unequalled in quality. Its average length is from 15 to 20 inches. The seed, which is now ready, will be sent out in sealed packets only, price 2s. 6d. per packet of five seeds. Usual allowance to the Trade.

From the Altrincham and Bowdon United Horticultural Benefit and Provident Society:—"Having seen Mr. Lee's Cucumber growing, as well as a brace before us, and taking into consideration the good qualities of it, we consider it to be one of the best ever offered to the public. We therefore name it Lee's Altrincham Defiance. (Signed) J. WALKER, Sec."

H. LEE, Florist and Landscape Gardener, Peel Causeway, Altrincham, Cheshire.

CHOICE SEEDS, &c.—

CUCUMBER, Beauty of St. Albans, the best of the Telegraph section, 1s. 6d. per packet.
,, Telegraph, true stock, 1s. per packet.
,, Duke of Edinburgh (Daniels), 1s. per packet.
SOLANUM CAPSICASTRUM, hybrids, from plants selected from the three best stocks in Covent Garden, 6d. and 1s. per packet.
LOBELIA PUMILA MAGNIFICA, 1s. per packet.
CELOSIA PYRAMIDALIS, saved from Mr. R. S. Yates' fine strain, 6d. and 1s. per packet.
LOBELIA PUMILA MAGNIFICA, seedling plants, 5s. per 100; plants from cuttings, 12s. 6d. per 100.

All orders prepaid.

J. BESTER, White Hart Lane, Tottenham, N.

Special Offer.

G. FARNSWORTH has to offer large quantities of the following, at per 1000; also other NURSERY STOCK, at low prices, which may be had on application at the Nurseries, Matlock:—ASH, Mountain, 3 to 5 feet, 17s. 6d. ALDER, 3 to 5 feet, 30s. CHESTNUT, Horse, 6 to 8 feet, 80s. FIR, Austrian, 20 to 30 inches, 90s. HOLLY, Common, 12 to 18 inches, 180s. LARCH, 12 to 20 inches, 15s.; 1½ to 2½ feet, 25s. LIME LAYERS, 2-yr., Red-twigged, 2 to 4 feet, 80s. PRIVET, 1½ to 2½ feet, 12s.; 2 to 3½ feet, 15s.; 3 to 4½ feet, 17s. 6d. RHODODENDRON, Hybrid and Pontica mixed, 3-yr. seedling, fine, 5s.; extra, transplanted, 6 to 10 inches, 60s.; 8 to 12 inches, 80s.; 12 to 18 inches, bushy, 140s.

Strong Ivies and Lobelia speciosa.

W. NORTH offers strong IVIES, from open ground, 4 to 5 to 6 feet, at 25s. per 100; 500 and upwards, at 20s. per 100. A sample dozen of the above sent for 4s.

Strong IVIES, in pots, from 50s. to 60s. per 100.

Variegated and Fancy Green IVIES, in twelve varieties, at 9s. per dozen.

LOBELIA SPECIOSA (true, in 60's), 3s. per dozen.

Terms cash. Post-office Orders payable at High Road, Lee, Manor Lane Nursery, Lee, S.E.

Vines, Vines.

JAS. GARAWAY AND CO. offer the undermentioned VINES, Fruiting Canes, 48s. per dozen.

Chasselas Musque	Muscat Hamburgh
Duchess of Buccleuch	Muscat Muscadine
Early Malingre	Royal Ascot
Esperione	Royal Vineyard
Grove End Sweetwater	

West's St. Peters.

JAS. GARAWAY AND CO., Durdham Down Nurseries, Clifton, Bristol.

New and Genuine Seeds Only.

Now ready, gratis and post-free,

BRUNNING AND CO.'S New Illustrated and DESCRIPTIVE CATALOGUE of the above for the present season, containing a selection of the choicest novelties, together with the most approved older varieties, profusely Illustrated, and contains a splendid Coloured Plate representing a group of choice Hybrid Gladioli, for the growth of which their Nurseries are noted. Forwarded post-free to all applicants.

ISAAC BRUNNING AND CO., The Yarmouth Seed Establishment, 1, Market Place, Great Yarmouth.

AMERICAN POTATOS

RUBY (new), | SNOWFLAKE, | EXTRA EARLY VERMONT,
ALPHA, | EUREKA, | BROWNELL'S BEAUTY.

We take pleasure in informing our Correspondents that we have secured a fine crop of the above, in a sound and healthy condition. They were grown in a section of the country where the Colorado Beetle has never appeared, so that no danger need be apprehended from importing them. We are prepared to supply the Trade with the genuine varieties, also all others previously introduced, upon the most reasonable terms.

Particular attention is invited to a New and Popular Seedling from Mr. PRINGLE, the well-known raiser of the Alpha and Snowflake, which was exhibited at the International Potato Exhibition as Pringle's No. 10, and favourably noticed. It is described by the raiser as follows :—

RUBY.

A new red kidney-shaped Potato of excellent promise, raised in 1871 from the "Early Rose" hybridised with the "White Peachblow." Its hybrid origin is quite apparent. The shape is oblong, slightly flattened, resembling that of the "Early Rose." In its colouring the red of the latter variety is deepened by the carmine which shows in the blotches of the "White Peachblow." The eyes, which are but slightly sunken, are carmine, like those of this variety. The flesh possesses much the character of the "Peachblows," being white, fine-grained, firm, and of excellent flavour. The tubers are of approved medium size, and are clustered close about the foot of the stalks. These are short and stout, with foliage broad, thick, and of a very dark green colour. The time of maturity is the same as that of the "Early Rose," and it is equally productive. To those who prefer a red-skin Potato we can confidently recommend this excellent variety.

Under the New International Postal Law One Pound of the "Ruby" will be sent to any address in Europe, post paid, upon receipt of 4s. English currency, or its equivalent.

Remittances can be made in Post Office Stamps or by Postal Money Order on New York or London, made payable to order of B. K. BLISS & SONS.

PRINGLE'S HYBRIDISED POTATO SEED.

The extraordinary success which has attended Mr. Pringle in his attempts to improve this valuable esculent—which has resulted in the production of the "Snowflake" and "Alpha," and last, though not least, the "Ruby"—has encouraged him to still greater efforts in his favourite pursuit of hybridisation, and we have now the pleasure of offering a very choice strain of seed saved by him, which is the product of numerous hybridisations, variously operated with every care during the past season, between the abovenamed and many of the best new and old varieties in cultivation, both English and American, and includes every strain, which Mr. Pringle will himself sow the coming spring.

Packets of twenty-five seeds, 2s. 6d.; five packets, 10s.

Our Illustrated Descriptive POTATO CATALOGUE, 32 pages, containing a List of 200 varieties, with Report of Committee and Culture of successful Competitors in 1875, will be mailed free and post paid to all applicants.

A liberal discount to the Trade.

Address: B. K. BLISS & SONS,
SEED MERCHANTS, 34, BARCLAY STREET, NEW YORK, U.S.A.

TO THE TRADE.

HUGH LOW & CO.

HAVE TO OFFER IN QUANTITY

DWARF MAIDEN PEACHES, NECTARINES,
AND MOOR PARK APRICOTS;
DWARF-TRAINED TREES OF THE SAME.
ALSO A FEW THOUSAND GOOD BRUSSELS PLUM STOCKS.
Prices on application.

CLAPTON NURSERY, LONDON, E.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, February 21, at half-past 12 o'Clock precisely, a Collection of

ESTABLISHED ORCHIDS suitable for COOL HOUSES,
including the following rare kinds :—

HELCIA SANGUINOLENTA,
MASDEVALLIA POLYSTICTA,
ODONTOGLOSSUM HALLII,
MAXILLARIA VENUSTA,
ODONTOGLOSSUM ANGUSTATUM,
ONCIDIUM SUPERBIENS,
ODONTOGLOSSUM ANDERSONIANUM,
MASDEVALLIA HARRYANA,
ODONTOGLOSSUM ELANDUM,
ODONTOGLOSSUM SCEPTRUM,
ONCIDIUM MACRANTHUM,
ODONTOGLOSSUM ROEZLII,
CATTLEYA ACLANDIÆ,
ODONTOGLOSSUM VEXILLARIUM,
DENDROBIUM KINGIANUM,
ODONTOGLOSSUM ODORATUM,
ODONTOGLOSSUM CIRRHOSUM,
ONCIDIUM MARSHALLIANUM,

And various other species. Also,

One Hundred Growing Plants of Odontoglossum crispum (Alexandræ);

a large importation, just received in good condition, of SACCOLABIUM BLUMEI MAJUS; and a quantity of good plants of

ODONTOGLOSSUM CIRRHOSUM,
ONCIDIUM PENTADACTYLON,
AERIDES MACULOSUM,
ODONTOGLOSSUM HALLII,
DENDROBIUM BARBATULUM,
SACCOLABIUM CURVIFOLIUM,

And various others.

On view the morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

Seeds, Seeds, Seeds.

THE HEATHERSIDE NURSERIES COMPANY'S noted GUINEA COLLECTION of VEGETABLE SEEDS.

Packing and Carriage Free, contains as under :—

Peas in variety	7 pts.	Cucumber	1 pkt.
Beans	3 pts.	Endive	1 ,,
French Beans	1 pt.	Leek	1 ,,
Scarlet Runners	1 ,,	Lettuce	3 ,,
Beet	1 pkt.	Mustard	4 oz.
Borecole	3 ,,	Melon	1 pkt.
Brussels Sprouts	1 ,,	Onion	2 oz.
Albert Sprouts	1 ,,	Parsley	1 pkt.
Broccoli	1 ,,	Parsnip	1 oz.
Cabbage	1 ,,	Radish	6 ,,
Savoy	1 ,,	Spinach	1 pkt.
Carrot	3 oz.	Turnip	3 oz.
Capsicum	1 pkt.	Tomato	1 pkt.
Cauliflower	1 ,,	Vegetable Marrow	1 ,,
Celery	1 ,,	Sage	1 ,,
Cress	1 oz.	Thyme	1 ,,

Address, 23, Queen Victoria Street, London, E.C.

Trees and Shrubs on Sale.—Special Offer.

BENJAMIN WHITHAM,

The Nurseries, Reddish, near Stockport,

Has a large quantity of the following, fine healthy plants—must be cleared, the land being required for other purposes :—

FRUIT TREES.

APPLES, Pyramids, 3-yr., heads, 3 to 4 feet, 6s. per dozen, 40s. per 100.
,, half standards, stems 2 to 4 feet, 4 to 5 feet high, 7s. per dozen, 50s. per 100; 5 to 6 ft., 8s. per doz., 60s. per 100.
CURRANTS, Black, fine, 10s. per 100.
,, Red, fine, 10s. per 100.
,, White, extra fine, 10s. per 100.
STRAWBERRIES, Yates' Seedling, very fine sort, abundant bearers, extra, 3s. per 100.
GOOSEBERRIES, large show and dessert sorts, extra strong, 15s. to 20s. per 100.

FOREST TREES.

AREA THEOPHRASTA (Service tree), grafted sorts, 3 to 4 feet, 5s. per dozen, 30s. per 100; 4 to 5 feet, 6s. per dozen, 40s. per 100; 5 to 6 feet, 8s. per dozen, 60s. per 100; 6 to 8 feet, 9s. per dozen, 70s. per 100.
BEECH, all fine, stout, extra transplanted, 1½ to 2 feet, 3s. 6d. per 100, 25s. per 1000; 2 to 3 feet, 4s. per 100, 33s. per 1000; 3 to 4 feet, 6s. per 100, 40s. per 1000; 4 to 5 feet, 10s. per 100, 65s. per 1000; 5 to 6 feet, 20s. per 100; 6 to 8 feet, 30s. per 100; 8 to 10 feet, 50s. per 100.
CHESTNUT, Horse, 2 to 3 feet, 5s. per 100; 3 to 4 feet, 6s. per 100; 4 to 5 feet, 7s. per 100; 5 to 6 feet, 10s. per 100; 6 to 8 feet, 20s. per 100.
,, ,, fine single specimens for avenues, very stout, straight stems, 12s. per dozen.
,, ,, Scarlet, 5 to 6 feet, 10s. per dozen; 6 to 8 feet, 12s. per dozen.
LIME, fine stock, 2 to 3 feet, 7s. per 100; 3 to 4 feet, 10s. per 100; 4 to 5 feet, 15s. per 100; 5 to 6 feet, 20s. per 100; 6 to 8 feet, 30s. per 100; 8 to 10 feet, 70s. per 100.
PINUS AUSTRIACA, 1½ to 2 feet, 7s. per 100; 2 to 3 feet, 12s. per 100; 3 to 4 feet, 25s. per 100.
POPLAR, Lombardy, 2 to 3 feet, 4s. per 100, 35s. per 1000; 3 to 4 feet, 5s. per 100, 40s. per 1000; 4 to 6 feet, 8s. per 100, 75s. per 1000; 6 to 8 feet, 15s. per 100; 8 to 10 feet, 25s. per 100
,, Ontario, 4 to 6 feet, 8s. per 100; 6 to 8 feet, 12s. per 100; 8 to 10 feet, 25s. per 100.
,, Balsam, 4 to 6 feet, 10s. per 100; 6 to 8 feet, 20s. per 100.
PRIVET, Evergreen, 1½ to 2 feet, 15s. per 1000; 2 to 3 feet, 20s. per 1000; 3 to 4 feet, 25s. per 1000; 4 to 5 feet, 30s. per 1000.
SYCAMORE, 2 to 3 feet, 2s. 6d. per 100, 20s. per 1000; 3 to 4 feet, 3s. per 100, 25s. per 1000; 4 to 5 feet, 4s. per 100, 30s. per 1000; 5 to 6 feet, 6s. per 100, 50s. per 1000.
,, fine, 6 to 8 feet, 18s. per 100; extra strong, 8 to 10 feet, 45s. per 100.

EVERGREENS, ORNAMENTAL TREES AND SHRUBS.

AZALEA PONTICA, bedded, 4 to 6 inches, 6s. per 100, 50s. per 1000.
,, ,, bushy, transplanted, 1½ to 2 feet, 6s. per dozen, 45s. per 100; 2 to 2½ feet, 9s. per dozen, 65s. per 100.
BOX, Green, 1 to 1½ foot, 3s. per dozen, 16s. per 100.
,, 1½ to 2 feet, 4s. per dozen, 25s. per 100; 2 to 3 feet, 4s. 6d. per dozen, 30s. per 100.
LAUREL, Portugal, 1½ to 2 feet, 4s. per dozen, 30s. per 100.
,, ,, very fine, 2 to 3 feet, 8s. per dozen, 60s. per 100.
,, ,, extra fine round bushes, 3 to 4 feet diameter, 2½ to 3 feet, 12s. per dozen, 90s. per 100.
LEDUM LATIFOLIUM, bedded, 3 to 6 inches, 50s. per 1000; 12 to 18 inches, 6s. per dozen, 40s. per 100.
MAHONIA (Berberis) AQUIFOLIA, 1½ to 2 feet, 10s. per 100; 2 to 3 feet, 15s. per 100.
RHODODENDRON, best hybrid, bedded, 3 to 6 inches, 8s. per 100, 60s. per 1000; 6 to 9 inches, 10s. per 100, 90s. per 1000; 9 to 12 inches, 14s. per 100.
,, Ponticum, fine dwarf, round bushes, 1 to 1½ foot, 25s. per 100, £10 per 1000; 1½ to 2 feet, 5s. per dozen, 30s. per 100; 2 to 3 feet diameter, 2 to 2½ feet, 6s. per dozen, 45s. per 100; 3 to 4 feet diameter, 3 to 4 feet, 18s. per dozen, 150s. per 100.
,, Cunningham's White, very bushy, 1¼ to 1½ foot, 50s. per 100; 1½ to 2 feet, 65s. per 100.
,, best named sorts, bushy, 18s. to 30s. per dozen.
THORN, new double scarlet (Paul's), 4 to 5 feet, 5s. per dozen, 35s. per 100; 5 to 6 feet, 6s. per dozen, 40s. per 100; 6 to 8 feet, 7s. per dozen, 55s. per 100.
,, Double Pink, 4 to 5 feet, 5s. per dozen, 35s. per 100; 5 to 6 feet, 6s. per dozen, 40s. per 100; 6 to 8 feet, 7s. per dozen, 55s. per 100.
,, ,, White, 4 to 5 feet, 5s. per dozen, 35s. per 100; 5 to 6 feet, 6s. per dozen, 40s. per 100; 6 to 8 feet, 7s. per dozen, 55s. per 100.
,, Single Scarlet, 4 to 5 feet, 5s. per dozen, 35s. per 100; 5 to 6 feet, 6s. per dozen, 40s. per 100; 6 to 8 feet, 7s. per dozen, 55s. per 100.
Cockspur, 4 to 5 feet, 5s. per dozen, 35s. per 100; 5 to 6 feet, 6s. per dozen, 40s. per 100; 6 to 8 feet, 7s. per dozen, 55s. per 100.
YEW, English, fine, large stock, 9 to 12 inches, 12s. per 100; 1¼ to 1½ foot, 20s. per 100; 1 to 2 feet, 5s. per dozen, 25s. per 100; 2 to 3 feet, 7s. per dozen, 45s. per 100; 3 to 4 feet, 12s. per dozen, 80s. per 100.
,, Irish, 2 to 3 feet, 8s. per dozen; 3 to 4 feet, 12s. per dozen.

The Earliest and Best Round Pea is

SUTTON'S EMERALD GEM. "Your 'Emerald Gem' is decidedly the earliest and best Pea I have grown yet, both in flavour and crop."—JOHN GIBBONS, *Gr. to the* Right Hon. B. Disraeli.
Per quart, 2*s.* 6*d.*
SUTTON AND SONS, The Queen's Seedsmen, Reading.

THE NEW PLANT and BULB COMPANY beg to call attention to their SPECIAL LIST, just published, containing New Flowering Shrubs, New Fruits, New Yuccas, Sweet-scented Amaryllis, New Ferns, six New Lilies, Seeds of New Plants, Lilium auratum, &c., all at extremely low prices. Post-free on application.
Lion Walk, Colchester.

100,000 Vesuvius.—Special Offer.

WILLIAM BADMAN offers good Autumn-struck Plants, from single pots, 10*s.* per 100, or 85*s.* per 1000; from store pots, 8*s.* per 100, or 75*s.* per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend.

To the Trade and Large Growers.

COMPTON'S SURPRISE.—A few tons of this celebrated Potato for sale, just imported, price £13 per ton, or 15*s.* per cwt. Address—
S., 14, Oxford Street, Reading.

Covert Plants.

PETER S. ROBERTSON AND CO., NURSERYMEN, Edinburgh, offer, at cheap rates, BLACKTHORN, ENGLISH MAPLE, BROOM, FURZE, 1 to 2 feet high.

SPECIAL OFFER of SEEDLING RHODODENDRONS, 2-yr. and 3-yr., £7 10*s.* and £12 10*s.* per 100,000; 4-yr. and 5 yr., 7*s.* 6*d.* and 10*s.* per 1000.
JOSEPH SMITH, Jun., Moor Edge Nurseries, Tansley, near Matlock, Derbyshire.

To the Trade.

POTATOS.—Paterson's Victoria, Queen, Early Vermonts, Early Rose, Hundredfold Fluke, Paterson's Seedling Flukes, King of the Earlies, Snowflake, Red-skin Flour Balls, Robson's Challenge, Brownell's Beauty, Princess of Lorne, at very low prices, by the ton or cwt. Apply to
COCKS BROS., Monk's Hall, Gosberton, Spalding.

The Best Beet is

SUTTON'S IMPROVED DARK RED. "Your Improved Dark Red Beet is a first-rate sort, with dwarf crimson-coloured leaves. Excellent for bedding."—WM. PATERSON, *Gr. to* Her Majesty the Queen, Balmoral.
Per ounce, 1*s.* 6*d.*
SUTTON AND SONS, The Queen's Seedsmen, Reading.

RICHARD WALKER can supply, for cash, White Spanish ONION SEED, all new and genuine, at 1*s.* 8*d.* per lb. SEAKALE, for forcing, 10*s.* per 100; for planting out, 4*s.* per 100. Best and earliest covering RHUBARB ROOTS in cultivation, for forcing, 6*s.* per dozen; for planting out, 1*s.* per dozen. East Ham and Enfield Market CABBAGE PLANTS, 3*s.* per 1000.
Market Gardens, Biggleswade, Beds.

Grape Vines.

THOMAS METHVEN AND SONS have at present a large and very fine Stock of GRAPE VINES, thoroughly ripened, which they beg to offer at the following prices:—First size, 7*s.* 6*d.*; second size, 5*s.* each.
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Leith Walk Nurseries, Edinburgh.

A BARGAIN is offered in a lot of very extra strong BLACK HAMBURGH VINES, which must, on account of alterations, be moved out of a border in which they were planted to be fruited this year. They have never borne a berry, and would ripen 20 lb. to 30 lb. of fruit well. Strong Canes, with splendid healthy roots, 10*s.* 6*d.* each.
L. WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

ROBERT NEAL, JUN., and GEORGE NEAL, NURSERYMEN, Wandsworth Common, S.W., beg respectfully to call the attention of Gentlemen and Others who are planting this Spring to their large and varied stock of HARDY SHRUBS, FRUIT, FOREST, and ORNAMENTAL TREES, &c., which are now in fine condition for transplanting. An early inspection invited.
CATALOGUES may be had on application.

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GERANIUM VESUVIUS, autumn-struck, beautiful stuff, 10*s.* per 100.
CALCEOLARIA AUREA FLORIBUNDA and GOLDEN GEM, autumn-struck, clean, healthy, and vigorous, 5*s.* per 100, 40*s.* per 1000, package free. "Cash," Post-office Order on Chester.
FIELD BROTHERS, Tarvin Road Nursery, Chester.

E. G. HENDERSON AND SON'S NEW SEED CATALOGUE contains many Novelties. See List quoted in this Paper, February 12, p. 217
LUCY GRIEVE PEAR, a delicious fruit; First-class Certificate. See description in this Catalogue.
VINES, splendid Canes, 35 *6d* each. See the Catalogue.
The Wellington Nursery, St. John's Wood, London, N.W

FOR the FARM or GARDEN.—Superior Bedfordshire-grown CABBAGE PLANTS—Early Enfield, York, and Nonpareil, at 3*s.* per 1000; Robinson's Champion Drumheads, at 4*s.* per 1000; Red Dutch Pickling, at 5*s.* per 1000. Early Long-pod BEANS, at 8*s.* 6*d.* per bushel; common Windsors at 16*s.* per bushel. Forcing and planting ASPARAGUS PLANTS, at 2*s.* 6*d.* to 7*s.* 6*d.* per 100. Double Scarlet DAISIES, 2*s.* 6*d.* per 100; splendid large Crown Daisies, 5*s.* per 100. Terms, cash with orders. SEED POTATOS and all other SEEDS of best quality at lowest prices. CATALOGUES, &c., on application to
FREDK. GEE, Seed Grower, &c., Biggleswade, Beds.

WORCESTER PEARMAIN APPLE.

Awarded a First-class Certificate by the Royal Horticultural Society, October 6, 1875.

Fruit 2¾ inches wide, and same in height, conical; skin smooth, brilliant red, with minute fawn-coloured dots; flesh very tender, crisp, juicy, and sweet, with a very pleasant flavour, perhaps the most valuable of all for market. The tree is as productive as Lord Suffield Apple, and one of the handsomest fruits in cultivation. Ripe end of August, and will keep till Christmas.

Maiden Trees, 10s. 6d. each; Pyramid or Trained Trees, 21s. each. Coloured Plates, 6d. each.

RED HAWTHORNDEN APPLE.—Dr. Hogg describes this as large, oblate, and angular; skin smooth, greenish yellow, with a red blush next the sun; flesh white, tender and juicy, with a sprightly and agreeable acidity. A very early and valuable culinary Apple; ripe August and September. Maiden trees, 7*s.* 6*d.* each; Pyramid or trained trees, 10*s.* 6*d.*

YORKSHIRE BEAUTY APPLE.—Dr. Hogg, in his *Manual*, says this fruit is 3½ inches wide and 3 inches high, roundish, flattened, and angular; skin bright yellow, with a bright red blush on the sunny side; flesh tender and juicy, with an agreeable acidity. A first-rate culinary Apple for August and September; the great size and excellent quality ought to commend it as a good orchard fruit for the market. Maiden trees, 5*s.* each; Pyramid or trained trees, 7*s.* 6*d.*

NEW GOLDEN LABURNUM.—Unquestionably the finest hardy golden-leaved tree known, of immense value for park and garden scenery; it will take a foremost position among pictorial and garden trees; the foliage is a brighter golden-yellow than the flower of the ordinary Laburnum. First-class Certificate awarded by the Royal Horticultural Society, August 4, 1875. Price 10*s.* 6*d.* each; Standard and extra strong trees, 21*s.* Coloured plates, 6*d.* each.

OTHERA JAPONICA.—A new and beautiful evergreen shrub. One of the most distinguished Japanese travellers says this is perhaps the prettiest evergreen they have in Japan; it grows about 20 feet high, has dark green leaves and a profusion of bright red fruit; it is very effective and perfectly hardy. Price 10*s.* 6*d.* each; extra strong, 21*s.*

RICHARD SMITH,
NURSERYMAN and SEED MERCHANT, WORCESTER.

SEEDS OF SUPERIOR QUALITY.

WM. PAUL & SON'S
ILLUSTRATED CATALOGUE OF SELECT VEGETABLE AND FLOWER SEEDS, &c.,

Is now ready, and will be forwarded, post free, on application.

Many sorts are home-grown, and all are selected with the utmost care from the most celebrated Stocks at home and abroad, in order to secure for their Customers the
BEST QUALITY THAT CAN BE OBTAINED.

IMPORTANT: Observe the Christian Name,

WM. PAUL & SON,

PAUL'S NURSERIES AND SEED WAREHOUSE, WALTHAM CROSS,
LONDON, N.

TWELVE ACRES OF ROSES,

Standards and Dwarfs, all the popular sorts; 80,000 choicest Tea-scented and Noisette Roses, in pots. Extra strong Hybrid Perpetual Roses, in pots for immediate forcing.
Climbing Roses in great variety. *See Descriptive Price List.*

FIFTY ACRES OF FRUIT TREES.

Standard and Dwarf-trained PEACHES, NECTARINES, APRICOTS, PLUMS, CHERRIES, PEARS and APPLES, very fine trees for walls.
Standard, Pyramid, Dwarf, Bush, and Cordon APPLES, PEARS, PLUMS, and CHERRIES.

VINES, Planting Canes, 3*s.* 6*d.* to 5*s.* each; Extra Strong Fruiting Canes, 7*s.* 6*d.* to 10*s.* 6*d.* each.

All the above of superior quality, perfect in form, roots, and health, and true to name.
See Descriptive Price List.

RICHARD SMITH,
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B. S. WILLIAMS'

CHOICE

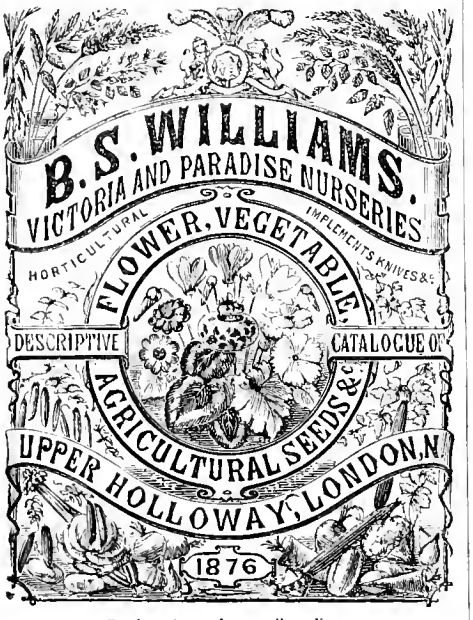
FLOWER AND VEGETABLE

Seeds for 1876.

	Per Packet — s. d
BEANS, Williams' Early Prolific Dwarf French, in sealed half-pints	1 6
BRUSSELS SPROUTS, Welch's Giant, one of the finest in cultivation	1 0
CUCUMBER, Tender and True	2 6
" Osmaston Manor (new), one of the Finest Varieties, either for Summer or Winter use; 26 to 32 inches long, very prolific	2 6
MELON, Osmaston Manor Hybrid (new), a splendid Green-fleshed Variety, beautifully netted, globular in form, and of delicious flavour	2 6
ONION, Williams' Magnum Bonum, the heaviest cropping and longest keeping Onion in cultivation	1 6
PEA, Williams' Emperor of the Marrows .. per quart,	2 0

Illustrated Seed Catalogue for 1876

NOW READY.



Gratis and post-free to all applicants.

CHOICE FLOWER SEEDS.

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BALSAM, Williams' Superb Strain.. .. 2s. 6d. and	1 6
BEGONIA FROEBELII (new).—This new and distinct species will prove one of the finest scarlet bedding plants in cultivation	2 6
CYCLAMEN PERSICUM GIGANTEUM.—This is a great improvement on the old type, having very broad, beautifully-mottled coriaceous leaves; the flowers are thrown well above the foliage, each flower measuring from 2 to 2½ inches in length; pure white, with a fine bold violet-purple eye	5 0
CYCLAMEN PERSICUM, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1 6
CELOSIA PYRAMIDALIS PLUMOSA	1 6
CALCEOLARIA, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1 6
CINERARIA, Weatherill's Extra Choice Strain, 5s., 3s. 6d., 2s. 6d., and	1 6
GLOXINIA, Finest Drooping Varieties	1 6
" Finest Erect Varieties	1 6
PRIMULA, Williams' Superb Strain, Red, White, or Mixed 5s., 3s. 6d., 2s. 6d., and	1 6
PYRETHRUM GOLDEN GEM..	1 0
SOLANUM, Williams' Improved Hybrids	1 6
STOCK, Williams' Improved Giant Scarlet Brompton	1 6
WALLFLOWER, Harbinger, Autumn and Winter flowering	1 0

Packets of Flower Seeds, excepting heavy kinds, Free by Post.

FREE DELIVERY.—All Orders for Seeds, amounting to £1 and upwards, will be delivered, Free of Carriage, to any Railway Station in ENGLAND; and all Orders of £2 or more in value, to any Railway Station in SCOTLAND or WALES, and any Steam Port in IRELAND.

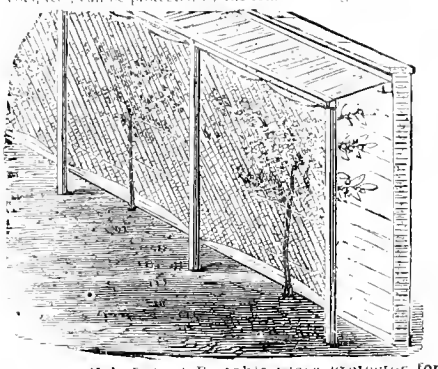
VICTORIA AND PARADISE NURSERIES,
Upper Holloway, London, N.

By Her Majesty's *Royal Letters Patent*

RENDLE'S

PATENT ORCHARD HOUSES AND FRUIT TREE PROTECTORS.

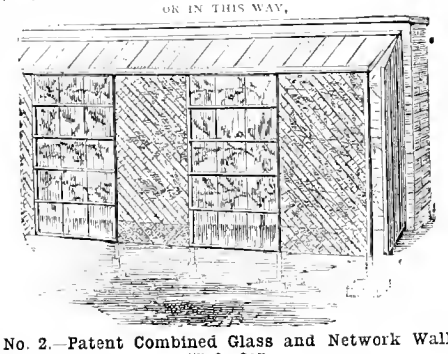
The tender and delicate Blossoms of Peaches, Nectarines, Apricots, &c., can be protected by the four following methods:



No. 1.—Rendle's Patent Portable Glass Protector for Walls.

Patent Glass Copings, 18 inches wide, 3s.; 24 inches wide, 4s.; 30 inches wide, 5s. per running foot.

OR IN THIS WAY,



No. 2.—Patent Combined Glass and Network Wall Protector.

This Combined Protector can be supplied at 10s., 12s., or 14s. per foot run. Highly recommended by Mr. Wm. Ingram, Belvoir Castle.

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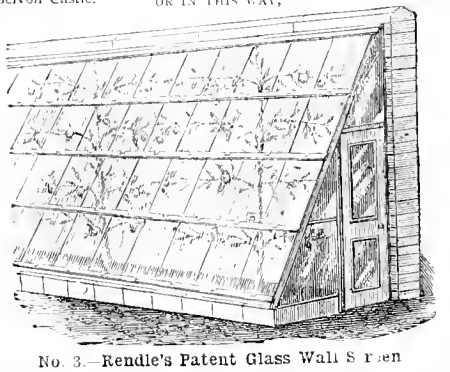

No. 3.—Rendle's Patent Glass Wall Screen

These Screens can be supplied at 17s., 18s., or 20s. per running foot, according to the height of the wall and the width of the border.

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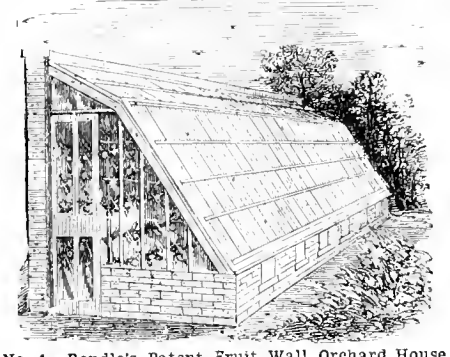

No. 4.—Rendle's Patent Fruit Wall Orchard House.

These Houses, for converting existing Fruit Walls into Orchard Houses, can be supplied at 20s., 24s., 26s., 30s., to 34s. per running foot, according to the height of the wall or width of the border.

Illustrated CATALOGUES and BOOK of DESIGNS can be obtained from the Patentee and Inventor,

Mr. WILLIAM EDGCUMBE RENDLE,
3, WESTMINSTER CHAMBERS, VICTORIA STREET, LONDON, S.W.

THE ROYAL NORFOLK SEED ESTABLISHMENT

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The most beautiful Seed Catalogue ever issued is

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Containing 100 pages of beautifully illustrated Letterpress and Original Articles for the successful Management of the Kitchen and Flower Garden throughout the year. Also, two superbly finished coloured Plates.

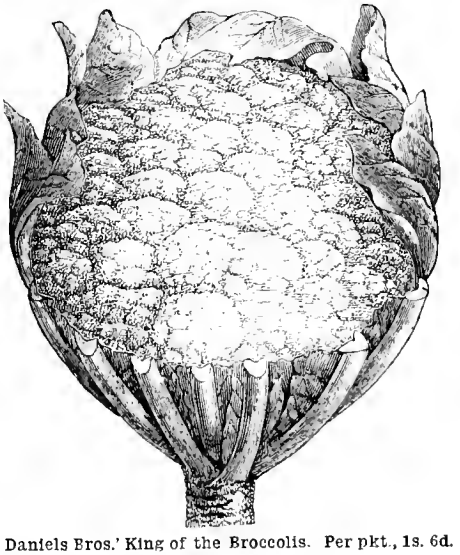
Universally admitted to be the Catalogue of the Season.

Price 1s.

Gratis and post-free to all intending Purchasers.

The finest late Broccoli in cultivation is

Daniels Bros.' King of the Broccolis.



Daniels Bros.' King of the Broccolis. Per pkt., 1s. 6d.

The finest Cucumber grown is

Daniels Bros.' Duke of Edinburgh.

A magnificent variety, growing rapidly to the length of 30 to 36 inches, and of the most beautiful proportions and quality.

Per packet, 2s. 6d.

DANIELS BROS.

Seed Growers

NORWICH.

THE BEST NEW POTATO

PORTER'S EXCELSIOR,

NOW BEING SENT OUT BY

Carter's

To whom the Entire Stock has been consigned by the Raiser.

Emphatically the finest Exhibition Potato in Cultivation.

Tubers large, regular, and perfect in outline. The skin of a pale straw colour. Flesh white and of fine flavour.

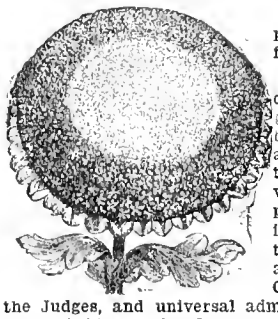
Awarded the 1st Prize at the Great Potato Show, Alexandra Palace, as

The best Dish of Potatos in the Exhibition.

Per lb. 1*s.* 6*d.*; *7 lb.* 8*s.* 6*d.*; 14 *lb.* 12*s.* 6*d.*

BETTERIDGE'S
GRAND
EXHIBITION PRIZE ASTER.

For full description see p. 200, *Gardeners' Chronicle*, February 12, 1876.



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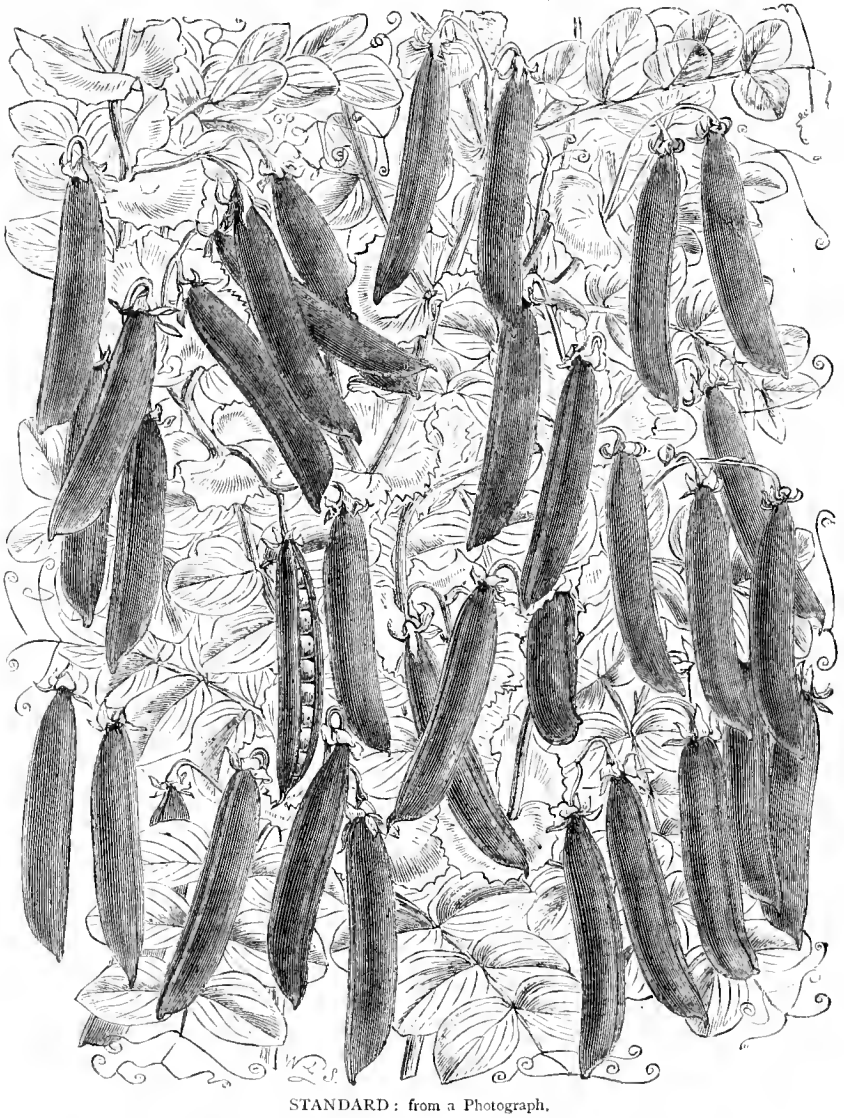

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SATURDAY, FEBRUARY 19, 1876.

FRUIT AS FOOD.

THE nation will be driven to this perforce. A variety of influences are at work, all pointing in the same direction. Among the more potent of these are the cost of meat, the unprofitableness of Wheat growing at home, and the growing taste and for enlarged consumption of fruit by all classes of the population. The probabilities are that meat will rise still higher in price. The ever-recurring outbreak of disease, the restrictions on imports and the free movement of live stock, and above all, increased consumption, are sure indications that the prices of the future will range higher than those of the past, or than those of the present. It is almost certain, in fact, that meat will never again be cheap in England. Were all disease to vanish, and every flock and herd continue in perfect health for the future—a most improbable supposition—even the increased consumption alone would cause the prices of meat to rule high. The fact, then, is something like a struggle to obtain meat. It is the modern bone of contention in our markets; buyers and sellers haggle over carcases more than over gold. Meat is the driving force of severe competition and vigorous trade; for every prime joint there are two or more purchasers, and while this brisk competition continues—and it must continue as population increases and wealth grows—cheap meat will continue a dream of the future, but never a present reality in England. It is wise and politic to face this fact, and to act accordingly. One is correlative to the first, though that may not be obvious at first sight.

Wheat growing in England is almost sure to decline rapidly under lower prices. The price of Wheat must rule low, for the best land of the world, for which little or no rent is paid, furnishes our supply. Of course, in lieu of rent there is the cost of transit, but the latter is low enough to make the import of Wheat profitable to those that pay it, and enables foreign Wheat to compete successfully against home-grown so as to insure cheap bread for all classes of the population. This, of course, is an immense boon, but it affects the home-growers of Wheat in a special manner, and, in fact, swallows up their legitimate profits; if so, of course less Wheat will be grown in England, and, in fact, the tide of Wheat is already receding fast, this year's home supplies falling far short of last, and the area under Wheat in 1876 will probably be the narrowest ever grown in this country. The floods have contributed to the result, and so also have the advanced price of Oats and Barley relatively to Wheat; the latter has, in fact, ceased to be the most valuable grown crop, and that fact alone will limit the area of its cultivation and the amount of the home yield, for of course whatever grain or other crop pays best will ultimately be most widely grown. Prices, however, are but poor indices to profits, else we should see our best Wheat lands widely laid down to grass, for meat at 10*d.* or 1*s.* a pound must surely pay better than Wheat at present prices. But the expense of production must be assessed, and that has been carefully done: the meat-grower seriously affirms that his profits on the tedious and risky manufacture of meat is naught but the residuum in the form of manure. It seems that the risks are so great, and the profits so small and precarious, in meat-making, that it is doubtful if much of the land now employed in Wheat growing will be devoted to the manufacture of meat.

What, then, shall be done with it? Our answer is ready: devote at least part of it to the growth of superior fruit. The prospects of profits here are brighter than in the meat or corn line. The risk is less, the profit greater, the demand a growing one, and the trade in a young and elastic condition. Every year we are growing more fruit and consuming more. Parallel with our enlarged home production there is an expanding foreign trade in fruit, now amounting to a very large sum of money; and yet the fruit trade may be said to be yet in its infancy, for fruit has hardly yet been looked upon or consumed as food, or a substantial article of diet in this country. When we have advanced so far as to make one meal a day off fruit and bread the consumption of fruit will be multiplied a hundredfold, and our present supply prove inadequate in the same ratio. This is not an over-sanguine estimate, and the effects of the demand for one hundred times more fruit than is now used in England would have a powerful effect upon the cropping of land, the practice of farming, and the price of meat. Were it possible, and it is by a fruit diet, sensibly to lower the price of meat, that would give a further stimulus to fruit culture; for if meat growing is not profitable at present prices it would be less so at lower rates, and fruit might displace roots and grass as well as Wheat, and prove at once the most profitable crop on the farm, as it now is in so many gardens. In fact, with the statements of profits or returns—a very different thing, however—given as ranging as high as £100 per acre, it is surprising that so little fruit is grown.

That the cultivation of fruit is a most profitable industry can readily be proved without having recourse to returns that may seem extreme or sensational. The high price given for land for fruit culture in the neighbourhood of the metropolis and other large towns, and the thriving state of the home fruit trade, notwithstanding the keen competition of foreign countries more favoured by climate, at lower prices of labour or the cost of production, is proof positive that its cultivation on good lands at average agricultural rents must pay extremely well. For railways have, in regard to such perishable matters, almost abolished distance; and fruit sent 100, 200, 400 miles are daily arriving in Covent Garden Market as fresh and fair as those that come up in vans from Ilford or Fulham; in fact, the American fruits that cross the Atlantic, and have perhaps travelled hundreds of miles to or from port, look as fresh and free from blemish as those of home growth. The cost of transit is, of course, considerable, but that would be paid many times over by the difference of rent between metropolitan and rural districts; and no doubt in the future trade of the country fruit trains will be as numerous and as common as our meat, milk, and fish "specials" are now. All this will follow as a matter of course, when fruit takes the place it is entitled to in the feeding of the people.

The various powerful tendencies of modern trade and life seem to point strongly towards a larger consumption of fruit; it is alike the duty and interest of horticulturists to take the initiative in the matter of providing larger numbers of fruit trees of higher quality, and also by furnishing the markets more freely with fruit of better quality. For though the dictum of political economy, that demand begets supply, is an absolute truth, so also with some commodities is the converse, that the supply originates the demand. Fruit is emphatically one of these, and there cannot be a doubt that were more and better fruit offered at cheaper rates, it would readily find purchasers and consumers. The trade in fruit trees is already one of the most important branches of commercial

horticulture, but should necessity be laid upon us to use more fruit as food, and the fashion once set in towards this great innovation and improvement, an enormous demand will be created, that will task the ability and resources of the trade to the uttermost to meet and satisfy. It may, therefore, be wise and prudent to anticipate this demand, so as to be able to guide it into the most useful channels, and satisfy it with the best materials. *D. T. Fish.*

New Garden Plants.

Eria coronaria, *Rchb. f.**

This is a very curious, and if not a grand, decidedly a very pretty and sweet-scented Orchid. The terete stems reach nearly a span in height, and bear two oblong acute leaves of a strong chartaceous texture. The few-flowered raceme is very nice. The Eria blooms are free from wool, and are as large as those of Cœlogyne testacea. They are of pure milk-white colour; the lip has its side laciniæ marked with rich brown streaks, while the disc of the anterior lacinia is golden yellow. The column has a series of longitudinal sepia-brown lines. The plant was discovered in the Khasya Hills, by the late Mr. Gibson, when collecting for His Grace the Duke of Devonshire. My herbarium specimens are from the same spot, both from Dr. Griffith, and from Dr. Hooker and Thomson. Griffith must have found a considerable quantity of it, since I myself obtained ten specimens. And now let me state my reason for calling the plant so very curious when Erias used to be looked at like pariahs by the paying collectors. There is here an instance of mimicry. The plant has the appearance of a Cœlogyne. Dr. Lindley himself at first sight thought it was one, and called it Cœlogyne coronaria. The white flowers with lateral laciniæ of the lip and column striped with sepia-brown (a very unusual colour, much to be found in species of Cœlogyne), and the golden-yellow disc of the anterior laciniæ immediately make one-third of Cœlogyne, and only an accurate investigation breaks down the first impression. I have seen only in three instances garden specimens, and two instances are nearly the same, as will be seen. Just thirteen months ago I obtained it from Herr Hofgärtner Kirchhoff, from the garden of Prince Egon von Furstenberg, at Donaueschingen. My appreciation may have been very enthusiastic, since M. Kirchhoff answered stating it was not difficult to multiply, and sent a nice healthy plant that has just now flowered the second time. M. Kirchhoff had picked up the plant, to my great surprise, at my natal place at Dresden. Just now I have obtained it from Mr. Bull. I wish he may have imported a reasonable stock of it, the more so since the plant proves to be a Christmas flower. *H. G. Rchb. f.*

ROYAL HORTICULTURAL SOCIETY.

Every well-wisher of the Royal Horticultural Society must hail with satisfaction the appointment of a committee of the dissatisfied Fellows to confer with the Council on the present state of affairs. It is the first symptom of a *rapprochement* between the Kensingtonian residents and the great body of the Society. As we all know, the sole bone of contention is the garden at South Kensington. The Kensingtonians, most naturally, wish it kept up, so that they may use it as a privileged recreation ground for themselves and their families; the general body of Fellows care very little about it, and would willingly see it surrendered to the Commissioners. The Kensingtonians, also quite naturally, would like to have the cost of keeping it up and retaining it defrayed out of the general funds of the Society; the general body have latterly begun to demur to this, but still have been unwilling to refuse. But the stern logic of facts now leaves them no option, and the Kensingtonian residents must face the position; not that the Society will not defray the cost, but that it cannot.

It is for them, if they wish the garden retained, to find the means of doing so. No change of Councils could help them here. They had for two years the entire and uncontrolled management of the Society's affairs, and if they could have worked it so as to allow the garden to be maintained out of the Society's funds, it would have been done. As they have proposed or acceded to a Committee of Conference, it may be presumed that they now recognise the fact that, if the gardens are to be maintained, it must be at the cost of those who desire it and specially profit by it. How this is to be done is for their consideration. Were I a resident, the plan that I should like best would be that of yearly house-tickets, purchaseable by Fellows, admitting an unlimited number on all days but show days. The charge for these could be so adjusted yearly as to meet, and no more than meet, the expense of the garden. As it is notorious that were the garden surrendered to the Commissioners it would be thrown more or less open to the public, which would answer all the requirements of the other Fellows, and as it is only the residents who have any object in keeping it as a privileged garden, it is right that they should pay the whole cost of doing so; but I am sure that I express the feeling of the Fellows when I say that no one has any wish to take advantage of the position of the residents to make money of them, or make them pay more than the cost of keeping their own elephant. The other Fellows will be most willing to lend their aid to enable them to procure this (although they themselves do not want it), provided the residents find the means, but it is for the latter to prepare their scheme and make their offer, not for the Council to devise plans for them. They have need of the Society, but the Society has no need of them, if their continuance as Fellows depends upon the Society maintaining the garden; in that case it would save money by their secession. And not only should any proposition come from them, but any that they make should be accompanied by some guarantee or assurance that the means of carrying it out will be provided; such, for example, as a list of residents who have signified their willingness to take house tickets sufficient to protect the Society from serious loss.

Should the residents be unwilling or unable to make some practicable proposition they cannot blame the Council for the surrender of the gardens, which must inevitably follow. The general body of the Fellows have submitted in silence to the curtailment of their privileges this year because they have felt that it was a sort of compulsitor put on them and the residents, equally in order to bring the latter to reason, but they will not stand it long. The Council must choose between restoring them their old rights and losing a large portion more of their Fellows. The majority do not care about the restriction on the privileges of daily access to the garden. That touches only the resident Fellows, and to that the curtailment ought to have been confined. To reduce their privileges on show days did not hurt the residents so much as the horticultural Fellows, inasmuch as the latter were two to one of the former, and cared for the shows, which the others did not (at all events in the same degree). The interference with the privileges on show days seems to me therefore to have been not only an unwise departure from well-established principles of political economy—as bad as a railway raising its fares and diminishing its facilities in the short-sighted hope to make more money, but also an unnecessary act of hostility to the very object that the Council was appointed to promote, viz., the advancement of horticulture; and I cannot doubt that whether the conference succeeds in making an arrangement with the Kensingtonians or not, this oversight—for it can only have been an oversight—will be remedied.

Should it turn out that no such arrangement can be effected, it seems to me that the Council has no alternative but again and at once to have recourse to the Commissioners, tell them that their efforts to carry out the proposed scheme have failed, and surrender the gardens into their hands on the best terms they can get.

It is difficult to see how they could even avail themselves of the Commissioners' guarantee and three years' grace, if the ground on which these were given is knocked from under them. If they have no hope or expectation of improved times, what is the use of tiding over? If they have, that is another thing, and they should let the Fellows know it. But the cards are on the table, and we know that they have not. If they hesitate to take the plunge, let us push them in, and if no one else likes to do so, I shall be prepared to move at next meeting, that if no arrangement can be come to with the resident Fellows, whereby the cost of keeping up the garden at South Kensington shall be borne by them, the meeting request the Council to surrender the lease to the Commissioners on the best terms they can get. *Andrew Murray.*

P.S. I was unavoidably prevented attending last meeting, or I should then have given formal notice to the above effect.

PEACH FORCING.

The able article from your correspondent, Mr. Hinds, Otterpool Gardens, Liverpool, is to a great extent one of the right sort, and not likely to mislead the merest novice, besides giving the practical experience of other successful cultivators of the Peach. As he remarks, at this particular season success or failure is being watched with eagle eyes, and, as he justly observes, any neglect during the previous season will with difficulty be remedied now. It may be that I may somewhat differ from your correspondent in some of the points of cultivation alluded to, but as I have had both success and failure in forcing the Peach I intend giving them for what they are worth, for the benefit of our young gardeners, my old friends can please themselves whether they spare time to read them or not.

Suppose I begin my remarks with what I may call two total failures in fruiting the Peach under my own management. In order to divide the two failures, one case was in the early Peach-house at Worksop Manor; and at the same place, in a late house, with scarcely an exception, the whole house was a total failure. Referring to the failure in the early Peach-house—I may as well state that I undertook the charge of Worksop Manor gardens early in the month of July, 1864, and whatever fruit might have been in the early Peach-house it was all pulled before I entered the gardens. The house contained four trees—one Nectarine and three Peach. Judging from the appearance of the trees the ripeness of the wood was everything that could be expected. I could observe no trace of red-spider, but still the foliage had a yellow cast, which I felt jealous of so soon in the season; but under the circumstances I am at a loss even now to show cause of failure during the following forcing season. The one Nectarine tree and two of the Peach trees bore heavy crops, while the other Peach tree only showed three flowers and ripened one fruit, nothing particular in size. Although the failure in the late house is easier to be accounted for, which seems rather singular, while all our early houses were full of fruit; but in that particular season nearly all orchard-houses and late Peach-houses were a total failure. The trees bloomed very well, but from the defect of sunlight during the month of March the pollen or the fertilising dust remained abortive during the murky weather, while the trees were in full flower, and hence imperfect impregnation and failure. I am not aware of a low temperature in early Peach-houses being a source of failure if the farina or male fertilising dust of the anthers acts properly on the female organ.

In the above case of the late Peach-house, while others were lamenting their failures I thought my crop was secure, as the fruits kept swelling until they came to the size of Peas, and then they began to look thin, and ultimately dropt gradually upon the border. With the exception of some fruits on the right and left hand of the door going into the house, where a good temperature was kept up, an occasional puff of air coming out when the door was opened was sufficient to secure a good crop upon the half of each tree nearest the Fig-house, while the other trees were a total failure.

During the same season Mr. Tillery, of Welbeck gardens, in his late Peach-case, of something like 800 feet long, by applying fire-heat just sufficient to ensure fructification during such dull sunless weather, secured a fine crop, so that orchard-houses without protection in the shape of fire-heat cannot be depended upon when seasons like the foregoing occur.

In the following remarks on my success in Peach-culture I will begin with, say, the preliminary waterings immediately after the fruit is all gathered. As all syringing and border watering has been left off for some time, and consequently the borders may be becoming somewhat dry, and the red-spider may to a certain extent be beginning to establish itself in some out-of-the-way corners, which will require to

* *Eria coronaria*, Rchb. f.—Pseudobulbis teretibus diphyllis; foliis cuneato-oblongis acutis chartaceis; racemo basi squamato, pauciflore; bracteis triangulis ovariis pedicellatis multo brevioribus; floribus conspicuis glaberrimis; mento bene angulato; sepalo summo oblongo ligulato acuto, sepalis lateralibus triangulis supra lineam mediam apicem versus incrassatis; tepalis cuneato-oblongis acutis; labello basi subcordato trifido ambitu angusto oblongo; laciniis lateralibus semioblongis apice subserratis; lacinia media oblonga obtusa; carinis crassis latis depressis cristulis geminis a basi in basin laciniæ anticæ; carinis in lacinia antice septeuis lobulosis angustis flexuosis.—*Cœlogyne coronaria*, Lindl. B. Reg. xxiv., Misc 178. *Trichosma suavis*, Lindl. B. Reg. xxviii., t. 21. *Eria cylindropoda*, Griff. Not. iii. 299. *Eria suavis*, Lindl. in Journ. Proc. Linn. Soc. iii., p. 52. *Eria coronaria*, Rchb. f., Walp. Ann. vi. 271.

be washed down with a powerful garden engine, in order to keep the foliage clean. Without clean foliage there will be no plump buds, and I need not say what the consequence will be the next forcing season if there are not plenty of well-ripened fruit-buds. As to preliminary waterings, I mean, by giving the borders one or two good soakings with rain-water if it can be had, but if not pump-water must be resorted to, as I dread dry borders at this season.

If the soil of the border is of a strong nature it may be somewhat caked, which will prevent the water entering freely. Previous to the second watering, and when the soil has got a little moist with the first watering and frequent syringings, the border may be carefully dug over with a steel fork. Then the second watering may be applied, making sure to give the length and breadth of the borders a good drenching, which will suffice with the frequent syringings until the leaves fall—"and I am very fond of seeing them fall in a perfectly green state." It may cause a little extra labour for some time after all the fruit is gathered. I treat all my Peach-houses as to syringing and giving and taking air as if the fruit was swelling, but without any fire-heat—always taking care to shut up plenty of sun-heat in the afternoon. This system is strictly attended to until the fruit-buds are well plumped up and the leaves begin to part freely from the branches and by an occasional brush with a new birch broom, which enables the sun to play in upon the wood and buds. The old bearing wood and other superfluous shoots having been previously cut away, the house will now be ready to be thrown open night and day previous to its being shut up for forcing. Before forcing commences the borders receive frequent waterings during the cleaning of the house and the pruning and tying of the trees. This year, as in other seasons, the above has been my practice; our early house, 135 feet long, is now quite a picture—fruit set, setting, and coming into flower, a complete blaze of blossom, and I have not remarked a single bud to drop. Night temperature between 50° and 55°, day temperature 60° and 65°; by breakfast time, with a chink of air, 75° and 80°, with air with sun-heat; but unfortunately the highest temperature has been seldom reached with us this season, yet, at all events, so far as we have gone, there is every promise.

As to syringing and damping down, that is done frequently, according to the temperature of the house and the state of the weather, until the trees come into bloom, when to a certain extent we cease to use the syringe, especially upon the trees while in bloom, while border sprinkling is still continued, unless upon a wet or very dull day, when it is done but sparingly. As to setting the fruit, I have not used any artificial means for a considerable time, but simply the common garden syringe, and this year, as in other seasons, I have applied the usual soft water as it stands in the house to the trees while in full flower. This syringing the trees on bright mornings has been done according to the sun from half-past 9 and 11 o'clock, and our set this year appears to be as thick as hail.

Whether your correspondent puts me down as a "usurper" or not I do not know. If so, I am getting rather an old one now, as it is over twenty years since I tried my hand at setting early Peaches with the syringe, and found it successful, and having measured swords with "Friend" Simpson in the Peach line on several occasions—"reverently be it spoken," if my memory fail me not, he practises the cold-water cure for setting Peaches and Nectarines thickly. As to root pruning or lifting Peach trees to make them fruitful, I have never required to do that in all my experience or practice. When grown in either light or heavy soil, to keep Peach trees fruitful, I place great confidence in proper attention being given to them in the autumn, as mentioned previously. Several years ago I filled three new Peach-houses with well-furnished trees taken from the walls of the kitchen, which proved a great success to me in Peach cultivation. *J. Miller, Clumber.*

NOTES ON RETINOSPORAS.

I LATELY forwarded to you cones of Retinospora obtusa, R. filicoides, R. plsifera, R. plumosa, and R. filifera, and as some of these are quite new to British botanists, and others prove false much that is popularly known concerning them, I may possibly be justified in submitting the following remarks thereon to your consideration.

The genus Retinospora or Chamæcyparis—I adopt the former only because the majority of the species which I am about to consider are best known by that name—as at present systematically constituted is composed of a number of trees and shrubs of most dissimilar character and habit. Some are Heath-like, with rather long squarrose leaves, and others Arbor-vitæ-like, with flattened branchlets covered with short scale-formed leaves. But it is mainly to their respective cones that we must look for their family relationship. These are all small variously-shaped bodies, some being round, others six-sided, eight-sided, and even ten-sided, and composed of from six to twelve wedge-shaped scales, in opposite cross pairs on a central axis, the summit of which is generally terminated by an odd valve composed in some instances of one and in others of two pairs of consolidated non-seed-bearing scales. The seeds, of which there are from two to six at the base of each scale, are small and either ovate-conical or angularly compressed, and edged with two or three narrow wings; and besides being all more or less coated with resin, the majority of the species have on their testa or outer covering a number of small resin blisters similar to those on the seeds of Picea and Tsuga. The male catkins are small, ovate, or cylindrical, and differ mainly from those of the true Cypresses in that they are more or less highly coloured, as in Lawsoniana, obtusa, leptoclada and sphæroidea.

If this definition of the genus be accepted—and it is not by any means new—it not only includes

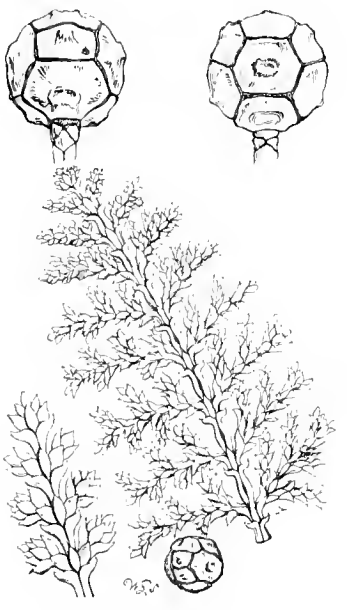

FIG. 40.—RETINOSPORA FILICOIDES.

sphæroidea or thujoides, but also Lawsoniana and Nutkaensis. But on the contrary, if we are to follow Mr. Gordon, and restrict the genus to those that have only two seeds in sunken grooves at the base of each scale, then, unfortunately for Mr. Gordon's position, two of the most distinct forms described by him as Retinosporas must be thrown out—namely, obtusa and filicoides. I find from cones grown here last year that obtusa (fig. 41, p. 236) has from two to six well-developed seeds, "freely inserted" in double series at the base of each scale; and filicoides has from two to four (generally four) seeds "freely inserted" in double series at the base of the scales—the same as in Lawsoniana and Nutkaensis. In connection with this I cannot refrain from quoting the following, which I find as a foot-note to Cupressus Lawsoniana in the second edition of Mr. Gordon's *Pinetum*:—

"Among the innovations of some modern botanists, so prolific in the confusion of practical botany, this (Lawsoniana) and Cupressus Nutkaensis have been removed to the genus Chamæcyparis, although both of them have three or more seeds freely inserted on the upper surface of each scale, as in the genus Cupressus, and consequently not in accordance with the genus Chamæcyparis, which has but two seeds under each scale, and in sunken grooves."

It would have been well for Mr. Gordon had he seen to his own laurels before undertaking to wrest well-won laurels from the brows of others. It proves how very cautious public teachers and professedly scientific people require to be. It matters very little as to the name a plant is known by; it is too late in the day, I fear, for any species of showing to change it; but I submit that in whatever section Lawsoniana may be placed there must obtusa and filicoides follow and possibly lycopodioides and tetragona (of Barron) also. I have not seen the cones of these, but judging from their leaves and general structure I should expect them to be similar to those of obtusa and filicoides.

R. filicoides.—The cones of R. filicoides (fig. 40) are seemingly identical with those of obtusa, only that they are smaller (about the size of those of Lawsoniana), globose, and composed of from eight to twelve scales. The seeds are also smaller and much more compressed than those of obtusa, and are edged with two or three very narrow wings, and, like the seeds of Lawsoniana and obtusa, they bear on their testa a number of small resin-blisters. The few seeds which I have are perfect, and were fertilised with pollen grown on the same plant, and I hope to be able to raise a few seedlings, by which I may be enabled to determine their specific or varietal character.

R. pisifera.—The cones of this species (fig. 44, p. 237) have been described by coniferists as being globose, but I find that they are distinctly eight or ten sided, and composed of as many or more scales; these are slightly depressed in the centre of the outer surface, and dilated and puckered round the edges.

R. filifera.—Cones and seeds (fig. 43, p. 237) like those of pisifera, indeed in all its characters it seems to bear the same relationship to that species that Biota pendula or filiformis bears to B. orientalis, and my experience of it is that it is only an individual seedling variety of B. orientalis. When in California a few years ago I had the pleasure of collecting some cones from a fine specimen of it, and after sowing the seeds I was duly rewarded with about a dozen plants, which, from the interest I had in their development, I may say that I watched daily for three years, but only to find that they persistently assumed the character and habit of B. orientalis. I will not say that the seeds were not fertilised with pollen of B. orientalis, because several large fruit-bearing specimens of it were growing in close proximity to the other. Dr. Siebold is said to have discovered it in a wild state in Japan: I hope this may be so.

R. plumosa.—The cones of this (fig. 42, p. 236) differ but slightly from those of pisifera, and only in that their scales are smoother or more even on the exposed surface. Indeed it is very doubtful about these forms being specifically distinct. I can find no written proof of plumosa having been found in a wild state. It is not uncommon for it to throw out branches with all the characteristics of pisifera, and I find that when these are taken advantage of and propagated they prove remarkably constant. The seeds of this, pisifera and filifera are produced in pairs at the base of the scales, and all bear resin-blisters on their testa. *George Syme, Elvaston Nurseries, Borrowash.* [The illustrations show the fruit and foliage both natural and twice natural size. EDS.]

THE WILD GARDEN.

WILD gardening has become a fashion, and a very good fashion it is; many are thus led to appreciate and enjoy the common plants in the country everywhere surrounding them which would otherwise pass unheeded. There is no plant not exquisitely beautiful, although the beauty of some is more striking, more demonstrative than others, but to suppose that we can improve the natural beauty of plants by all the tying-in, or tying-out, or cutting, or confining, is a very grave error. We cannot make a plant more beautiful or so beautiful as if left to grow in its own natural shape and way, not all leaf or all flower, but enough of each as Nature intended, and this is the great secret of the perpetual charm of a wild garden. Each plant grows as Nature intended; you apparently get rid of the artificial, there is perfect freedom, and you look and wonder at the forms of grace and beauty, the charms of colour and smell in common things, even in their very decay, for in them we know there is the resurrection and the life again. There is also a pleasant feeling that the plants are fulfilling their destiny, that they are really enjoying their life—not too much heat or too little, not too much water or too little. Nature is head gardener, and exercises that vigilant and healthful care which makes the very plants rejoice, and the heart of every rightly disposed man or woman to rejoice also in looking at them. What a wild garden ought to be all your thoughtful

readers imbued with correct taste now pretty well know. It is really the refinement of art—disorderly order—the greatest taste and skill being exercised in concealing art, or showing that the hand of man is in any way interfering with those laws in reference to the plants which, proceeding from the Great Creator, work his will.

Amidst the luxuriance of Furze and Heath, of Ferns and Brooms, of Holly, Brambles, and wild Clematis, of Bryony and wild Roses (the delicate scent of which latter tribe of plants cannot be exceeded), of Ivy and Periwinkles, of Foxgloves, Primroses, and Honeysuckles. Let me suggest one plant to your readers which in a wild garden for summer and winter effect is invaluable—I allude to the great pendulous Sedge, Carex pendula; its long narrow leaves form the most striking contrast to all plants of the Fern tribe, and, as far as my own experience goes, I have scarcely seen the plant used in a wild garden. It is easily procured, it is evergreen, its leaves are in well-grown plants about 3 feet long, and its flower-stems are quite 5 feet and sometimes 6 feet high, but its great recommendation is that it seeds so abundantly; once obtain a few plants, the whole of the wild garden trees—anywhere and everywhere, with their lovely pale blue flowers.

There is another plant common enough, but which no wild garden should be without if there is only space, the Cow Parsnip, Heracleum giganteum. In a favourable situation it will send up stems 10 feet high, with leaves 3 feet in length; it is a grand plant, requiring not the slightest care in cultivation, and once planted in a wild garden and allowed to seed there will be some difficulty in getting it out of the garden again if desired; it will grow in the most unlooked-for spots, the seeds being carried by the wind.

I have named now four plants which no wild garden should be without. Strikingly different in every feature, they possess one common advantage—they grow without the slightest trouble, they sow themselves, and they are of a kind not in any way to interfere with the effect of the ordinary well-known British wild plants.

One effect a wild garden should have, without which it is most imperfect—it should possess the charm of intricacy, it should be so constructed that the mind may imagine more than is seen; the mystery and fulness of plant growth should never be fully revealed

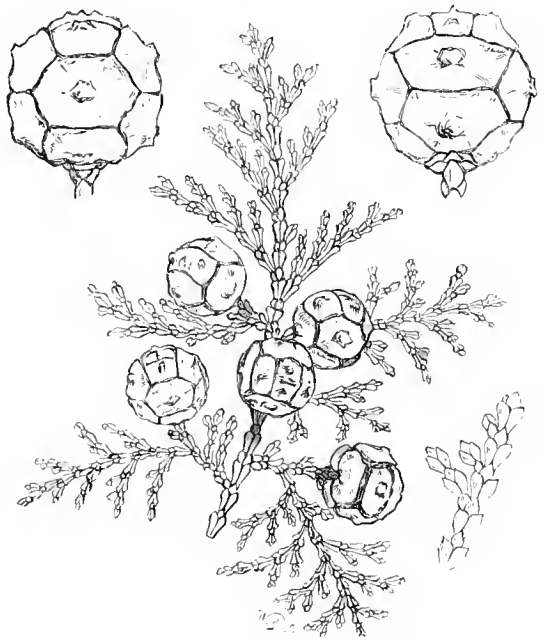

FIG. 41.—RETINOSPORA OBTUSA. (SEE P. 235.)

FIG. 42.—RETINOSPORA PLUMOSA. (SEE P. 235.)

in a few years may be covered with it, of all sizes, coming up naturally in all sorts of odd places. It grows in any soil; the more moist and better the soil the larger the growth. In good situations the tufts increase to a large size; 3 feet in diameter is not uncommon, but the smaller tufts, amidst rocks and Brambles and Ferns, from their brilliant green, produce possibly the best effect. Those who have not this Sedge I strongly recommend to obtain it; it will add a new charm to their wild garden.

There is another plant common enough, but not so much seen in wild gardens as it should be, Virginian Poke Weed, Phytolacca decandra. Its long, graceful, reed-like stems are 7 feet high, and bear pinkish flowers and black berry-like fruit, its foliage is abundant and good in colour. The great ease with which, by the aid of birds, it becomes self-sown—springing up in all kinds of odd out-of-the-way places where you would scarcely think of planting it—renders it a most desirable plant to aid the illusion of unkept wildness.

There is another dwarf plant not of many years' introduction, which for spring effect in a wild garden mixed with the common pale yellow Primrose is an admirable plant. I allude to the Forget-me-Not, Myosotis dissitiflora; this becomes quite a wild plant: only let alone, in a year or two, from only a few plants you may have thousands of them springing up in the grass or rude walks, under rocks, at the bottom of except diligently sought for; possibly a well-constructed thicket, with rocks and a small stream of running water, may be made to represent the highest form of art which a wild garden is capable of, and such a garden can never tire. Winter or spring, or autumn or summer, it will always be beautiful, and always present new sources of interest and delight.

K. K., Taddyforde.

CLASSIFICATION OF PLANTS.

[THE following is an abstract of the first of four lectures on The Vegetable Kingdom: the Boundaries and Connection of its Larger Groups, delivered by Mr. Thiselton Dyer at the Royal Institution of Great Britain on Saturday last. EDS.]

Classification is a natural propensity of the human mind. If our attention finds itself directed to a large number of objects, about which we desire to inform ourselves, a desire to economise our labour, or even render it possible, leads us to endeavour to throw the assemblage into subordinate groups. The result, and indeed object of this process is to enable us to frame general statements about these groups which cover all the things comprised within them. In the case of a naturalist it is desirable that our groups should be so constituted that as many general statements as possible may be made with respect to the same groups; and in proportion as our classification allows us to do this successfully we say it is a natural one—one conformable to the order of Nature—and such as Nature herself would constitute if the task were assigned to her rather than undertaken by us.

The earliest attempts at classification seized upon the most striking superficial distinctions. When Solomon "spake of trees, from the Cedar tree that is in Lebanon even unto the Hyssop that springeth out of the wall," it is quite evident that size was the point of comparison which aided the process of passing them under review. And till the time of Ray and the beginning of the eighteenth century the classification of plants into trees, shrubs, undershrubs, and herbs held its ground, though nothing is now better understood than that this, which is a mere matter of habit and mode of growth, is no clue at all to the real affinities of plants.

It has been found—at any rate in framing the larger groups of the vegetable kingdom—that distinctions drawn from points of structure of a more and more recondite character have proved most trustworthy. Ray laid the foundation of this method by establishing the best distinction ever detected between the two great groups of flowering plants when he pointed out that the embryos were furnished with one and two seed leaves respectively.

In point of fact, comparing the two great branches of activity into which the life of plants is divisible—nutrition, *i.e.*, all that concerns the growth or multiplication of the *same* individual; and reproduction, *i.e.*, all that concerns the production of a *new* individual—characters drawn from nutritive structures have proved of little value, while those taken from reproductive structures have proved of the highest importance for purposes of classification.

The reason seems to be that the plant must live before it reproduces. The stress of competition has been harder on one side of its life than on the other. Habit of growth, which is the expression of the plant's attempt to adapt itself to the conditions of existence prescribed to it, must vary as the conditions vary; but the development of ovules and ovary come when the battle of life, so to speak, is won, and so we find that species of the same genus or family which we should hardly suspect to be akin from the differences in external resemblance are proved to come of the same strain by the common possession of the same details of structure in the organs which have to do with the production of the seeds. And this brings us insensibly to

the modern point of view of regarding the whole matter. As amongst ourselves, whether we consider the family or the race, similitude or family likeness implies blood-relationship or community of descent, so we hold that in all organisms resemblances in structures which are constant in large groups or vary very slowly imply origin from a common ancestor. This is the teaching of the doctrine of descent, and we can now see clearly what is the nature of the real problem of classification. It is nothing less than to group plants as we should see them grouped if we could inspect the mighty family tree of the plant world.

This new mode of regarding the facts of natural history is termed phylogeny, and it is worth while remarking that there is a considerable difference between the vegetable and animal kingdoms in respect to the areas from which the most significant phylogenetic facts are drawn.

In animals it is found that the embryo in the course of its development passes through phases which are, as it were, reminiscences or survivals of those which its less highly organised ancestors passed through. With plants it is not so clear that this is the case. The actual cause of development of a seedling Fern and of a flowering plant presents some important points of difference, but in a general way the two young plants are essentially similar, since each consists of the same assemblage of organs—root, stem, and leaf. But the way in which the two plantlets have been produced is extremely different. Perhaps we shall not be going far wrong if we say that in plants the stages which immediately precede the formation of the germ, and in animals those which immediately succeed, are of the greatest phylogenetic significance.

In undertaking the actual task of classification, we proceed on the assumption that as in a tree the twigs which form the growth of any one year belong to branches of all ages—from the very earliest to the very youngest—the living constituents of the vegetable kingdom represent, more or less modified, all the successive grades of development which plants have passed through. Some of the branches of the family tree have no living representatives, and as to these we must seek for such evidence as we can obtain amongst fossil plants.

Clearly then we shall be right in regarding plants of the most simple structure as of the most antique type. The partition of the vegetable kingdom effected by Endlicher is hardly susceptible of improvement. He divided plants into Thallophyta (leafless plants), and Cormophyta (leafy plants). The one exhibits the presence, and the other—if we may say so—the absence of the contrast of leaf and stem. Leafless plants are clearly the simpler, and come nearer, therefore, the base of the family tree.

Now, leafless plants have long been held to fall into two great groups—Algæ (Tangles), which, speaking generally, are independent of organic nutriment, contain chlorophyll, and build up their tissues by decomposing carbonic acid; Fungi (Thread-plants) are wholly dependent on other organisms, which they feed on either living or in decay. Each series ranges from the very simplest forms which it is possible to conceive endowed with life up to others which display a very complicated structure. But, as will be shown, there is a remarkable parallelism from the structural point of view between them, so that the physiological difference seems to be of less importance than might be supposed. The difference in mankind between honest men and knaves is a thing of the highest consequence, and yet anatomically the distinction between a saint and a murderer is not at present appreciable. Perhaps then we may regard fungi as the knaves in the world of Thallophytes where Algæ are the honest toilers; it is interesting to see that, as in nobler spheres, it is easier for honesty to degrade into knavery than for the process to be reversed.

We may divide Algæ into four groups, based upon the progressive complexity of the reproductive process:—

1. Protophyta	.. ..	Primitive Tangles.
2. Zygosporeæ	.. ..	Conjugating Tangles.
3. Oosporeæ	.. ..	Egg-bearing Tangles.
4. Carposporeæ	.. ..	Fruit-bearing Tangles.

In the Protophyta the sexual mode of reproduction is unknown; in the Zygosporeæ it is exhibited in its simplest form—the two conjugating masses of protoplasm being in no respect distinguishable. In the Oosporeæ a marked difference in size in the conjugating masses makes itself manifest; we distinguish therefore oosphere and antherozoid. In Carposporeæ the process of fertilisation is not confined to the production of the oospore from the oosphere, but accessory changes result in the formation of a fruit-like structure. Here the curious group of Stoneworts (Characeæ) seem destined to find a final resting place.

Fig. 43.—Retinospora filifera. (see p. 235.)

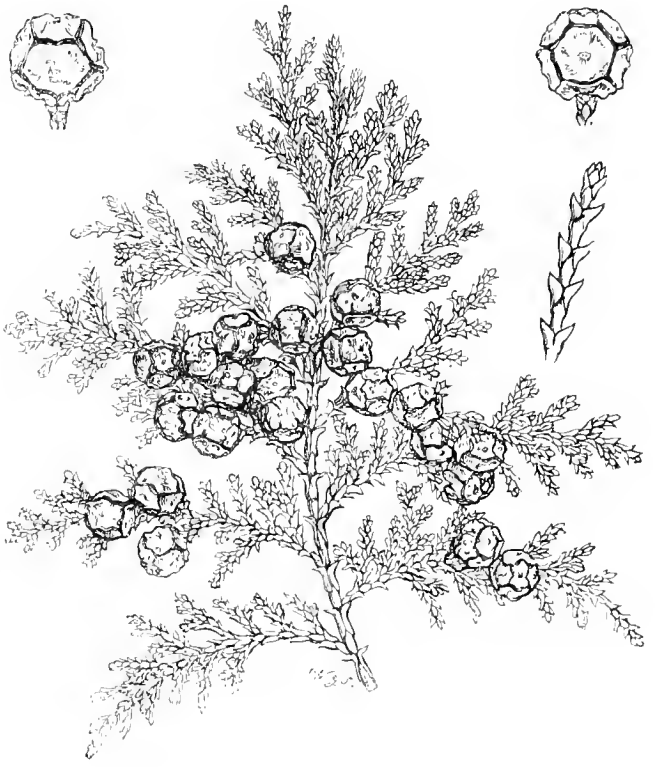

Fig. 44.—Retinospora pisifera. (see p. 235.)

Foreign Correspondence.

Botanical and Horticultural Notes from Portugal.—The autumnal aspect of Portugal presents a gloomy appearance to a tourist fresh from the bright vegetation of the Eastern Alps. Up to the time of my arrival at Lisbon, on October 13, there had been scarcely a drop of rain in the south of Portugal for more than four months, and the half-cultivated undulating country surrounding Lisbon, dry, parched, and bare, presented anything but a hopeful prospect for plant collecting. The general barren aspect was, however, relieved in detail by verdant spots and isolated districts rich in interesting plants, as well as by gardens luxuriant with "half-hardy" Coniferæ, Australian shrubs, Orange groves, and fruit orchards.

Fruit Culture.

As a fruit-producing country Portugal stands unrivalled in Europe, and Lisbon, the maritime Clapham Junction of the West, affords a ready sale for the vast produce of fruit and vegetables to the steamers, which make it a port of call to and from most parts of the world. The shops, markets, and quays overflow with fruit all the year round; Oranges and Lemons from Setubal and Cintra from December to April; then Strawberries, of fine quality, followed by an abundance of Peaches, Apricots, Plums, and other stone fruit at midsummer; and in the autumn a complete glut of Melons, Apples, Pears, Figs, and Grapes, and Olives, which commence to ripen here in October. Of wild fruit, the berries of Arbutus Unedo are extensively sold in Lisbon, and consumed by the poorer classes; and a sort of wine is also manufactured from them. The berries of Empetrum (Corema) album are gathered and eaten by the poor, and I observed during one of my botanical rambles the nearly ripe cones of the Stone Pine being roasted, and the seeds eaten by a party of woodmen in the forest.

One of the most important industries of Portugal,

the result of this large production of fruit, is its conservation in various forms. It was originally carried on in the numerous convents, but of late years it has also become an extensive national industry and an important item of food production. As regards quality the well-known boxes of preserved fruits are inferior in finish to those of the French, but the quantity exported is enormous; in addition to which inspissated fruit, boiled and half-dried, and cast into moulds, is an important article of food with the people. It forms the staple of the confectioner's produce, being worked up into the most artistic and complicated achievements of the culinary art, and is also sold in little square cakes as a common article of food in the shops and streets, and at the railway stations.

Geological Formation.

The geological structure of the neighbourhood of Lisbon is somewhat intricate, and as it considerably relates to the aspect of the country and the distribution of the indigenous flora, I will briefly refer to it.

The cliffs on the south side of the Tagus, opposite Lisbon, consist of a succession of middle tertiary grey marls interstratified with highly fossiliferous calcareous bands. These are overlain by coarse, soft, sandy strata of tertiary age, which spread for many miles to the south-east, and occupy, as a great broken sandy plain, the whole of the promontory south of the Tagus, with the exception of its south-western extremity between Setubal and Cape Espechel, which is of Jurassic age, and includes also some red sandstones and marls, which are probably triassic. The tertiary sand and gravel beds occupy also an extensive area to the south-east of the Espechel promontory, which is rendered still more arenaceous by the accession of vast quantities of sea sand drifted inland for several miles. This is the region of the Stone Pine and Cork Oak, which here form extensive forests, interrupted occasionally by isolated patches of cultivation. This district contrasts strikingly with the bare limestone downs of Cape Espechel, and the tertiary and cretaceous districts north of the Tagus, which are all but treeless.

North and west of Lisbon, as far as Cintra, tertiary and cretaceous beds prevail, occasionally broken into by eruptions of basalt, probably of tertiary age. Here the aspect of the country is monotonous and dreary in the extreme—bare half-cultivated undulations, both botanically and agriculturally poor, and unrelieved by trees. The granite Sierra de Cintra, crossing this district about 16 miles north-west of Lisbon, rises to a height of some 2000 feet. There is a gradual ascent from Lisbon to the south side, which is bare and heathy, to a depression in the middle of the ridge, which suddenly brings you to a rich oasis of arboreal vegetation, forming a marked contrast to the desolate bare district you have been travelling through, and the great undulating monotonous plain in front between the Sierra and the sea. Cintra is certainly a striking and beautiful place, but, with its hotels, taverns, neatly terraced roads, donkey boys, and daily incursion of a multitude of vehicles from Lisbon, it does suggest the idea of a gigantic tea-garden, and is too obviously a place of ephemeral enjoyment to warrant all the poetical enthusiasm it has called forth, or to enable a lover of Nature to feel quite comfortable there.

For so limited a district the great difference in the climate from that of Lisbon is remarkable. Cintra is exceptionally humid nearly all the year round, and often a long pile of clouds overhangs the Sierra whilst Lisbon is parched up and rainless. The indigenous woods of Cork Oak and Pine on the north-west side of the range, as well as the trees in the many beautiful gardens of Cintra, are remarkable for their vigour. Eucalypti and other Australian genera seem quite at home, and Araucaria excelsa and Bidwilli, especially those in Mr. Cook's garden at Monserrat, are making prodigious growth, and in a few years will form striking features in the landscape of Cintra. The Ivy-leaved Senecio is another noticeable exotic, and has become completely naturalised on many of the terrace walls, which in mid-winter it adorns with glorious masses of its golden-yellow flowers.

Wild Plants.

The indigenous flora is by no means poor. Of Ferns there are a number of interesting species. Davallia canariensis is extremely fine, and luxuriant as an epiphyte on the stems and branches of the Cork Oak by the roadside to the west of the town. Asplenium palmatum and Asplenium acutum abound in the shady parts of the moist dingles that intersect the north side of the Sierra. Pteris arguta has been found in a valley near the Cork Convent, and Notholæna Marantæ higher up on the Sierra. Cisti and Heaths almost entirely compose the undergrowth on the wooded side of the range, the latter including Erica arborea, australis, mediterranea, and ciliaris—the last in full flower at the time of my visit in October.

Amongst the other plants gathered in this and a former visit in January, 1871, may be enumerated Crocus Clusii on the Sierra, near the Cork Convent; Chrysanthemum Myconis and Ionopsidium acaule, and several species of Linaria, near the summit of the ridge, also Trachelium cœruleum on walls near the town. Leucojum autumnale, Scilla autumnalis, and Merendera bulbocodioides are the commonest autumnal bulbs, and were bursting up through the hard clay soil in October, even before the commencement of the autumnal rains. The Merendera covered the ground in some places with its pretty rosy-red flowers, and I also found it abundantly near Oporto and in the neighbourhood of Lisbon. It varies much in the size of the flowers, and seems scarcely entitled to specific rank as distinct from the Spanish Merendera Bulbocodium. Intermixed with it was Colchicum lusitanicum, distinguishable from the English C. autumnale by its smaller, slightly chequered flowers.

In the early spring the ground below Cintra is rich in bulbous plants, indeed during my late visit a casual excavation with my digger turned up four or five species from a single hole.

Iris Sisyrinchium was abundant everywhere; Corbularia Bulbocodium grows both on the Sierra and below Cintra, flowering in February. I also found Scilla hemisphærica, Iris juncea—a lovely bulbous species with bright yellow flowers, and Narcissus niveus; the last growing in moist places along the watercourses in the greatest luxuriance, and attaining a height of between 2 and 3 feet.

Iris sub-biflora (Brotero) is an abundant plant in the neighbourhood of Lisbon, also near the coast between Cintra and the Rock of Lisbon, where also are found two species of Statice, several Alliums, and a number of other bulbous plants.

The North and South of Portugal, as regards natural features, climate, industry, and people, differ very widely; a map of the country exhibits at a glance the contrast between the thickly peopled North, graduating in population southwards towards the sandy district south of the Tagus, where the villages are few and far between. From Lisbon to Oporto the country presents few features of interest except the town of Coimbra and its botanical garden, which I shall presently refer to. A twelve hours' journey by rail at the rate of 15 miles an hour, through a poorly cultivated country, with scarcely a natural feature to relieve its monotony, is not an invigorating experience. The rounded summits of the Sierra d'Estrella are seen to the east, and here and there you pass through a forest of Stone Pines; but otherwise there is not an attractive feature to relieve the monotony or to claim the attention of the wearied traveller.

Oporto.

As you near Oporto a pleasant change in the scenery takes place. The noble river Douro, somewhat resembling our English Dart, courses rapidly to the sea between bold granite cliffs, crowned on the right bank by the comely granite-built city, and on the left the extensive wine stores of Villa Nova de Gaya are piled up like steps on the sloping bank, and connected with Oporto by a suspension bridge. The whole scene is charming, and I know of no city in Europe which for its size presents such an aspect of substantial prosperity and picturesque beauty of situation. Oporto strikes the new-comer with its marked contrasts—great wealth, vigorous prosperity, and advance, combined with the habits and manners of bygone ages. You pass through wealthy streets of banks, jewellers' shops, and mercantile establishments, with noble granite buildings rising in every direction; miles of tramways with their neat, smart cars jostling with strange primeval ox-carts, with solid creaking wooden wheels, performing all the heavy porterage of the city, driven by muscular bare-footed women, "with the kirtle down to the knee," adorned with a profusion of solid gold and silver ornaments, in which their entire savings are said to be invested. The ox yokes complete the strange *ensemble;* all are picturesquely carved and generally enriched with bright colour and gilding, and many are perfect examples of design — the outcome of rude genius untutored by "grammars of ornament." The climate of Oporto seems perfect for gardening; both frost and scorching heat are absent, and a general greenness and vigour contrasts favourably with the scorched-up aspect of Lisbon and the South. The public garden is, however, untidy and ill-kept, and an Englishman cannot help feeling how much might be done here by a neat and educated hand. There are several interesting private gardens in the neighbourhood—one of noteworthy attraction at the *kinta* of Mr. A. Grant, is arranged in terraces on a fine site overlooking the Douro. It is rich in what have come to be called in England "subtropical plants," especially in shrubby Solanums, of which Mr. Grant has a fine collection. Magnolia grandiflora attains enormous proportions: one in an adjacent garden has a trunk with a girth of 15½ feet and a radial spread of more than 30 feet, or 60 feet in diameter. The most striking of the many species of half-hardy Coniferæ which have been introduced to Portuguese gardens is Araucaria excelsa; the specimens in the grounds of the Oporto Crystal Palace, which have only been planted ten years, are marvels of growth and symmetrical beauty, and are destined in a few years to form important features in the beautiful landscape of the Douro. I had not much time to examine the indigenous flora, but during a short walk in the environs of the city was fortunate in finding Crocus Clusii in great abundance on the Campaña, a species which the local botanists had supposed to be serotinus. Merendera bulbocodioides was also abundant. Drosophyllum lusitanicum grows on the heathy hills, and Pteris arguta has been found by Mr. W. C. Tait in one locality in the neigbourhood. I was also informed by several persons that a wild yellow Crocus grows about Oporto, but as all the yellow species of the genus are eastern in their distribution I fear it may turn out to be only Sternbergia lutea, though the matter may be worth further looking into by any botanist visiting the north of Portugal. *George Maw, F.L.S., Benthall Hall, Broseley, Jan.* 29, 1870.

(*To be continued.*)

Florists' Flowers.

Carnation and Picotee Dressing.—Rejoice with me, O my friends! The infallible one has spoken, and having hurled out, *con amore*, his anathemas, now adds with outstretched fingers, *Urbi et orbi*, his benediction! How one who is ignorant, "incapable of grasping facts," "idiosyncratic," &c, can have done good service to any cause, I must leave to infallibility to decide; but so he says, and, therefore, it must be true. I dare not attempt to pursue an argument with one who occupies so exalted a place, but I must simply reiterate my statements: (1) that these flowers and the Pink are treated for exhibition in a way in which no other florists' flowers are; (2) that a good dresser has a far greater advantage than a good cultivator, and (3) that the general public and the uninitiated are led thereby to form a very different notion of these flowers to what they would do if they were exhibited as grown. *D., Deal.*

[The controversy as to this matter must now cease. Eds.]

Natural History.

Titmice.—These birds will vary their food to suit seasons and circumstances; they are not "unquestionably insectivorous," for they will eat seeds, fruit, animal food, breadcrumbs, &c. I have kept both blue-tits and cole-tits; the latter were very pugnacious, but the blue were dear little pets—one got so tame that it would fly round the garden and come back when called, alighting generally on my head. *Helen E. Watney.*

Motacilla alba. — The true white wagtail is rarely found in this country, though very generally seen on the French coast. A writer on the birds of Sussex, A. E. Knox, mentions that two or three have occasionally been shot in the vicinity of Brighton and Worthing; they are very like the Pisa birds, which come over to us in large flocks about the middle of March. *Helen E. Watney.*

Hibernating Butterflies.—These are more lively if fed. Tortoiseshells I have seen enjoying soft sugar and a tiny drop of water—it seemed to suit them. *F. J. H.*

Garden Operations.

PLANT HOUSES.

Greenhouse Hard wooded Plants.—Where a considerable collection of Azaleas are grown, either for exhibition or conservatory decoration, these will now demand attention in removing a portion to a house where their flowering can be retarded. As I have before urged, there is no establishment complete where a large continuous supply of blooming plants is required that is not provided with a retarding house. Such a house need not be an expensive erection, as an ordinary lean-to with a high back wall is the best; it should face the north if possible; no stage is required, as, when the things to be kept back are stood on the floor, they are further from the influence of the sun, and as there is little growth progressing during the time they are in it, there is no necessity for their being near the glass in the way they ought through the summer, although even then there are many plants that will do equally as well in such a house as they would in one more under the influence of the direct action of the sun. The great advantage of a retarding house is that plants can be kept back in it without having recourse to their being heavily shaded, as is the case when it is necessary to keep them back in houses under the full power of the sun. With Azaleas that are wanted in flower after the middle of May, it is requisite to at once take means to prevent their coming on too fast, for if kept back in the later stages of the flower-buds swelling, or when near opening, it is doubly unsatisfactory, both injuring the growth for another year and also preventing the flowers ever having the size and general appearance they attain when they are kept a little warm in the last stages of their expansion. Where a house of the above description exists, with a single 4-inch pipe round it so as just to keep out frost, and a sufficient number of plants are at command, there is no difficulty in having a continuous supply in the conservatory from the beginning of the year up to the end of June. For the earliest bloom there is nothing equal to the Chinese species, Vittata, white, striped and spotted with violet; the white kinds are many of them naturally inclined to come into flower earlier than the higher coloured sorts. The old variety, Fielder's White, is still a good kind for forcing, but this and most of the other single sorts are likely to be superseded by the semi-double varieties, such as A. Borsig, Reine de Portugal, and Flag of Truce. The great advantage in these double kinds, especially when the flowers are required for cutting, is that they last as long again as the single sorts. To bloom late the orange-scarlet variety Brilliant is unequalled; Eclatant, scarlet shaded with violet; Chelsoni, pale scarlet; and elegantissima, white, striped with rose, are good kinds.

A few plants of the latest flowering Camellias, such as candidissima, white, and Bealii, red, may also be put in the retarding house; the blooms of these come in very useful for cutting after the generality of the plants subject to ordinary treatment are over. *T. Baines.*

FLOWER GARDEN.

What has brought the "bedding-out" system into disrepute with some, is the enormous labour of getting up a stock of tender plants for the purpose, and the comparative shortness of the season they continue in good order; but in this respect very much may be done to lighten the labour of propagation, and at the same time to add variety and interest to the garden by the introduction of hardy plants, many of which are just as effective, if not more so, when arranged in conjunction with tender subjects. To give an instance: one of the best and most telling arrangements we ever had was a circular bed, planted as follows:—Centre plant, Dracæna australis lineata, and equidistant from the centre plant and turf edge four plants of Dracæna erythrorachis; the bed was edged with Sempervivum montanum, and the ground covered with Sedum corsicum, a beautiful grey tint, this being sprinkled over with Alternanthera amœna spectabilis. Alternantheras are indispensable for "carpet" designs; and as they are of such slow growth that they require planting thick enough to almost touch each other in the beds, they should now be propagated in large numbers. Shallow boxes, 5 inches deep, 2 feet by 1½ foot in size, are convenient for the purpose, and should be filled to within an inch of the top with sandy peat and leaf-mould, pressed rather hard. The cuttings need not be more than 1 inch apart, and if the box can be covered with glass they will soon strike without bottom-heat if put in a Pine-stove or vinery that is being forced. Later in the season they may be struck in frames, slight hotbeds being made up purposely; they strike easily in this way, and need no moving till finally transplanted to the flower garden. All ours are struck in this way, as also Lobelia Blue King and Lobelia Blue Beauty, two of the best varieties we have yet met with, being dwarf, continuous flowering, and pleasing in colour. Most of our subtropical plants are raised from seed, a list of which was given in a former Calendar, but the following we increase by cuttings, and are now putting them in in strong heat top and bottom:—Dracænas, of sorts, cut up into "eyes;" Ficus elastica, ditto; Aralia papyrifera, from root cuttings; Aralia japonica, from ordinary cuttings; and Cannas and Thormums by division. Dahlias, Salvia patens, and herbaceous Lobelias should now be started if the stock requires increasing; the two first will bear great heat, but the latter soon falls a prey to red-spider when much heat is given. If Calceolarias have been wintered in pots or boxes let them as soon as possible now be planted out into cold pits; the soil for them should be largely composed of leaf-soil, as in this they root quickly and move well. Aurea floribunda and amplexicaulis are the only two kinds grown here, and these never fail us. The beds for them require to be rich, deep, and, soon as planted, thickly mulched; failure then is simply impossible. As it may be presumed that all danger of severe frost is past, edgings of walks may now be cut, and made even with the edging-iron, previous to which roll the verges, and they will cut much better. Afterwards, if necessary, the walks should be surfaced with fresh gravel, and well rolled, that they may get hard before dry weather begins and hinders the gravel from setting well, as it will now. *W. Wildsmith, Heckfield.*

FRUIT HOUSES.

Peaches and Nectarines.—As soon as the fruit is fairly set, which will now be the case in early started houses, the trees should be well syringed twice every day in order to keep the foliage clean and free from insect pests and likewise to secure a condition in the house which is requisite towards maintaining a satisfactory progress of the trees; for this object, according as it is necessitated by the influence of ventilation, it will be needful to moisten the borders when the surface becomes dry. With increased advantages which we now possess in the way of sunshine and light, growth will proceed much more rapidly and satisfactorily. See to ordinary requirements as to disbudding, stopping and pinching the shoots, &c.; in the former case let it be effected by degrees, removing such as can be spared and reserving at suitable positions those which are to form spurs: these should be nipped at the fourth or fifth joint, and where any shoots of a gross nature exist these should be stopped when they have made a run of 6 or 8 inches long. Continue 55° as the standard night temperature, allowing it to recede 5° more under severe outside pressure. Constantly open the top ventilators at 58°; let it gradually ascend by solar heat, increasing the supply of air by degrees, and range it by these means from 75° to 85°, having at the time under favourable circumstances a liberal supply of air passing through the house; in like manner, as the natural heat subsides, diminish the supply of air accordingly until it falls to 60°, when the house should be closed. Advance successional houses in the manner indicated for the early ones in former Calenders; as the flowers expand see to fertilisation as before directed: should the bees put in an appearance it will not then be necessary. *G. T. Miles, Wycombe Abbey Gardens.*

Vines.—When the fruit has been cleared from the late house as before recommended, no time should be lost in completing the pruning, as with mild weather the sap may be expected to come into action rapidly. Vines pruned at this late season are liable to bleeding, and for this reason it is advisable to apply some effective styptic as soon as possible after the pruning is completed or, under any circumstances, within a few hours. One of the best and most simple remedies which I have found to answer well is a patent varnish; this may be procured in small bottles from any oil or colourman, and if applied to the wounds with a small brush, dries quickly, and effectually stops all pores by which the sap may exude. Pruning and cleaning being completed, the borders should next receive attention; those inside, if in a healthy sound condition, being lightly forked and well watered with tepid water. The outside borders should also have the coverings removed as soon as the Grapes are all gathered. Where new Vines are to be planted, either in spring or summer, presuming the necessary compost has been prepared, the foundation of the border made, and the necessary drainage provided, the soil should be put in as soon as possible, so as to become well settled down before planting. Where the borders are inside and outside, or in either case, it is not necessary to make them more than 4 to 5 feet wide on either side the front wall for the first season. Where there are not conveniences for growing on plants for summer planting, spring planting is preferable.

Where a house is devoted exclusively to the growth of Muscats, these, to be well ripened in September, should be started gently on now, so as to get the fruit thoroughly ripened in good time; so treated they will keep better and hang later than when the ripening has to be done with the decrease of light. Stopping, tying, and thinning in the earlier houses will now require constant attention. *W. Cox, Madresfield Court.*

Cucumbers.—The greatest drawback to the successful cultivation of winter Cucumbers is an excess of dry fire-heat, hence the importance of a liberal supply of hot-water pipes, which renders over-heating unnecessary. Evaporating pans also play an important part as the days increase in length and brightness, but through the short dark days, when syringing cannot be resorted to, fermenting materials will greatly conduce to the healthful vigour of the plants. As the days lengthen, heat and moisture may be slightly increased, and the foliage will be benefited by light syringings on fine afternoons with water at a temperature of 85°. Dress over the plants at least twice a week, and on no account allow the young growths to become crowded, as few plants pay better for constant attention than winter Cucumbers. Another important point is the piecemeal system of supplying small quantities of good turfy loam to the roots as they rise to the surface. Young plants must be kept well up to the glass to ensure sturdy growth. If intended for frame culture, when well established in the pots they may be stopped beyond the second rough leaf; if for training over a trellis, stopping must not be resorted to. Pits and frames will now require attention. Keep a good supply of well worked stable dung and leaves in hand for use, and make up succession beds. Prepare hills where the heat in the beds first made up is declining. When the soil is thoroughly warmed through the plants should be turned out before they become pot-bound. Guard against injury from rank steam by slightly tilting the back lights. *W. Coleman, Eastnor Castle.*

KITCHEN GARDEN.

Well-sweetened fermenting material will now be one of the principal requisites in the kitchen-garden, and for the next month or so a good stock of this should be kept on hand to form hot-beds on which to prick out and nurse the plants of the various tender vegetables requiring such assistance. Cauliflower, Lettuce, and Celery raised in boxes or pans should at once be got out in frames, where they can enjoy a gentle bottom-heat, and be grown on without a check. Prick out in light, leafy soil, and keep them well up to the glass to prevent drawing. Sow again of each of the above in similar positions to succeed these and come in before they can be obtained from the early borders. Asparagus will now do well on hot-beds without the aid of hot-water pipes for top-heat, and a good supply of this delicious vegetable may now be kept up in that way. Afford plenty of air to that up whenever the weather is favourable, so as to impart the natural flavour and colour. Roots of Seakale from which the heads have been cut should be shortened to proper lengths, and be either planted at once in well-trenched heavily manured ground, or buried in moist coal-ashes till a more convenient time. The thick strong roots should be chosen for the above purpose, and in shortening them into the requisite lengths, which should be from 3 to 6 inches, it will be necessary to make a sloping or other distinguishing cut at the lower end to prevent them from being planted upside down, as they vary so little in size. Root cuttings of this kind make fine crowns for forcing again the following season, and are preferable on that account to seedlings of the same age. The quantities of Rhubarb taken up for forcing necessitates a continual replanting. This should be done on fresh land instead of refilling the vacant places caused by the removal of roots for the above purpose, as then fresh rich land will be set at liberty for other crops that are of a gross feeding nature. Take advantage of the weather to prepare land for getting in such crops as Parsnips, Onions, Parsley, &c., which can scarce be got in too soon, provided the ground in good order. To get the latter to stand well, and afford a good winter supply where it can be protected, a good sunny border should be chosen on which to sow it. Early Turnips are sure to be in request, and to obtain these sweet and juicy it is necessary to sow the first lot where they can be accommodated with a slight bottom-heat, that they may be grown quickly. A deep trench filled with well-sweetened manure answers best for the purpose, and a similar bed on which to plant and protect a few rows of Myatt's Ashleaf Potatos to come in before they can be obtained from the early borders will be found most useful. Give to those in frames plenty of air whenever the weather will admit of such being done, or they soon become drawn and weak. Cauliflower under handlights must likewise have an abundance of air by tilting or crossing the covers, and in mild weather by their entire removal. A sowing of round Spinach should be got in on a sheltered border, as, with mild weather, that now in use will soon be starting to seed. Peas of the choice marrow class, such as Advancer, Veitch's Ne Plus Ultra, or Queen's, should be got in to succeed the first earlies, and any of the latter raised in boxes or pans got out on nice warm sheltered borders and have the protection of a few evergreen twigs afforded them. *J. Shiffard, Woolverstone.*

HORTICULTURAL EXHIBITIONS, 1876.

MARCH.

1.—Royal Horticultural Society, South Kensington, Meeting of Fruit, Floral, and Scientific Committees.
14.—Manchester Botanical and Horticultural Society. Floral Meeting at the Town Hall
15.—Horticultural Society of Liverpool. Exhibition of Hyacinths and Spring Flowers.
15.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees. Spring Show.
15.—Royal Agricultural and Horticultural Society of Jersey. Extra Spring Show.
15 and 16.—Leeds Horticultural Society. Spring Show.
22 and 23.—Bristol, West of England, and South Wales Chrysanthemum Society. Spring Show.
29.—Royal Botanic Society, Regent's Park. Spring Show.
29.—Glasgow and West of Scotland Horticultural Society. Spring Show.

THE

Gardeners' Chronicle.

SATURDAY, FEBRUARY 19, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Feb. 21	Sale of Orchids, at Stevens' Rooms
TUESDAY,	Feb. 22	Sale of Nursery Stock at the Exotic Nursery, Tooting, by Protheroe & Morris.
WEDNESDAY,	Feb. 23	Sale of Hardy Trees and Shrubs, Roses, Bulbs, &c., at Stevens' Rooms
THURSDAY,	Feb. 24	Sale of Liliums, at Stevens' Rooms.
FRIDAY,	Feb. 25	Sale of East Indian and Japanese Orchids, at Stevens' Rooms.
SATURDAY,	Feb. 26	Sale of Roses, Fruit Trees, Shrubs, &c, at Stevens' Rooms.

THE struggle for existence now being so forcibly illustrated in the case of the Royal Horticultural Society is an experience by no means uncommon to many of the HORTICULTURAL AND FLORAL SOCIETIES scattered up and down the country. Societies whose yearly expenditure ranges from £300 to £500 are found publishing balance-sheets which show that almost the uttermost farthing in the way of receipts have gone to cover the expenditure. In a very few instances there is a reserve fund, but in a large majority of cases the annual exhibition is simply a commercial speculation, the which, if it fails through a diminution of public support, such as occurs in the case of unfavourable weather, results in a serious financial loss, and much anxiety to the promoters.

We fear there is much danger that flower shows are becoming less and less mere exhibitions of horticultural produce and arenas for displaying horticultural prowess, and that these leading features of a show have lost their attraction for the multitude. There is an inevitable sameness about them; certain plants are seen year after year displayed in a certain way, and after an unvarying method; of novelty there is little or nothing, and the annual show becomes monotonous to the non-horticultural public, and something of a yearly bore. This being so, special efforts are put forth to revive the declining public support; a fashionable, and, as a natural consequence, a very expensive band is engaged; other attractions are provided—in some cases athletic sports, sensational performances, pyrotechnic displays, and so forth. The show is thrust into the background, and of the many hundreds who attend it, large numbers scarcely enter the tents. Even in cases where the annual flower show is made the holiday of the district, the public interest has to be stimulated by other attractions than the mere show, and the promoters are found asserting that were they not so provided a certain amount of financial failure would surely follow. From the foregoing considerations we are, no doubt, able to understand to some extent why it is so many of the florists' societies have died out. Those who cultivate the flowers retain all the old ardour and enthusiasm; the general public, not being stirred by similar emotions, are not attracted to them.

There is, therefore, much reason to fear that the practical value of horticultural societies, in so far as they foster improvements in gardening, is much over-rated. There are, however, exceptions, in which societies are found doing real practical work, only it is in a direction lying somewhat outside the usual track. One of these directions is in the formation of allotment gardens on the outskirts of populous places, where garden ground is necessarily of a limited character, partitioning the ground obtained into equal and moderate-sized lots, and apportioning it to the labouring classes, assisting them to obtain good seeds, and further encouraging them by offering prizes for the best kept allotment, and for the best produce from them. The principle of allotment gardens is one capable of great expansion, and there are many pieces of waste land that might be beneficially utilised in this way, if only the proper course for bringing it into cultivation was adopted.

Another mode of working practical good is that illustrated by the practice of the Grantham and South Lincolnshire Horticultural Society, to which we have previously referred. We think the credit of originating the practice is due to Mr. WILLIAM INGRAM, of Belvoir Castle Gardens. The Society annually votes a certain sum of money, according to its means—five or ten pounds, as the case may be; and that sum is expended in the purchase of fruit trees of approved sorts, likely to do well in the neighbourhood. In this respect Mr. INGRAM'S experience is found of great value. These trees are then distributed among the cottagers of certain districts, and they are encouraged to plant them, to take the place of trees that have become worn out, or of varieties unsuited to the locality.

Both these instances reveal means of great practical usefulness; for not only is there service done to horticulture, but there are involved also certain social issues of an encouraging character. The practice of the Grantham Society is one well worthy of being imitated, especially in the more remote country districts, where the need is greatest.

WHATEVER be the result of the deliberations of the committee appointed to confer with the Council of the ROYAL HORTICULTURAL SOCIETY on the question of privileges, we fear that it will but touch the fringe of the subject. We have no space to reiterate our oft-used arguments, but we may, at least, urge and urge again that the only way of placing the Society on its proper footing again is, in some way or another, to sever it alike from Her Majesty's Commissioners and the local Fellows. The interests, especially in the latter case, are, we fear, too antagonistic for any satisfactory compromise to be attained which does not leave the horticulturists free to do the proper work of the Society.

If necessary or desirable the Society might co-operate with the Commissioners or the local Fellows in all legitimate work; but it must be independent, or it will end its days in hopeless disgrace. The horticulturists are taunted that they could not keep Chiswick or maintain the Society as a horticultural society without the aid of the local Fellows; the best answer to this that can be given is to ask the objectors to look to the balance-sheet and see what Chiswick earns, besides doing a certain amount of experimental horticulture, and what it costs. We believe that a thoroughly reorganised Society, truly representative of the horticulture of Great Britain, on a much more liberal basis than at present, could be made a success; but we do not believe that success is ever to be obtained so long as the present impediments hamper the Society. Who will deny that, even as things are at present, the horticulturists could not do all they do now, and more, too, if the Kensington Garden and its fatal associations were removed? How is this happy state to be realised? By the aid of Parliament, or by appeal to HER MAJESTY to grant a new charter. In one or other of these ways relief might be obtained. As it is, the existing Charter provides for the appointment of an arbitrator by the ATTORNEY-GENERAL. In the meantime, as time would necessarily be occupied in carrying out these proposals, or rather with a view to pave the way for them, the Council might, at the request of the Fellows, be asked to prepare a scheme, which while paying due regard to existing rights and obligations, should provide for the independent action of the local Fellows, so far as regards the garden at South Kensington, and for the entire control of all purely horticultural matters by the horticultural Fellows. That public opinion is becoming more accurately informed on the subject is evidenced by a letter in the *Pall Mall Gazette* of Monday last, which we regret that our space does not allow us to reproduce.

—— THE visitor on arriving at NICE may well imagine himself in another continent. On the road thither he may have seen Orange gardens with foliage of a blacker green than ever witnessed in home orangeries; he may, according to season, have seen fields of Tuberoses; hedges of Roses so full of bloom that the children pluck them as they pass, as if they were so many wild Roses. All this is surprising enough, but still it is European or Italian in character. But when the visitor sets foot in either of the two public squares of Nice, or rambles along the splendid esplanade facing the sea—the "Promenade des Anglais"—he sees before him the vegetation of Africa, of Australia, of Peru, and this not in isolated specimens, but in quantities sufficient to give a decided aspect to the scene; in fact, the European element is all but excluded. Our view (fig. 45) shows a street scene near one of the public gardens. Date Palms and Eucalyptus alternately form the street trees here; a little further on, trees—yes, trees with stout trunks—of Phytolacca occur. In the squares are Acacias and Eucalyptus of various kinds, together with Schinus Mulle, with its elegantly cut leaves, and in autumn its bunches of exquisitely coloured pink berries. We cannot now enumerate more; we have said enough to illustrate our remark as to the thoroughly extra-European aspect of the city; even the fine avenue of Planes in the older part of the town looks Eastern rather than Western. Some objections have been made to the Eucalyptus, on the score that it is not an ornamental tree. Tastes will differ as to that point, but every one will admit that the contrast between the pendulous slender Willow-like boughs of the Eucalypt and the sturdy rigid spreading leaves of the Palm, as shown in our illustration, is sufficiently striking.

—— The following are the names of the Council and officers of the ROYAL HORTICULTURAL SOCIETY for the current year, viz.:—Right Hon. Lord Aberdare, President; Henry Webb, Treasurer; Dr. Hogg, F.L.S., Secretary; the Earl of Mount Edgcumbe, Lord Alfred S. Churchill, Hon. and Rev. J. T. Boscawen, Sir Trevor Lawrence, Bart., M.P.; F. Campion, G. T. Clark, Colonel R. Trevor Clarke, Dr. Denny, William Haughton, W. B. Kellock, F.L.S.; Philip W. S. Miles, and Robert Warner, F.L.S. The Earl of Mount Edgcumbe and G. T. Clark, Esq., were elected at a special meeting of the Council, held after the adjourned annual general meeting, on the 10th inst., to fill the vacancies caused by the resignations of Admiral Hornby and Mr. A. Grote, F.L.S.

—— To Mr. SMITH, of Worcester, we are indebted for a spray of a new evergreen shrub offered by him under the name of OTHERA JAPONICA. THUNBERG, who was the original describer of the plant of that name, describes it as a shrub with cylindrical striated purplish branches, alternate stalked leaves of an ovate obtuse outline, leathery in texture and glabrous. The flowers are described as disposed in axillary tufts, and in the figure the stamens are opposite to the petals. The foliage of Mr. SMITH'S plant agrees fairly well with this description, the leaves being ovate-oblong, tapering at the base into a short red stalk, and somewhat abruptly acuminate at the apex. The colour is of a rich deep shining green above, much paler beneath, the margins entire or minutely serrulate, the texture very thick. The contrast of the deep green leaves with the reddish purple branches is remark-

able. We desire to speak with reserve till the flowers are forthcoming, but we have a very strong impression that Othera japonica (Hort. Smith) will turn out to be a Holly closely allied to the Japanese Ilex integrifolia. Whether THUNBERG'S plant is the same or not, is another question not so easily answered. At any rate those desirous of securing a handsome evergreen shrub should make enquiries about this one. As to its hardiness, we must also speak with reserve, though, judging from appearances and its native habitat, we have few misgivings on the point.

—— Mr. WINSTANLEY, of Blackpool, Lancashire, proposes to publish a series of diagrams representing the hourly variations in the AMOUNT OF DAYLIGHT at various stations. The measurements are effected by means of the agency of light on chloride of silver, the tint produced being in direct relation to the intensity of the light. The utility of this process is beyond question, and, taken in conjunction with observations on temperature and moisture, especially the moisture of the soil, may be expected to throw light on the growth of plants, the coloration of flowers, the ripening of fruits, &c.

—— We understand that Mr. BOWMAN, late of Leybourne Grange, Kent, has been appointed manager at Hylands Park, Chelmsford. We heartily wish this able cultivator every success in his new appointment.

—— At a recent meeting of the representatives of the principal SEED FIRMS of New York, Boston, Philadelphia, and Albany, held in New York, it was resolved, as a consequence of recent decisions in the States of New York and New Jersey, holding seedsmen liable for all damages happening to their customers by reason of failure of their crops which could be traced to the seed sold, that the seedsmen print upon their packets, bill-heads, and circulars a notice similar to the following:—"While we exercise the greatest care to have all seeds pure and reliable, it is hereby mutually agreed between ourselves and the purchaser of this packet that we do not warrant the same, and are not in any respect liable or responsible or the seeds sold by us, or or any loss or damage arising from any failure thereof in any respect."

—— We have on our table the first number (for January, 1876) of the *Illustration Horticole*, mainly edited by M. FOURNIER—a guarantee for botanical accuracy and scholarship. The plants represented are Odontoglossum Roezlii, tab. 228 (*Gardeners' Chronicle*, 1873, 1303, with a figure); Aralia elegantissima, tab. 229 (*Gardeners' Chronicle*, 1875, 224); Sonerila Hendersoni (Hort. Hend.), *Gardeners' Chronicle*, 1874, ii. 83—*à propos* of which M. FOURNIER indicates a curious analogy between Melastomads and Begonias, an analogy upon which, however, we fancy, too much stress must not be laid.

—— The HORTICULTURAL SOCIETY OF LIVERPOOL will hold its fourteenth exhibition of spring flowers in St. George's Hall on Wednesday, March 15.

—— At a meeting of the managers of the Royal Caledonian Horticultural Society, held on the 11th inst., THE NEIL PRIZE of the amount of £54 was unanimously awarded to Mr. ROBERT FOULIS, gardener to G. H. HENDERSON, Esq., Fordell, Fifeshire. Many of our readers may know nothing about the Neil Prize, and we may, therefore, state that the late PATRICK NEIL, Esq., of Canonmills Cottage, left £500, the interest of which was to be allowed to accumulate, and every three years to be awarded by the above-named Society, as trustees, to some distinguished botanist or horticulturist. Mr. FOULIS has received the award, on account of his being a distinguished gardener and a keen arboriculturist and geologist. He has been at Fordell nearly fifty years, and has had the management of the farm and woods, which are both very extensive, in addition to the garden.

—— In the Edgware collection of Orchids, belonging to the Rev. J. B. NORMAN, there is at present in flower a very beautiful variety of Lælia autumnalis. The labellum is of a pearly white, and the petaline segments are of the most brilliant purple-magenta colour. This is the finest variety we have ever seen.

FIG. 45.—STREET SCENE IN NICE.

Among the many spikes of Phalænopsis one may be noticed that carries its large individual flowers most majestically. The flowers are very large, nearly forming a circle, and of an unusually thick substance. It is a grand variety of P. grandiflora aurea, and its spike has eleven flowers open. There is also a fine spike of the rare-flowering Odontoglossum coronarium.

—— The GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY will hold a spring show in the City Hall, Glasgow, on March 29; a grand summer show on May 10, in the Crystal Palace Conservatory, Royal Botanic Gardens; and an autumn show in the City Hall, on September 12 and 13.

—— We have received a schedule of prizes, amounting to nearly £900, for the GRAND NATIONAL HORTICULTURAL EXHIBITION, to be held in the gardens of the Royal Manchester Botanical and Horticultural Society, at Old Trafford, from June 2 to 9.

—— SAXIFRAGA CRASSIFOLIA is flowering in the conservatory at Kew. Strong pieces were taken from the open ground a short time since, and with gentle heat have forced well. The leaves of several variegated Funkias have a very ornamental effect, and few things grow with less trouble. Veltheimia viridifolia is in bloom, without having been subjected to heat. It is often a favourite, though somewhat dull in colour. Rhododendron præcox is one of the best for forcing; it affords a good supply of flowers for cutting, and of a delicate blush colour. Triteleia uniflora is very pretty, though its alliaceous smell requires one to guard against bruising it. Dielytra spectabilis is one of the most graceful plants in habit, as well as delicate and beautiful in colour, that can be had in flower at the present time.

—— Mr. BULL had not long since, if he has not still in flower, a beautiful species of EUCHARIS, recently imported from the United States of Colombia, and which was supposed to be new. On flowering, however, it proved to be identical with Eucharis candida as figured by PLANCHON in *Flore des Serres*, though it is certainly quite distinct from the plant now everywhere grown for E. candida, and which appears to have been known as such from the first introduction of the plant. Here is a botanical puzzle, which has yet to be solved. Certainly the plant figured as E. candida by PLANCHON—if the figure be accurate, is not the plant usually grown as such, the latter having totally different bulbs—small, globose, short-necked, instead of oblong, long-necked—and distinct foliage, but is the plant now flowered by Mr. BULL. The garden candida, for which we have set down the provisional name E. paradoxa, seems rather a shy bloomer, and we have not seen flowers since we discovered the discrepancy above referred to, but we shall hope shortly to meet with it in blossom, and shall then return to the subject. Should any of our readers be able to send us flowering examples we shall be obliged. In the meanwhile, the following is a description of the E. candida of PLANCHON, as flowered in Mr. BULL'S nursery. The bulbs are tunicate, ovate-oblong, with an elongated neck, from which grows out with the flower-scape a solitary leaf having a longish, flat petiole and a broadly oblong-elliptic, acuminate, curved blade, the base of which is decurrent along the petiole, the costa being bluntly prominent beneath, the surface dark green, and about ten-ribbed. The scape is about 2 feet high, compressed, bearing an umbel of several flowers, surrounded by a spathe of four or five narrow, withering segments of unequal size. The flowers have a slender decurved tube, about 2 inches long, with a short, narrowly funnel-shaped throat. The perianth segments are lanceolate-elliptic, the three outer ones narrower, all gently recurved, and in this position measuring about 2 inches across. The corona is funnel-shaped, projecting (with the stamens) nearly an inch, six-parted, the lobes widening upwards to about the middle, where they suddenly contract into the short, awl-shaped filament, each crowned by a versatile anther, and somewhat shorter than the slender filiform style, with its scarcely dilated stigma. The flowers are extremely elegant in form. *T. M.*

—— Should the TAP-ROOT OF SEEDLING TREES be cut off when the seedlings are transplanted? Dr. GOEPPERT, in his *Ueber die Folgen äusserer Verletzungen der Bäume insbesondere der Eichen und Obstbäume*, answers this question with a decided and unqualified negative. But this appears to us to be a case in which practice will furnish a more trustworthy answer than theory. Doubtless if seedlings are transplanted at once to their permanent quarters, and the transplanting takes place before the tips of the roots have perished, it is advisable to retain as much of the root as possible; but this system cannot be adopted for fruit trees and forest trees which are transplanted two or three times. Perhaps the shortening of the tap-root is sometimes overdone. Still we believe there are few of our nurserymen who would guarantee the success of trees whose tap-roots had not been shortened. Dr. GOEPPERT contends that when the tap-root is cut off the general tendency is to form only superficial roots, hence such trees rarely attain perfect development. In support of this view he quotes an order issued by FREDERICK THE GREAT to his head gardener, SELLO, to the effect that more care should be exercised in transplanting trees, and particularly that the tap-root should be left intact. That monarch was doubtless a shrewd observer, but we should prefer the advice of a practical planter. We agree with a writer in the *Gartenflora* (JÄGER, we believe), that, in spite of its being "unnatural," it is absolutely necessary in many cases. Every one who has practical experience in lifting trees whose roots have been shortened more than once, is familiar with the fact that the roots will descend where there is anything to be gained by it.

—— A fifth edition of Mr. W. EARLEY'S useful little work, *How to Prow Mushrooms*, has been published by Messrs. BRADBURY, AGNEW & CO.

—— We have before had occasion to refer in terms of praise to the excellent CATALOGUES AND GUIDES to the DIFFERENT COLLECTIONS in the SOUTH KENSINGTON MUSEUM, and more recently to those describing the contents of the Bethnal Green branch. The food collection always has attracted a large share of attention, and the descriptive labels attached to each well-known article of diet have been noted for the instructive matter they contained. Though this series of labels did service for a length of time at South Kensington, the removal of the collection to Bethnal Green has been the signal for a new set to be prepared. These new labels are an improvement on the old ones, both on the score of appearance as well as for the verification of the matter, the whole being very clearly printed and the analysis given in a sharp black type. The labels are all of uniform size, 7¼ by 5½ inches, bordered by a red line. The common English name forms the heading, after which are the French, German, and Italian, and then the scientific name followed by the habitat of the plant, the part used, analysis, &c. These labels have, we believe, been drawn up by Professor CHURCH, of the Royal Agricultural College, Cirencester.

—— Although the MANNA OF COMMERCE is, as is well-known, a saccharine exudation from the stem of the Manna Ash (Fraxinus Ornus), we learn from the *Pharmacographia* that it was formerly obtained from the leaves of that tree. Previous to the fifteenth century the Manna used in Europe was imported from the East, and was not that of the stem. "Raffaele Maffei, called also Volaterranus, a writer who flourished in the second half of the fifteenth century, states that Manna began to be gathered in Calabria in his time, but that it was inferior to the oriental." At this period the Manna collected was that which exuded spontaneously from the leaves of the tree, and was termed Manna di foglia or Manna di fronda; that which flowed from the stem was called Manna di corpo, and was less esteemed. The Manna di foglia became quite unknown, so much so that a writer in 1770 questions its existence. This was owing to the introduction, about the middle of the sixteenth century, of the plan of making incisions in the trunk and branches of the tree—a plan which was at first opposed by legal enactments, but which, nevertheless, became generally adopted on account of the more copious supplies which the collectors were thereby enabled to obtain. The Manna Ash is a very ornamental tree, and deserves to be more frequently planted upon lawns and in pleasure grounds than it is at present. We observed a very handsome example last year in the grounds of Norton Priory, near Runcorn, Cheshire, which had apparently been proof against the action of the noxious gases from the neighbouring chemical works, which have wrought such havoc among the trees of that estate.

Home Correspondence.

Royal Horticultural Society.—At the adjourned annual meeting on the 10th I was greatly surprised to hear Lord Aberdare affirm that the non-election of the Council at the meeting of the 8th would not have affected its legality, and his lordship proceeded to comment rather more severely, as I think, on the action then taken, than was consistent with the rights of the Fellows. In the Charter I read (*Proc. R. Hort. Soc.* i. 522)—"The Fellows . . . on the second Tuesday in the month of February in every year," "such meeting to be called the annual meeting," shall meet, &c.; and that at such meeting "the Fellows then present" shall proceed to put out, and elect, &c. I need not trouble you by quoting the verbose text *verbatim*. In the new bye-laws I read (*Proc. R. H. Soc.* ii. 339)—"On the day of the annual meeting"—again in a preceding paragraph fixed as "the second Tuesday of February in every year"—"the ballot for the choice of Council, officers, and committee-men, shall commence at the latest one hour after the chair shall have been taken." One would think this was plain enough, and yet but for the action of independent Fellows, and, as Lord Aberdare said, "in spite of the Council"—if he still pleases so to designate it—this bye-law would have been broken. That the opposition party—of whom Messrs. Hardcastle, Slade, and Bury, having been councillors, must be credited with a knowledge of the bye-laws—should raise a quibble about "want of faith," is not so surprising, as no doubt they would gladly have laid hold and made use of any flaw as to the legality of the last election, which those who were present will remember they took care not to question. Really the officers of the Society should be a little more cautious. *One of the Rebels.* [The quibble about "want of faith" raised by the Kensingtonians was so ridiculous that we wonder at its being made in that quarter. Lord Bury, and Messrs. Hardcastle and Slade must have known that under no circumstances could they have altered the result of the ballot, no notice of their intention to submit other names for election having been given at the proper time. EDS.]

Exotic Animals Discovered in Kew Gardens.—From time to time various interesting forms of terrestrial worms and of insects are introduced, together with exotic plants, into this country, by means of the soil which accompanies the latter. The curious shy Testacella is an example of the kind, as well as the land-leech, Trocheta viridis. Following up a suggestion of M. Edmond Perrier, I have obtained, through the kindness of Dr. Hooker, live specimens of various South American and East Indian earth-worms removed from Wardian cases which arrived in Kew Gardens with growing plants in them. Recently a still more interesting form was found by one of the gardeners in the Fern-house, and forwarded to me. It was one of the land Planarians—a Bipalium—of more than 2½ inches in length, of a yellow-brown colour, with two longitudinal black stripes placed dorsally. It is probable that this is a new species of its genus. Such zoological waifs are well worth looking for, and in the instance of the earth-worms have furnished to M. Edmond Perrier, in Paris, material for most valuable anatomical memoirs. The curious centipede-like worm, Peripatus, should be looked for in vegetable mould or rotten wood from the Cape, or from New Zealand, and a specimen would gladden the heart of any zoologist. Such kindly services can botany of her great abundance render to her sister science. *E. Ray Lankester.*

Hardy Palms and Other Plants.—Mr. Owen Lloyd, writing from some part of Wales, I suppose, speaks of the hardiness of different plants in a very different way from what I should do in this part of Yorkshire. Aralia Sieboldi and Eucalyptus globulus are certainly not hardy here. They would be killed to the ground about every other winter. I think that the Aralia might possibly be hardy on the coast of Yorkshire, but not inland; but Chamærops Fortunei, or excelsa (are not C. Fortunei and excelsa the same sp.?) [yes], is perfectly hardy here. A plant on my lawn has been there twenty-five years without any protection. The winter of 1860, which killed Hollies and Oaks in this neighbourhood by thousands, did not injure the Chamærops. The last week of 1874 was very severe here. I had about ninety seedling Chamærops in small pots. They were frozen quite hard, roots and all, for a fortnight. Three or four of them were killed, about half a dozen more were slightly injured, and the rest were not a bit the worse. I may safely say, therefore, that this Chamærops is quite hardy

here. Chamærops humilis is not so, I believe. There was a question a week or two ago about the hardiness of Veronica Andersoni. It has been in flower all the winter at Scarborough, and is quite hardy there, but is tender here. The same may be said of many other plants, such as Escallonia macrantha, the Hex, Arbutus, Japan Spindle, &c., which are hardy near the sea, and not so inland. Can any one tell me why they are so? It is not because the frosts are less severe; I have known frosts on the coast quite as severe as any inland, yet these plants were uninjured. It must, therefore, be that the sea climate alters the constitution of the plants. *C. W. Strickland, Hildenley, Malton.*

Black Holly Berries.—I am much obliged to Mr. Reeves for his suggestion, but feel very certain that the berries I instanced were not of last season's growth, since when I came to Liss early in July there were not any berries remaining on the tree. It is a somewhat remarkable tree, for it overhangs the footpath, and, being enveloped by Ivy, it forms quite a green canopy. We have named it the "Umbrella tree," and have often taken shelter under it when caught in a shower of rain in our way to or from Berry Grove to the station. As I generally pass it twice or thrice a week I feel sure that the black berries were of the same growth as the scarlet, besides which there were not only clusters of black on the same spray as the scarlet, but some clusters were composed of both, the lower half of the bunch being black, and the top coral. I want to know if it is usual for Holly berries to get frost-bitten? A gardener at Liss (as I before mentioned) says it is often the case, and a gentleman here, who saw the berries, confirms his opinion; but I never heard of any frost, however severe, injuring Hollies before, and I cannot understand, even if it were frost, how its effects were so distributed and yet so partial. There were black clusters on the top of the tree and black clusters at the less exposed sides, peeping out from the shelter of the dense mass of Ivy leaves. The tree itself is in a rather protected situation, so it seems strange it should have been frost-bitten when other Hollies in bleaker spots escaped. Can the Ivy have influenced in any way the colour of the berries! There are a profusion of Ivy berries on at present, and I shall, if at Liss, watch to see if they show any trace of red when ripe. I know that Holly berries will in some seasons remain on the tree until the next season's fruit has ripened—a tree on my lawn at Hambledon often had red berries and flowers on it at the same time. *Helen G. Watney, Liss, Hants.*

Pyrus domestica (the True Service Tree).—From my own experience I can confirm the statement of your correspondent, "R. E.," that not many nurserymen are acquainted with this tree, and in its place substitute Pyrus Aria, Mountain Ash, and other things totally different. Aria Theophrasta is probably a flight of imagination by some aspiring nurseryman. I have obtained the genuine tree, P. domestica, from Messrs. J. & C. Lee, Hammersmith. *G., Bath, Feb.* 9.

—— The question of your correspondent, "R. E," as to the above, in the *Gardeners' Chronicle* of the 5th inst., not having yet been answered, I may say that I know the "Aria Theophrasta" there alluded to, and believe it to be really a variety of Pyrus Aria, the White Beam; it grows freely budded on Mountain Ash. The only nursery I have known or heard of as having Pyrus domestica true, is Mr. Richard Smith's, of Worcester; and I believe the first place where it was successfully propagated was at Hanley Castle, near Bewdley, viz., by marching, after several fruitless attempts to get it by grafting. I have been told that most of the specimens now growing wild in this country are in or about Bewdley Forest. Was it not figured and described in the *Gardeners' Chronicle* about twelve or eighteen months ago? *J. C. M.* [Yes: see vol. i., 1874, p. 283. Eds.]

Anæctochilus Dawsoni.—Seeing Mr. Ollerhead's article on Plumbago rosea and its lasting properties when cut, I cannot help saying a word or two in favour of this charming plant. A. Dawsoni is not sufficiently appreciated, not only for its beautiful foliage all the year round, but for the grand display of exquisite white flowers which it makes. It has bloomed with me from November until now, varying from twenty to thirty-three flowers on a spike, and when cut it will last a fortnight in a fresh state—a matter of great importance to gardeners. A bed 4 feet wide and 18 feet long was made and planted last March with something over 1000 plants, and the sight of them is one not often to be seen, as the growths are strong, which bids fair for a good display next Christmas. The foundation of the bed is made of ornamental blocks of Bath stone, which the roots cling to like a burr. Care is taken to fill up the crevices solid, with a mixture of good loam, peat, crocks broken small, with sufficient sand to keep the soil open and sweet. I am sure with an equal number of Goodyera discolor a succession of white flowers can be had at least for six months without much trouble. It is the wish of my employer (W. H. Michael, Esq.), who takes a great interest in horticulture, to get all the best sorts of Anæctochilus and plant them out: we have A. Lowii doing well, though most, if not all gardeners, grow it under a bell-glass, also Patola, ordianus, argenteus, and intermedius; and when I am in possession of Veitchii, xanthophyllus, and others, the bed will be extended the whole length of the house, which is a lean-to—a low house about 32 feet long, in which we grow Phalænopsis. The sight a short time since presented a striking appearance when a few of the Phalænopsis were in bloom, although I am sorry to say the flowers last but a short time, as the fog has been very thick on several occasions lately, and has a very injurious effect not only on the expanded blooms but on the buds. *F. Newman, Cholmeley Park, Highgate.*

Lycaste Skinneri.—A plant is blooming in Mr. Michael's collection with three flowers on one spike. I think it it is a very rare occurrence, and worth making mention of. *F. Newman.*

Cropping Vegetable Ground.—Now that the time is again coming on for sowing and planting main crops of vegetables, it would be well if some of your experienced correspondents would give their opinions as to the direction in which the cropping should run across the quarters. I know that in most gardens lines of crop run from north to south, and admit that this is best for early crops on south borders, but I doubt whether it is wise to carry it out systematically all over the garden. In warm sheltered situations it appears to be of little consequence, but in exposed gardens, where there is little shelter from the prevailing south-west winds, it is very different. I have always found tall crops to stand best, and particularly Peas, when the rows were running as much in a westerly direction as possible. Many gardeners, I have no doubt, have good reason to look with much apprehension to the annual gales which in some situations do such a great amount of damage. In such situations I have found tall Peas and Scarlet Runners very strongly staked have a very decided effect when the rows were equally scattered all over the garden, and to procure this shelter as early in the season as possible the rows may be staked as soon as sown. For flower borders, where it can be adopted, rows of Sweet Peas, Canary Creeper, or a mixture of the two, &c., have the same desired effect. Rows of these things got up for shelter should have very liberal treatment. It is a very good practice to sow in trenches with a few inches of manure at the bottom; this prevents the crop suffering from drought during dry weather, and ensures a more lasting supply. *J. Taylor, Isel, February* 11.

The Wimbledon Gardeners' Library.—Allow me to thank Mr. Bennett for the kindly feeling expressed by him for the Wimbledon gardeners, and to say that matters are progressing satisfactorily. A good library of useful works appertaining to horticulture will shortly be purchased, as subscriptions are readily and liberally forthcoming. Many of our horticultural authors have promised or sent their works, for which the members are very grateful, and fully appreciate the kindness thus bestowed on them. On Thursday evening last week the first meeting was held in the Lecture Hall, when Mr. Ollerhead explained most fully the objects they had in view, and the promising success that was likely to follow his exertions. It was resolved that at the next meeting, on Thursday, February 24, a paper should be read by Mr. Ollerhead, after which Mr. Moorman would bring before the members Mr. Hibberd's lecture on "The Fallacies of Fruit Culture," which was reported in your last. One of your contemporaries having expressed its views on the subject, it will form an admirable subject for discussion; and as all gardeners are more or less connected and interested in this popular branch of the craft, a humble but spirited discussion may be expected, and to which all interested are invited. *J. W. M.*

Glasgow and West of Scotland Horticultural Society.—Your kind report of our winter show was under consideration at a meeting of our directors, and I was instructed to draw your attention to the paragraph—"The new directorate purpose to hold three great shows, of which this was the first." The exhibition of January 4 and 5 was neither a show belonging to last or to the present year, but an attempt, which was most successful, so far as the turn-out of plants and flowers could make it so, to introduce a new feature in horticultural exhibitions. This year we are to have rather an extra display. Our spring show comes off on March 29; summer one May 10, when a magnificent cup (the present of A. B. Stewart, Esq, of Rawcliffe) will be open to all for competion; and in autumn, September 12 and 13, we shall have a two days' show. I enclose you a copy of our prize schedule, from which you will see that we devote the respectable sum of £567 5s. as prize money. *Francis Gibb Dougall, Secretary.*

Pyrethrum Golden Gem.—I wish to say a word or two about this, which I find to be a real gem; it grows well in all situations, particularly on a sunny bed or border. It grows from 9 to 12 inches high, branching well from the base upwards. The leaves are brighter, larger, and more deeply cut than the Golden Feather; the flowers are large, double white, and it continues in bloom the whole of the summer. It comes quite true from seed, and if sown now will be ready by bedding-out time. I have also grown it in pots for the decoration of the greenhouse and conservatory, where it is very effective. *W. S. A.*

The Oxford Tom Pea.—This fine old Pea appears to have been a purely local variety (or, at least, as far as my knowledge of it extends), and now it seems to have faded away, even where it was known. I first saw it growing in a garden in the east of England thirteen years ago, and on inquiring what the variety was the gardener told me it was "Oxford Tom," and that he had grown it for many years. It grows to the height of 7 feet in good soil, and yields an abundance of large and long pods well filled with giant Peas, which, when cooked, are of a delicious flavour. The height to which it grows would not recommend it to small gardens; but in large gardens, and where sticks are readily obtained, it is a good Pea. In the garden above referred to this variety was planted in May, placing the Peas at 3 or 4 inches from each other, and when 2 feet high they were stopped, which caused them to branch and well cover their stakes. I have never seen it in any of the metropolitan or provincial seedsmen's catalogue (excepting those of the eastern counties). I last saw it in Mr. Ewing's of the Eaton Nurseries, near Norwich, and on writing to a friend some five years ago respecting it, he wrote me saying it was, he thought, gone out of date, as he could not get it true anywhere in his neighbourhood. As the Pea-sowing season is coming on, perhaps some of our readers in the east or elsewhere may be able to bear me out in the opinion I have formed of it; and, if it is still in commerce, say where it is to be obtained, as it is well worthy of a place in vegetable collections. *J. Batters, The Gardens, Chilworth Manor, Romsey.*

Veronica Andersoni.—We have a number of shrubs of both the green and variegated varieties planted out in the shrubberies here. They are all about six years planted, and some of them form large bushes, from 3 to 4 feet high. The winter of 1873 was very mild, even for this locality; we never had more than 4° or 5° of frost all the winter, and both varieties flowered abundantly from November to March. The winter of 1874 was mild, until February, 1875, when we had some sharp frost, the thermometer registering on two or three occasions 9° or 10° of frost. Veronica Andersoni flowered freely until the frost came, but after that we got no more flowers that season. This year we had hard frost and snow early in December, and in consequence we have had no flowers at all, and the foliage has also been very much disfigured. I find in my experience that Veronica Andersoni will stand 5° or 6° of frost without being much injured; but if the thermometer falls 8° or 9° below the freezing point it will not flower, and if there is damp or snow the foliage will suffer also. The variegated form is not quite so hardy as the green one. Escallonia macrantha grows and flowers freely with us, and Coronilla glauca, which is generally considered a greenhouse subject, has been planted out for several years, and usually flowers abundantly during the early spring months. Our soil is a dry, calcareous loam, and is favourable to the growth of many tender plants which would not succeed on wet clay soils, even if the climate were as mild. *H. Hamill, The Gardens, St. Andrews, Milltown, Dublin.*

Vines Breaking Slowly.—In my experience I have never found Vines such a length of time breaking as they have been this year, and that is not the only fault; I have found in several cases, in addition to my own, that the fruit, when it does show, is a long way up the shoot, instead of being three or four leaves up. But the points I wish to raise are these:—First, the cause of the Vines not breaking freely—is it because we have had so very very little sun since last October, or is it owing to the enormous amount of rain and dull weather we had during last summer? Second: after the Vines have broken the shoots have been minus of fruit, and where they have shown, as I have said before, they have been too far up the shoot to please me, and a great many of the bunches have gone right away into tendrils with just one solitary flower on their ends; is it because of the dull weather we had just at the time when we wanted nice warm weather to mature the wood and throw up the fruiting buds nice and plump? I noticed when pruning the

early Vines that the buds were very irregular in size. I would also like to ask the opinion of some one more practised in Grape growing the cause of bunches running to tendrils? A small vinery came under my notice the other day where the greater part of the house was nothing but tendrils. I believe the main cause to be too much heat at first starting. *H. W. T.*

Veitch's New Protecting Broccoli.—Many facts have been recorded in your columns concerning the valuable properties of Veitch's Autumn Giant Cauliflower, which I can fully indorse. A variety of Broccoli partaking of a somewhat similar character was also introduced recently by the same eminent firm under the above name, which with us has been very fine, affording a good successional supply of fine close compact white heads, of delicious flavour, during December and January. Its constitution appears to be very hardy and robust, and it possesses more protection in the way of leaves as a covering than any other variety which comes in at this season with which I am acquainted. Altogether it is a most commendable mid-winter variety, and should be grown largely for winter use everywhere. *G. T. Miles, Wycombe Abbey.*

Gladiolus.—May I suggest that the long "i" of Calliope is no standard in this matter? Gladiolus is a late Latin diminutive of "Gladius," and all the vowels are short. The accent should be on the first syllable—"Glă'diōlus," or, if you prefer to write it so, "Glăd'iŏlus." *T. F. R., Feb.* 10. [Why not pronounce it as if written Gladjŏlus. EDS.]

Limestone as Fuel.—Touching the question of extracting heat from chalk, will some one explain this?—It is well known in the brickmaking trade, that bricks made of clay alone, require double the quantity of firing to burn them into stocks, that bricks made of clay and chalk, in the proportion of three of clay to one of chalk do. *A Brickmaker.*

A Hardy Evergreen Creeper: Stauntonia latifolia.—A few weeks since I noticed an enquiry in the *Gardeners' Chronicle* for the best hardy evergreen creeper for a garden wall. Of all hardy evergreen creepers, Stauntonia latifolia is the best; there is no hardy creeper that combines so many advantages. I have it growing on the north, south, east, and west walls of my house—it does well on all; it climbs to a great height—the front of my house is covered with it; its growth is most rapid—the shoots of the old plants are annually from 10 to 12 feet; the foliage, in size, texture, colour, and freedom from all insects, is everything that can be desired. Allowed to grow in its own natural way, and not tied in or cut up, as is generally the erring treatment creepers receive, the grace and elegance of natural drapery formed by its shoots cannot be exceeded. The old plants send forth thousands upon thousands of flowers, but they are small, not conspicuous for colour, but the scent is of the nature of and superior to that of fine Orange blossom. The whole air is perfumed by these plants, and even the rooms of my house, if the windows are only left open, are also perfumed. I have only in the open air been able to fruit it twice, but such fruit! I send you a coloured sketch made by my sister, just as the fruit was in perfection, which gives an exact idea of its size, shape, and colour (fig. 46). The fruit on another bunch was certainly larger, but only one fruit on the bunch was perfect. You possibly may be able to give an outline of the perfect bunch to your readers. No one ought to be without this creeper who has a dwelling of stone or brick, which he can adorn with Nature's finest carvings and paintings—creeping and flowering plants. As to plastered painted villas, they are modern abominations, which no wise man would live in if he could possibly avoid doing so. There is another creeper, Lardizabala biternata, which I purchased many years since of the late Mr. James Veitch. I planted it in a conservatory, but its growth was so rampant that I was compelled to root it up; the foliage was very fine, the flower insignificant. I have within the last four years planted it in the open air, and it is now growing well; it is evidently quite hardy, and is certainly a most desirable creeper, but, as far as I can judge, it does not equal the Stauntonia. What years of growth may do I cannot say; possibly some of your correspondents may have tried it, and had the plant growing for many years in the open air, and can speak of its mature effect, and if, having fruited it, the fruit is worth eating, as in its native place the fruit is eaten. *K. K., Taddyforde, Exeter.*

State of the Weather in January at Gordon Castle, Banffshire.—The temperature of the past month has been very much out of its usual character. The consequence of this unusually mild period is premature excitement of the sap and early swelling of fruit buds, by reason of which, if not checked soon by sharp cold weather, the crop of fruit in the open air will have but little chance of escaping destruction before the advent of summer. The peculiar characteristics of the month past have been frequent high gales of wind, principally from the south and south-west, followed by a dry and clear atmosphere; the rainfall for the month being only .77 inch. Dust has been blowing off the roads for the last two or three days. There was frost on six nights during the month, but being of so short a duration it had little effect in checking the flow of sap, as the enclosed sample will show. Snowdrops and Crocuses were fully expanded in the open border on the 27th, and Jasminum nudiflorum was a mass of blossom during the greater part of the month. *J. Webster.*

Forestry.

THE various operations of planting should now be prosecuted with all diligence; the sooner all plants are put into their permanent situations the better; further delay may enable them to escape certain evils, but the advantages of early planting generally outweigh them. The term "planting" is a very general one, but the various operations performed under that term are widely different, both in kind and quality.

Nothing does so much to encourage landed proprietors in planting than ocular demonstration of the progress and thriving condition of the young plantations. When all other arguments fail this stands good. In order to secure the best results at the cheapest rate it is important to observe and attend to the following conditions in planting moorland generally:—

1. Use small rather than large plants, say, Larch, one-year seedlings one-year transplanted, and Scots Pine, one-year seedlings twice transplanted; Norway Spruce, two-year seedlings twice transplanted; and hard-woods of their various sorts, strong, branchy plants, rather below than above 2 feet high.

2. All plants, whether hard-woods or Coniferæ, to be grown in nursery ground of a dry and sandy quality, and never upon clay.

3. In planting in the forest, strict attention should be paid to plant all fast-growing plants, such as Poplar, Ash, Spruce, and Douglas Fir only in rich and deep soils, and Beech, Birch, Scots Pine, and Larch upon poorer and less fertile parts, not that the latter disagree with good soils, but that they grow and succeed upon it when the former fails, which leads to disappointment—a result that should be guarded against.

4. In removing the plants from the nursery to the enclosure for planting, every precaution should be used to avoid damaging either the stems or roots of the plants, the slightest bruise of the former or fracture of the latter imperils the life, or, at least, impairs the health and vigour of the plant. The slightest damage to Conifers causes the fluids to coagulate, and thereby obstruct the entire circulation in that part of the plant. They should, therefore, be gently handled, and removed with as much earth adhering to their roots as possible, or, at least, practicable.

5. Before removal of the plants to the site of the new plantation a piece of ground should be duly prepared for earthing the plants into on their arrival. If an arable field or unoccupied piece of garden ground is near and available, the plants may be earthed into it with profit and advantage; but if no such suitable ground is near by it must be prepared, and no hesitation felt regarding the expense of so doing. In preparing the plant-bed the surface turf should be pared off and thrown aside, and the soil thoroughly trenched over to the depth of 16 inches or thereby, in the doing of which all stones, roots, &c., must be carefully taken out, so that nothing may interrupt the expeditious earthing-in of the plants when they arrive. The earlier in the season the plant-beds are trenched and prepared the better, as the soil exposed to the influence of the frost is thereby pulverised, and therefore better adapted for the purpose.

6. In lifting the plants out of the nursery they should be carefully tied in bundles of 100 or 200 in each; and on arrival at the plant-bed every bundle should be loosed, and the plants spread carefully, equally, and thinly along the lines; as carefully, indeed, as if they were to remain for many months, which, though not intentionally, they sometimes do, by reason of storms, which may at any time occur during the planting season. Plants are not properly earthed-in unless the soil and the roots of each individual plant are in contact, and this implies the necessity of laying them very thinly in the lines.

I have just removed from the nursery about half a million plants, and have them all ready earthed in awaiting the planters. By clearing the nursery of the plants it enables the ground to be dug over, manured, &c., preparatory to the succeeding crop being put in. Being exposed to the ravages of game to a considerable extent, it would be hazardous to leave the plants in the plant-beds unprotected, and therefore I have run a bale or two of wire netting round each bed. The netting is merely put up in a temporary way, supported on small stakes, and the kind used is 30 inches deep, 1½-inch mesh. I do not cut the netting to suit the enclosure, as this would injure it for future use, it being in bales of 50 yards lineal each, and the price per yard of what I use is 9*d.*, plain japanned (not galvanised) iron.

7. In planting moorland I pare off the surface turf, whether grass or heath, and as the planting is done by means of half-worn garden spades, little inconvenience is experienced in removing the turf, although it increases the expense of the work of planting about one-fourth. The great benefits of paring off the turf are that it enables the roots of the plants to be put into the active soil without burying the stem of the plants too deep, that the herbage is kept down till the plant makes headway above it, and that the lower branches upon which the roots of the plant so greatly depend for their development are thus preserved from decay.

8. I prefer planting, if not in groups, at least upon that system, by selecting the various kinds of soil suitable to the different species of plants, allocating a preponderance of the kinds best adapted to each, and only mixing others amongst them for subordinate purposes. As a rule, however, I prefer planting moorland with Larch and Scots Pine in equal proportions, and soft boggy places with Norway Spruce, and a mixed marginal line around the whole plantation of Beech, Birch, and Mountain Ash.

9. When the plantation is extensive—say 100 or more acres—I plant about 4½ feet apart, but in planting small groups, shelter belts, &c., I sometimes plant as close as 2½ feet apart, but more commonly 3 feet apart. The closer the planting the more expensive of course, and the sooner they must be attended to; but there is compensation for all this in the earlier and withal better crop produced.

10. Pitting, as done in the usual way, should be avoided in moorland planting, as the pits at best are not only expensive, but form basins or receptacles for water, which tend greatly to sicken and perish the plants. As a substitute for pitting, the planter's foot-pick should beused for loosening the ground, and with the common spade a hole sufficiently large should be made to receive in a proper manner the roots of the plants of whatever species. I find on extensive experience that planting done by means of the planter's foot-pick succeeds much better, and is much less expensive, than that of pitting. The writer will be glad to give special details of the manner of doing the work to any one who may wish it, by applying to him privately, as he is thoroughly convinced of the superiority of the system over all others he has seen or heard of. *C. Y. Michie, Cullen House, Cullen, February* 7.

Reports of Societies.

Royal Horticultural: *February* 16.—David Wooster, Esq., in the chair. The Chairman read a letter received by the President, Lord Aberdare, from the Science and Art Department, respecting the approaching loan exhibition of scientific apparatus at South Kensington, and requesting those Fellows of the Society who may feel disposed to assist the undertaking to apply at once at the South Kensington Museum for the necessary forms of application.

The Rev. M. J. Berkeley announced the few awards made by the Fruit and Floral Committees, and commented on two statements made in last week's *Saturday Review*—one of which related to the work of the Society, the other to the alleged non-payment of the prize-money—the truth of both of which he entirely denied.

The Chairman was much pleased that Mr. Berkeley had corrected the erroneous statements made by the *Saturday Review* with respect to the scientific work of the Society, and hoped that journal would have the good feeling to express its regret for having made such objectionable statements. The scientific work of the Society was silently and successfully being carried on, notwithstanding the great difficulties which lay in the way of such work, and he considered the services cheerfully rendered by the three committees was of the utmost value to horticulture.

Mr. Wooster then commented upon the recent cor-

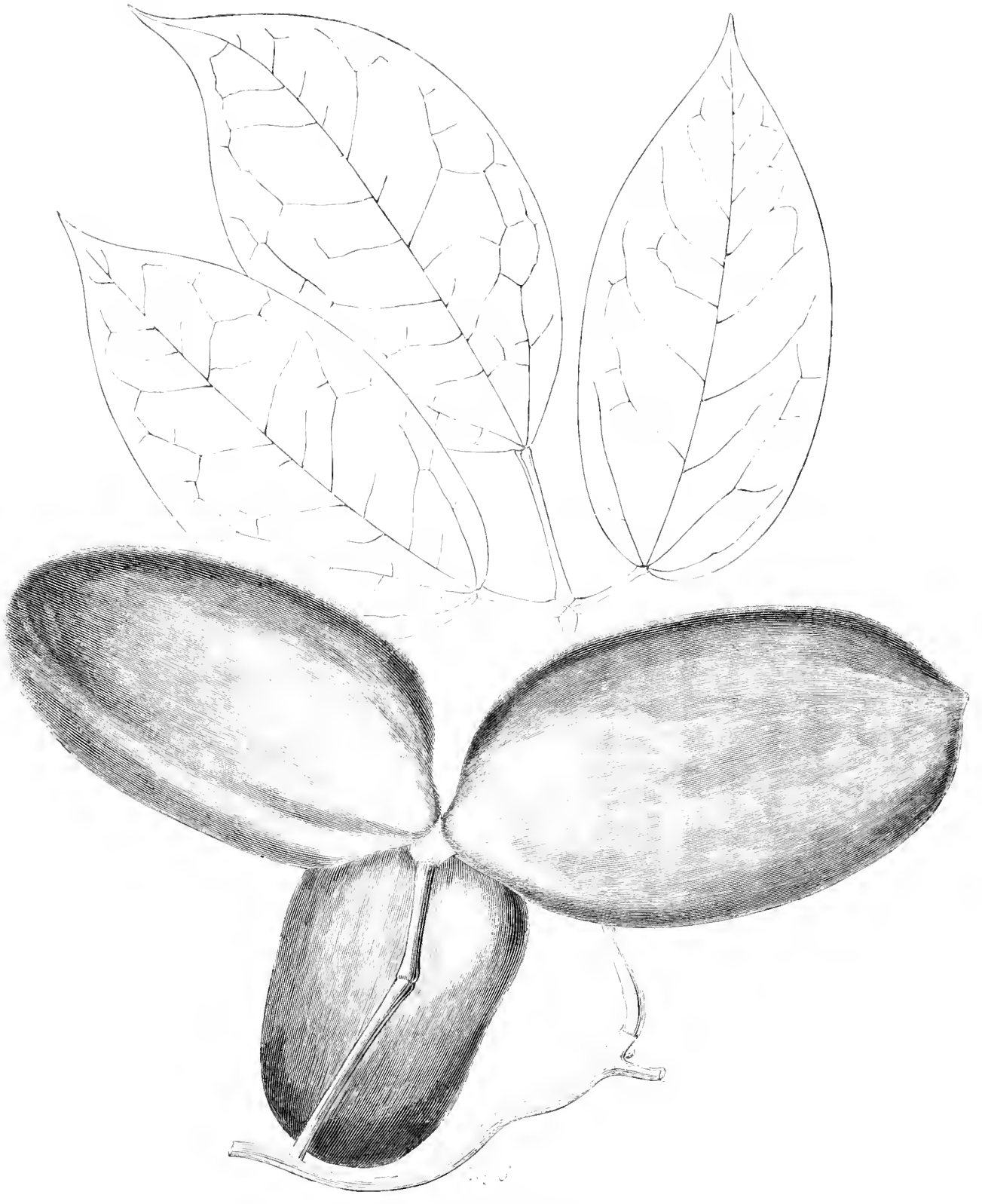

FIG. 46.—LEAF AND FRUIT, STAUNTONIA LATIFOLIA (NAT. SIZE).

respondence in the *Times* and in this journal with reference to the condition of the trees in the public parks and promenades, and remarked that the Plane tree had been said to be the only one that was suitable for planting in towns. But this was quite erroneous, as an examination of the trees in the various parks would show that, besides Planes, the Lime, Elm, Spanish and Horse Chestnut, various species of Cratægus, the Ailantus, the Tulip tree, Rhus, Kolreuteria, Maple, Laburnum, and several species of Pavia, were equally available and appropriate. There were besides these numerous flowering shrubs which do well in towns, and with proper treatment and careful selection beautiful scenes might be made in the parks throughout the year.

SCIENTIFIC COMMITTEE.—A. Murray, Esq., in the chair.

Phylloxera.—Dr. Masters showed specimens of Vine roots, from the neighbourhood of London, in which not only Phylloxera but Acari were found. In the first instance no Phylloxera was found, probably owing to insufficient examination and to a different appearance to what is usually presented by infested roots—the peculiar tubercles on the root-fibres being in fact absent. On seeing the living Vines some days after, numbers of Phylloxera, dead or dormant, of a yellow colour, were seen, and, in addition, living white mites. Desirous that the specimens should be examined by competent entomologists, specimens were sent to Mr. A. Murray and Mr. MacLachlan, whose several reports, which are to be considered as provisional only, are appended.

Mr. Andrew Murray read the following note on the specimens submitted to him. They had all the appearance of roots suffering from the Vine disease, caused by or attributed to that insect, the swellings being present, although in smaller numbers than usual. There would seem, however, to be some change taking place in its characters. Originally it was characterised by a black putrescence under the outer layer of bark of the root. Now this would appear to be no longer the case, at all events universally. In reporting on some Vine roots submitted to him in 1873, M. Signoret described the appearance as now assuming the form of a whitish deposit under the bark, with, in certain rootlets, a

crystalline aspect, as if amylaceous, while in others it took a calcareous aspect, such as could be produced by passing under hands previously whitened with plaster or chalk. The former was the character of the roots sent to me by Dr. Masters. The deposit was along the cracks, and no doubt was a dried exudation of sap. It was very visible under the microscope when first examined, but after a night's steeping in water it was still there, although apparently in less quantity than before, so that I imagine it could not be entirely either sugar or starch. The determination of its constituent elements, however, is out of my department.

I found, however, no Phylloxeræ on the roots. These begin to stir in February and March, and they might, or might not, be out at this date. Their not being found by me, therefore, is neither for nor against their future appearance, but it may be right to remind cultivators that, notwithstanding all that has been said about the Phylloxera, and all that has been observed and proved regarding it, there are still entomologists of eminence who maintain that it is not the cause but a sequence of the Vine disease.

M. Signoret, a very eminent entomologist, and the first authority on the order to which Phylloxera belongs, maintains this. In September, 1874, he repeated his often previously expressed belief, and added that he had in his house a Vine on which he had made his first studies of the Phylloxera in 1869, on which he every year put all the Phylloxera that were sent to him, both those of the roots and those of the galls, and that Vine still lives, in spite of the Phylloxera which are on its roots; that it is not very fine so far as regards the length of its shoots, but that it is very green, and that it is not astonishing that it is not very rich in wood, seeing that for five years it has been in the same earth and the same pot. As for me, I think the facts are too strong to be disputed that it is the cause of the mischief, but it is never wise to shut one's ears to objections; and, as from the isolation of our Vines and their protection from the disturbing climatal influences to which Vines on the Continent are exposed, we are in a peculiarly favourable position for solving that question at least. It seems to me, therefore, that it is peculiarly within the mission of the Scientific Committtee to encourage observations in this direction.

But although I found no specimens of Phylloxera, I saw several individuals of a minute mite which was described a few years ago under the name of Tyroglyphus echinopus of MM. Fumouze and Robin. Mr. Riley and M. Planchon found another species of Tyroglyphus associated with the Phylloxera in America, and satisfied themselves that it preyed extensively upon the Phylloxera; and when Mr. Riley announced this discovery, he received applications from some of the large Vine growers in France to send them a supply of it, in the hope that it might assist in exterminating the Phylloxera. This was a very unnecessary application, for they had already in France, commonly associated with the Phylloxera, the species which I found on these rootlets; and the one should certainly be as good as the other as an exterminator, if that class of mites really did feed upon other insects such as the Phylloxera, but M. Planchon and Mr. Riley's statement to that effect has been received with some doubt by French entomologists. I have not seen M. Planchon's statement, but I observe that my friend Mr. Riley does not say how he ascertained the fact, but he makes the assertion very broadly, and as he is well-known to be a careful and accurate observer any statement of his is entitled to great weight; but like all of us he is liable to error, and may have been deceived (as sometimes happens) by abnormal conduct under abnormal circumstances. There are many instances of insects that are not vegetable feeders having eaten their neighbours when shipwrecked into an entomologist's box. Dr. Fumouze, who has studied the habits of the Tyroglyphi more closely than, perhaps, any other living naturalist, objects to the idea as being opposed to the habits of all other Tyroglyphi, which never attack living animals; and further, because, although not rare in France on Vine roots attacked by Phylloxera, there never has been any appearance of their number being diminished by them (see *Ann. S. Ent. Fr.* 1874, Bull. 98). It is, moreover, more specially opposed to the habits of the section of the Tyroglyphi to which it belongs, for that section feeds exclusively on vegetable food.

Some years ago (1867) Professor Claparède, of Geneva, proposed a new genus for a species of Tyroglyphus, which he named Rhizoglyphus. I do not think he caught the distinguishing characters, but his species belonged to the section in question. There are two sections of Tyroglyphi endowed with different habits: the one feeds indiscriminately on decaying animal and vegetable matter, the other solely on vegetable matter. To the former belongs the cheese mite, which feeds both on decaying cheese and rancid flour, and such aliments—being called the cheese mite when found in the one, the flour mite when met with in the other. That section has the legs terminated both by a claw and a sucker. The other section, which in a work now in the press I propose to keep apart under Claparède's name of Rhizoglyphus, has the legs terminated only by a claw. Every known species falling into this section (excepting Planchon and Riley's) feeds upon more or less decaying roots, such as Hyacinth-bulbs, Vine roots, &c. I would, therefore, wait for further confirmation of their carnivorous habits before adopting that conclusion.

I would also suggest that those who fear that their Vine roots have been attacked by Phylloxera should have them examined by some competent entomologist before coming to the conclusion that it really is so, at all events in all cases where the Phylloxera has not been seen on the leaves. It is very possible that Vines may have been condemned in some cases on the strength of the Vines suffering from decay of the roots, accompanied by the presence of nearly invisible animalcules, supposed to be Phylloxera, while in reality the Phylloxera may be this little mite, and the decay only one of the many ailments which Vines are heirs to.

Mr. MacLachlan's report was as follows:—

"The Vine roots have on them a form of Phylloxera vastatrix.

"I first of all looked over the root-bark with a pocket lens, but could see nothing. Then I spread the dust on a slide, and put it under the microscope, with two-thirds and a quarter powers. I soon discovered Phylloxeræ, but not many of them, and all dead. One that lay on its back showed the rostrum beautifully under a quarter-inch. But in addition to these, and more numerous, were living Acari, that appear to me to agree with Tyroglyphus Phylloxeræ, as figured by Riley, and which he states to be an enemy of the Phylloxera."

Dr. Masters exhibited additional specimens, showing both the dead or dormant Phylloxeras, in considerable numbers, and also the little white mite above referred to.

Tubercles on the Roots of Leguminous Plants.—Dr. Masters exhibited a drawing showing the appearance of a microscopic section of one of these tubercles, from which he concluded that the bodies in question were rootlets arrested in their development in length, but swollen and hypertrophied. The cells in the interior are filled with peculiar crystalloid masses, probably similar to aleurone. Rev. M. J. Berkeley referred to a paper of Woronin on these bodies, and stated that he (Mr. Berkeley) was satisfied that the growths in question were, as stated by Dr. Masters, modifications of the rootlets, though by some they had been supposed to be produced by the larva of Citonia lineata, and by others to the attacks of fungus.

Insects Injurious to the Cocoa-nut Trees.—Mr. A. Murray, to whom the specimens referred to had been sent, read the following letter addressed to Dr. Masters:—

"*Kelvin Grove, Colombo, Ceylon, November* 21, 1873.—I send you by the mail which takes this note specimens of what I call the Cocoa-nut tree moth, with some of its grubs and chrysalis, in a small phial in spirits, all of which I trust will reach you safely. This tiny nocturnal moth is a great enemy to the fruitfulness of the Cocoa-nut Palm, and was noticed by me and others here in Colombo for the first time some six or seven years ago. The moth lays its eggs on the under-side of the divisions of the Cocoa-nut leaf, and when the small grubs emerge from these they begin to eat the green covering of this side of the leaflets, concealing themselves by covered ways of the gnawed leaf, until they arrive at the stage before the chrysalis state, when they form a compact cocoon of the same gnawed stuff (specimens sent in every stage for your inspection). The grubs of this moth appear sometimes on the outer edge of a garden or plot of the Cocoa-nut tree, and spread over several acres of ground, leaving the trees almost bare of anything green except the upright heart leaves; the others have nothing left but the main stalk and the midribs of the leaflets, and a mass of bleached, rotten-like stuff between. The trees in this state look so like trees that had been burnt, that a friend who noticed the appearance of the trees in my own garden a few years ago exclaimed, 'Dear me! what has happened to your Cocoa-nut trees—have they all been burnt?" I may remark that on this occasion the produce of about 150 trees suddenly fell from about 2000 nuts at a plucking about once in six weeks, to only 250 or so, and I fear the result is the same wherever this pest has made its appearance, until the trees recover, and a new set of leaves appear. When collecting information on the various enemies of the Cocoa-nut tree some years ago I sent home, in the Colonial Bag, through Dr. Hooker, specimens of this moth and its grubs to Professor Westwood, with some notes about it; but, as I never heard of the arrival of this packet, I conclude it never reached its destination, and I trust you will now consider the subject a new one.

"When the grub first appeared here and at Negombo, about 20 miles from Colombo, about six or seven years ago, several acres of this Palm looked as if they had died, and every inquiry made by me of the natives and owners resulted in the same answer, with one exception. The reply was, 'Oh, it is the effect of the unusually dry weather we have had of late.' The only exception was that of an intelligent headman, who had the curiosity to send a man up for some of the bleached and eaten portions of the leaves, and he then told me that it was caused by 'a small worm.' Our other principal enemies of the Cocoa-nut tree here are the Anyctes rhinoceros and the Rhynchophora ferruginea. Scarcely a Cocoa-nut tree in Ceylon is free from one or two of the former beetles, and the result is that it is almost impossible to find a perfect and entire Cocoa-nut leaf here, in Colombo, at least. The beetle lodges in the top of the tree, and its habit is to bore through the lower ends of the petioles of the good leaves, and then devour the flower-bud which every leaf embraces, and also bore holes through the heart of the centre bud, to such an extent that nearly every leaf on the trees here look as if they had been riddled with shot. The leaf, when its spread out, often looks as if it had been cut by some sharp instrument. Of course it was easily eaten in the tender folded state in bud, and when expanded the injuries are very conspicuous, but I must confine myself to this moth at present.—*Wm. Ferguson, F.L.S.*

"London, February 12, 1876."

Mr. Murray undertook to report on the specimens at a future meeting.

Mysore Coffee-leaf Fungus.—Dr. M. C. Cooke showed a leaf of the Coffee plant from Mysore affected with a new fungus, different from the Hemileia of Ceylon, and called Pellicularia Koleroga (*Grevillea*, iv., 1876)

Mr. Berkeley considered that this might be a form of some lichen, or an undeveloped condition of some hymenomycetous fungus.

Change of Sex in Plants.—A conversation then arose as to the occasional change of sex in plants, *à propos* of the letter of Mr. W. G. Smith in the *Gardeners' Chronicle*, p. 211. Several similar circumstances were alluded to by Colonel Clarke, Dr. Masters, and others, and the meeting then adjourned.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. Were it not for a nice group of Cyclamens, and one of the finest groups of hybrid Amaryllis ever seen, contributed by Messrs. James Veitch & Sons, this committee would have had nothing to do to-day, these being the only productions of any importance before them. The hybrid Amaryllis numbered forty-two plants, and made a most effective group, though individually there was nothing strikingly novel amongst them. First-class Certificates were awarded to Junius, deep blood-red, with a darker shade down the centre of the segments, a good bold flower; Sultan, a crimson-shaded claret, with a light centre and recurved segments; Agatha, a fine smooth flower, crimson, tipped and edged with creamy white; Phœbe, dark vermilion-red, with a pale green centre, very striking; and Rev. J. Staniforth, rosy claret, with a well defined band of white down the centre of the segments. This group was Highly Commended, and a vote of thanks awarded to the Cyclamens. Mr. Green, Botanical Nursery, Reigate, showed some small plants of Prenanthes elegans, a cross between Porborea and Sonchus laciniatus, and useful on account of its graceful cut foliage, for table decoration.

FRUIT COMMITTEE.—H. Webb, Esq., in the chair. From Mr. Potter, gr., Sudbourne Hall, came excellent examples of forced Dandelion, Barbe de Capucin, and Whitloef, which received Cultural Commendations. Mr. Harrison Weir, Weirleigh, showed a few samples of a seedling Potato, second early, named King Harry, and which Mr. Berkeley thought was much like a variety named Prince's Feather, grown in Sussex. Mr. Weir also sent a remarkably well-preserved dish of Blenheim Pippin Apples, which received a Cultural Commendation; and a dish of Josephine de Malines Pear, under the name of Matthew's Eliza. Specimens of the Joly de Bonneau Pear came from the Rev. George Kemp; and Messrs. Lucombe, Pince & Co. sent Gidley's Pearmain Apple—a seedling from the Cornish Gilliflower, which it much resembles, and is in good condition now, while the former is almost, if not quite over. If a better bearer than its parent this will be worth growing. Messrs. Rivers & Son sent a German Apple, named Breitling, said to be a very popular variety at Stutgardt; and Mr. Munro, Potter's Bar, sent a dozen nice specimens of his Duke of Edinburgh Cucumber, "grown without bottom-heat," for which he received a Cultural Commendation. A fruiting branch of the Chinese Loquat was sent by Mr. Colbourn, gr. to R. B. Blyth, Esq., Woolhampton.

Botanical of Edinburgh: *Feb.* 10.—Sir Robert Christison, Bart., President, in the chair. The following communications were made:—

1. Notice of Botanical Excursions made to different parts of Scotland in 1875. By Professor Balfour.

Dr. Balfour stated that although much had been done of late years in the examination of the Scottish flora, there still remained ground to be searched, even in localities the flora of which was thought to have been exhausted—such as Braemar, Clova, and the Breadalbane range of mountains. The paper proceeded to give an account of the excursions made by the pupils of the botanical class and the Scottish Alpine Botanical Club, in which it was stated there had been some interesting plants observed, the record of which might be useful. On June 12 an excursion was made to Currie and the banks of the Water of Leith. The only thing worthy of remark was that the various species of introduced

grasses and other plants (especially Cruciferæ) which were found on the banks of the water near Mr. Bruce's paper mills, had entirely disappeared, in consequence of having been covered up by rubbish thrown over the place. On June 19 a botanical party visited Balerno moor, wood, and reservoir, and the Black Hill, when they collected Linnæa borealis, Rubus chamæmorus, Pillularia globulifera, &c. On June 26 a botanical trip was taken to the vicinity of Perth. The party visited the banks of the Tay, Kinnoull Hill, and the North Inch. Many plants of interest were found in the course of the excursion, including Cerastium holosteoides, Erodium pilosum, Epilobium brachycarpum, Sedum album, Myosotis strigulosa, Allium carinatum, Ceterach officinarum, Parmelia perlata. On July 3 a visit was made to Broughty Ferry, Forfarshire, where a party of between forty and fifty were kindly entertained by Mr. G. B. Simpson, at Seafield House. Professor George Lawson, of Dalhousie College, Halifax, Nova Scotia, and Mr. James Scrymgeour, from Dundee, joined the party. The ground examined was that between Broughty Ferry and Barry, including the Links of Monifieth and the Links of Barry. A great many rare plants were collected, amongst which were Erysimum orientale, Teesdalia nudicaulis, Saxifraga tridactylites, Carex incurva, and Equisetum variegatum. On July 10 a party of between forty and fifty proceeded to Leslie, and thence walked to the Lothrie waterworks, where they were hospitably entertained at breakfast by Provost Swan, of Kirkcaldy. The party then visited the West Lomond Hill, and returned in the afternoon. The plants collected included Radiola millegrana, Sedum villosum, Gentiana amarella, Veronica anagallis, Listera cordata, Habenaria chlorantha, and Hymenophyllum Wilsoni. On Thursday, July 15, a party of thirty proceeded by train to Killin, and took up their quarters at Cameron's Lochy Bridge Inn. In order to accommodate the party, a large hayloft was put in requisition. On Friday, July 16, the party drove in conveyances to Lawers Inn, about 8 miles from Killin, and then ascended Ben Lawers, where were collected Cystopteris montana, Cerastium compactum (collected by J. Sadler); Draba rupestris, Saxifraga cernua, Erigeron alpinum, Myosotis alpestris, and all the ordinary alpine plants. After an early breakfast on Saturday (17th), the party walked to the Cam-Chreag, or crooked rock, where many good plants were gathered, including Gentiana nivalis, Sesleria cærulea, Woodsia hyperborea, Veronica saxatilis, Dryas octopetala. Dr. Isaac Bayley Balfour, Mr. J. M'Millan, and Mr. P. B. Gibb, who left the party the previous night at midnight to see the sun rise from the summit of Ben Lawers, again joined the party at Cam-Chreag. They had come along the top of the mountains from Ben Lawers, and on their way they collected some rare plants, amongst which were Alsine rubella and Myosotis alpestris, with pure white flowers.

On Saturday, the 24th, the Scottish Alpine Club proceeded to Tyndrum in Perthshire, and took up their quarters in Anderson's excellent hotel there. On Monday, the 26th, they visited Ben Laoigh at Montain, 3708 feet high, one part of the mountain being in Argyle and the other in Perthshire. On the Perthshire side were gathered Cystopteris montana, Bartsia alpina, and Arabis petræa, all in great profusion. Kobresia caricina was also abundant in some places. Among the other plants of interest which were collected were Draba rupestris, D. incana, Sibbaldia procumbens, Saxifraga nivalis, Vaccinium uliginosum, Salix arbuscula, Carex vaginata, Poa Balfourii, Polypodium alpestre, and Lycopodium annotinum. On Tuesday, the 27th, the party ascended Ben Doirrean, a mountain in Argyleshire, 3523 feet above the sea. It is of difficult ascent, and is not particularly rich in alpine plants. Armeria maritima, Poa glauca, Thalictrum alpinum, Cherleria sedoides, Potentilla maculata, and other species were collected. Some of the party visited Ben Chaisteil, a mountain near Ben Doirrean, the summit of which is 2897 feet above the sea. The principal plants met with were Thalictrum majus, T. alpinum, Bartsia alpina, and Saxifraga nivalis. On Wednesday, 28th, Ben Challum, in Perthshire, a mountain 3354 feet above the sea, was visited. It was found not to be a productive hill, the chief plants collected being Bartsia alpina, Malaxis paludosa, Splachnum sphæricum, Œdopodon Griffithsii, and Tetraplodon mnioides. On Thursday Cam-Chreag was visited, when the usual alpine plants known to grow there were collected, including Myosotis alpestris, with blue, purple, and white flowers.

2. Notes on some Alpine Forms of Cerastium Collected in Argyleshire, Forfarshire, and Perthshire, illustrated by specimens. By Mr. John Sadler.

3. Description of a Freezing Microtome, and the Mode of Using It. By Professor Rutherford.

4. Report on the Open-air Vegetation at the Royal Botanic Garden. By Mr. McNab. (This paper we shall publish in a subsequent issue.)

5. Notes on Fern-leaved Beeches in Northamptonshire. By Mr. C. W. Peach.

The Beeches referred to are in the Rectory grounds at Thornhaugh, Northamptonshire. Their age is unknown to the present Rector (Rev. H. Fuller), who found them thriving trees when he came to the living nearly twenty years ago. They are still in a very flourishing state, and were well covered with leaves and fruit last year. One near the entrance gate is surrounded by large Oaks, &c., and is thus overshadowed by their wide-spreading branches, and from this cause is drawn up in a very crooked manner by having to twist itself to get light and sun. It is about 52 feet high. The other is a graceful tree, from having room to spread out. Before branching the stem is 3 feet 2 inches in height, and from the ground to the tip of the topmost branch 42 feet. Girth of stem, 4 feet 2 inches. The spread of the branches is 42 feet. This tree is much admired for its leaves and symmetry. The Rectory grounds are in a gently sloping valley, through which runs a small brook. The soil is a deep diluvial marly loam, and in which Oak and other large trees and shrubs thrive luxuriantly; many of them are hoary with age; all of them are taken the greatest care of. A large Ivy-covered Fir was blown down some time ago; it had been the nesting-place of wood-pigeons for years, and when prostrate upwards of 200 nests were counted in the Ivy, so well had they been cared for. The Beeches from their rarity are, however, special favourites.

Lieutenant Andrew Balfour, R.N. (son of Professor Balfour), who has recently returned from the *Challenger* Expedition, exhibited a series of highly interesting photographs, showing the vegetation and the appearance of many places visited by the ship during the voyage. These included, amongst others, Halifax, Nova Scotia, the Cape de Verde and Azore islands, New Zealand, Kerguelen's Land, the Ki, and other islands in the Indian Archipelago; the Philippine and Sandwich Islands, Rio de Janeiro, and Tahiti—the most interesting photograph in the latter group being that of the Tamarind Tree, planted by Captain Cook in the latter-named island.

Professor Alexander Dickson exhibited specimens of a number of fungi, including Dædalea quercina, Polyporus fomentarius, and P. betulinus.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

FOR THE WEEK ENDING WEDNESDAY, FEB. 16, 1876.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr	Barometer. Departure from Average of 15 years	Temperature of the Air. Highest	Temperature of the Air. Lowest	Temperature of the Air. Range.	Temperature of the Air. Mean for Day.	Temperature of the Air. Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables, 5th Edition. Dew Point.	Hygrometrical Deductions from Glaisher's Tables, 5th Edition. Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Feb.	In.	In	°	°	°	°	°	°			In.
10	29.71	—0.04	37.2	25.3	11.9	30.8	— 8.2	25.6	80	N.E.; E.N.E.	0.00
11	29.70	—0.03	30.1	22.9	7.2	26.3	—12.7	21.7	83	N.E.; E.; E.S.E.	0.00
12	29.68	—0.10	37.1	21.7	15.4	29.2	— 9.7	24.3	80	N.E.; N.N.E.; S.W.	0.00
13	29.47	—0.33	37.0	25.4	11.6	30.5	— 8.4	26.3	82	ENE	0.22
14	29.45	—0.35	48.3	28.1	20.2	38.4	— 0.4	34.4	86	S.W.; WSW	0.07
15	29.35	—0.46	52.2	40.3	11.9	46.4	+ 7.7	41.5	93	S.W.	0.10
16	29.53	—0.28	53.6	41.8	11.8	46.9	+ 8.2	42.9	87	WSW S.W.	0.07
Mean	29.56	—0.24	42.2	29.4	12.8	35.5	— 3.4	31.4	84	N.E.; S.W.	sum 0.49

Feb. 10.—A very fine day. Fog and hoar-frost in morning.
— 11.—Dense fog, and very cold throughout. Hoar-frost.
— 12. A fine cold day. Slight fog, but much hoar-frost in morning.
— 13. Fine, but dull at times. Heavy fall of snow from 0.30 P.M. to 9.30 P.M. Depth, 3 inches.
— 14.—Fine and bright till evening, when thin rain fell. A rapid thaw.
— 15.—Dull, occasional rain till 3 P.M. Fine after. Mild. Strong wind.
— 16.—Dull and showery till 1 P.M. Fine after. Strong wind throughout.

—— During the week ending Saturday, February 12, in the vicinity of London the reading of the barometer at the level of the sea increased from 29.83 inches at the beginning of the week to 29.92 inches by the evening of the 6th, decreased to 29.89 inches by the morning of the 7th, increased to 29.97 inches by the evening of the same day, decreased to 29.77 inches by the afternoon of the 9th; increased to 29.94 inches by the morning of the 10th, and decreased to 29.86 inches by the end of the week. The mean reading for the week was 29.90, being 0.28 inch lower than that of the preceding week, and 0.07 inch below the average.

The highest temperatures of the air observed by day ranged from 38¼° on the 7th to 30° on the 11th; the mean value for the week was 36¼°. The lowest temperatures of the air observed by night varied from 21¾° on the 12th to 31½° on the 6th, the mean for the week being 27½°. The mean daily range of temperature in the week was 8¾°, the greatest range in the day being 15½° on the 12th, and the least, 5°, on the 8th. The mean daily temperatures of the air were as follows:—6th. 34°.8; 7th, 34°.1; 8th, 33°.3; 9th, 33°; 10th, 30°.8; 11th, 26°.3; 12th, 29°.2; and the departures were all in defect of their respective averages, and were successively 4°.3, 5°, 5°.8, 6°.1, 8°.2, 12°.7, and 9°.7. The mean temperature of the air for the week was 31°.6, being 7°.4 lower than the average of sixty years' observations. The week was thus very cold.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the sun's rays, was 75½° on the 10th, but on the 11th it did not rise above 38¼°. The lowest readings of a thermometer on grass with a bulb exposed to the sky was 17¼° on the 12th; the mean for the several low readings was 25½°.

The direction of the wind was N.E., and gentle in motion. The weather during the week was fine, but very cold. Slight snow fell on the 7th, 8th, and 9th. A dense fog prevailed during the whole of Friday, the 11th inst.; the day was very cold, being no less than 12¼° below its average temperature.

In England, the highest temperatures of the air observed by day were 45° at Truro, and 43° at Plymouth. At Norwich 37½° was the highest temperature in the week. The mean value from all stations was 40½°. The lowest temperatures of the air observed by night was 14½° at Eccles and 18½° at Nottingham. At Plymouth 31° was the lowest temperature in the week. The general mean from all stations was 23½°. The range of temperature in the week was the greatest at Eccles, 27°, and the least at Plymouth, 12°. The mean range of temperature from all stations was 17½°. The mean of the seven high day temperatures was the largest at Truro, 41½°; at Plymouth 40½°, and the smallest at Nottingham, 33½°. The mean value from all stations was 37½°. The mean of the seven low night temperatures was the smallest at Eccles, 25°, and the largest at Truro, 33½°; at Plymouth 32½°. The mean from all stations was 29½°. The mean daily range of temperature in the week was the greatest at Eccles, 12°, and the least at Norwich and Nottingham, both 6°. The mean daily range of temperature from all stations was 8°.

The mean temperature of the air for the week from all stations was 33°, being 2° and 1¾° lower than the values for the corresponding weeks in 1874 and 1875. The highest was 37°, at Truro, and the lowest 30°, at Nottingham.

The amount of rain measured at Truro was 1¼ inch nearly, at Newcastle-on-Tyne nine-tenths of an inch fell, but at Brighton one-hundredth of an inch only was measured; the average fall over the country was a quarter of an inch.

The weather during the week was fine but very cold, with slight showers of snow and hail. At Wolverhampton the mean temperature for the week was remarked as being 0°.3 lower than any corresponding week during the last nineteen years.

In Scotland, the highest temperatures of the air ranged from 44° at Edinburgh to 40° both at Glasgow and Paisley. The lowest temperatures of the air varied from 21¼° at Glasgow to 25½° both at Aberdeen and Leith, their respective averages being 41¼° and 23½°. The mean range of temperature in the week was 18°. The mean temperature of the air for the week from all stations was 33½°, being 2° lower than the value for the corresponding week in 1875. The highest occurred at Aberdeen, 34½°, and the lowest at Glasgow, 32¾°.

The amount of rain measured at Aberdeen was three-quarters of an inch, at Leith half an inch fell, but at Greenock and Paisley none fell. The average fall over the country was a quarter of an inch.

At Dublin the highest temperature of the air was 43°, the lowest 26°, the range 17°, the mean 36°, and the fall of rain 0.58 inch.

JAMES GLAISHER.

Enquiries.

He that questioneth much shall learn much.—BACON.

100. CHAMOIS LEATHER DUST.—Can you or any of your readers inform me for what purpose the dust produced in the manufacture of Chamois leather is used? I have been informed it is used in the cultivation of the Lavender plant, but perhaps some of your subscribers can furnish me with exact information on the subject. *A Subscriber.* [We have heard of its being used as a manure for Onions. EDS.]

Answers to Correspondents.

*** We must beg the indulgence of numerous correspondents, whose communications are necessarily delayed by the great accumulation of correspondence.

ADDRESS: Will Mr. G. Rumley, late of Alne, near Easingwold, Yorkshire, kindly favour us with his address?

ABRUS PRECATORIUS: *G. E. B.* This may be found now in almost all tropical countries, but we have not heard of its being found at the Cape of Good Hope, though it is possible it may have been introduced there.

ARTICHOKE MARROW: *R. J. W.* Doubtless the variety you seek is the Patisson of French seedsmen. Messrs. Vilmorin offer seeds of an Improved Patisson. The colour, yellowish white, is often mottled with green. *E. S. D.*

BEGONIA EVANSIANA: *J.* According to the American *Gardeners' Monthly*, this old plant is often called the Beefsteak Geranium. It is quite hardy at Philadelphia.

BOOKS: *F. Newman.* Write to Mr. Murray, Albemarle Street, W., for Mr. Darwin's work on the *Fertilisation of Orchids.*—*H. W.* The *Floral Magazine* is published

by Messrs. Lovell Reeve & Co., Henrietta Street, Covent Garden, W.C.

BOUGAINVILLEA: *F. Miller.* You should have sent branches and leaves. The flowering specimens, however, appear to belong to B. spectabilis.

CAMELLIA: *J. Clarke.* The flower is very like that of the variety called Lady Hume's Blush.

CRINUMS: *J. R. H.* The Crinums require abundant moisture as well as heat, C. asiaticum needing more of the latter than C. capense.

FILBERTS AND COB NUTS: *J. C. B.* The pruning of Filberts and Cob Nuts is generally delayed until the catkins begin to shed their pollen, when the shaking consequent on pruning operations will cause it to fertilise female blossoms. In pruning, keep the inner part of the bushes well opened out to the light, thin out the remaining branches, and spur in all unfruitful wood. Go over the surface of the ground, and root out all suckers, afterwards spread over as much manure as can be spared, and dig it in at once.

FUMIGATION: *C. D. S.* The material used, of which you send a sample, does not appear to be injuriously powerful. We have little doubt, from the appearance of the specimen, that it has been allowed to ignite during the process of fumigation, and that the plants are scorched.

HEATING: *A Subscriber.* A 24-inch saddle boiler (12 inches by 12 inches) should heat efficiently 300 feet of 4-inch piping.

MATTING: *G. E. B.* The Russian mats used in gardens are made of the inner bark of the Lime tree. Cuba bast is also used for tying plants, and this is the fibrous inner bark of Paritium elatum, the Mountain Mahoe, which is found only in Cuba and Jamaica.

NAMES OF FRUITS: *H. Jarvis.*—Your Apple most nearly resembles Hoary Morning.—*Edward Holmes. Apple:* Small's Admirable.—*H. H.* 1, Carlisle Codlin; 2, not known; 3, Gloria Mundi; 4, Dutch Codlin.

NAMES OF PLANTS: *G. Dodd.* Nos. 1 and 2 belong to the little section of Greek Silver Firs called by some varieties of Cephalonica, by others separated under the names of Apollinis, Reginæ Amaliæ, panachaica, peloponnesiaca and Kukunaria. We regard them all as one species distinct from Cephalonica. They may perhaps be varieties, and if we were to venture to guess at the varieties from the scanty materials sent us we should call No. 1 Apollinis and No. 2 Reginæ Amaliæ. No. 3 is Libocedrus decurrens, No. 4 seems a variety of Abies Douglasii.—*Mrs. Rowland.* Libonia floribunda.—Correspondents who expect to have their specimens named should send good specimens, with full history, and other particulars.

PEACH CROPS FAILING: *A Beginner* would be glad if Mr. Hinds would explain what he means at p. 173, col. *c*, by "stuff of the right sort."

PRICKLY COMFREY; *Cottager.* Symphytum asperrimum, a weed in some places. We cannot tell you where it can be obtained.

RESTING-SPORE OF POTATO DISEASE. *F. W.* Dr. Carpenter's claim has been mentioned already in these columns. The original discovery, though its significance was not then known, was made by Mr. Stephens at Bristol, more than twenty years ago. Some German naturalists have raised doubts as to whether what Mr. Smith has discovered is really the spore of the Potato fungus at all. But of this more anon.

RETAINING WALLS: *K. K.* We should be much obliged for a few words on this subject.

COMMUNICATIONS RECEIVED.—P. B., Okendon.—A Subscriber.—R. Mack.—C. W. S.—T. B.—J. R. J.—J. Leadbetter.—L. H. G.—T. M. & Son (anticipated).—A. & N.—G. B., Sydney.—D. T. F.—B. Tiffard.—W. E.—R. M.—C. I.—J. M.—R. D.—S. S.—W. B. H.—K. K.—Copeland & Doran (next week).—J. T.—J. Ellam.—A. D.—M. C. Joly—W. B.—A. F.

*** IMPORTANT NOTICE.—*The* AGRICULTURAL GAZETTE *is now* PUBLISHED *on* MONDAYS, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, February 17.

The market remains the same as last week, with a slight advance on all kinds of best goods. *Jas. Webber, Wholesale Apple Market.*

VEGETABLES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	6 0– ..	Lettuces, per score	2 0– ..
— Jerusalem, p. lb.	0 3– ..	Mint, green, bunch	1 6– ..
Asparagus (English), per bundle	8 0–10 0	Mushrooms, per pott.	1 0– 2 0
Beans, French, p. 100	5 0– ..	Onions, young, bun.	0 4– 0 6
Beet, per doz.	1 0– 2 0	Parsley, per bunch	0 4– ..
Brussels Sprouts, lb.	0 4– ..	Peas, green, per lb.	1 6– ..
Cabbages, per doz.	1 0– 2 0	Potatos (new), basket	1 0– ..
Carrots, per bunch	0 6– ..	— new Jersey, p. lb.	1 6– 2 0
Cauliflowers, p. doz.	2 0– 4 0	— Sweet, per lb.	0 6– ..
Celery, per bundle	1 6– 2 0	Radishes, per bunch	0 2– 0 4
Cucumbers, each	2 0– 3 6	— Spanish, doz.	1 0– ..
Endive, per doz.	1 0– 2 0	— French	0 6– ..
— Batavian, p. doz.	2 0– 3 0	Rhubarb, per bundle	0 6– 1 0
Herbs, per bunch	0 2– 0 4	Salsafy, per bundle	0 9– ..
Horse Radish, p. bun.	3 0– 5 0	Seakale, per punnet	1 0– 2 0
Leeks, per bunch	0 2– 0 4	Shallots, per lb.	0 3– ..
		Turnips, per bundle	0 4– ..

Potatos—Rocks, 105*s.* to 110*s.*; Regents, 150*s.* to 170*s.*; Myatt's, 160*s.* per ton.

FRUIT.

	s. d. s. d.		s. d. s. d.
Apples, per ½-sieve	1 0– 2 6	Melons, each	0 0– 0 0
Cobs and Filbts., lb.	0 6– 0 9	Oranges, per 100	6 0–12 0
Grapes, per lb	3 0– 8 0	Pears, per doz.	2 0– 8 0
Lemons, per 100	6 0–10 0	Pine-apples, p. lb.	1 6– 4 0

CUT FLOWERS.

	s. d. s. d.		s. d. s. d.
Arum Lilies, per doz.	6 0–18 0	Narcissus, per dozen	3 0– 6 0
Azaleas, 12 sprays	1 0– 3 0	Pelargoniums, 12 spr.	2 0– 4 0
Camellias	1 6– 9 0	— Zonal do.	1 0– 3 0
Carnations, 12 blooms	2 0– 4 0	Primula, dbl., p. bun.	1 0– 1 6
Cineraria, per bunch	1 0– 2 0	Rhododend., 12 hds.	4 0–12 0
Cyclamen, 12 blooms	0 3– 0 6	Roman Hyacinths, 12 sprays	3 0– 6 0
Epiphyllum, p. doz.	1 0– 3 0	Roses, indoor, p. doz.	3 0–12 0
Eucharis, per doz.	6 0–18 0	Spiræa, 12 sprays	2 0– 4 0
Euphorbia, 12 spr.	4 0– 9 0	Stephanotis, 12 sprays	9 0–18 0
Gardenia, per doz.	12 0–18 0	Tuberoses, per doz.	4 0– 9 0
Heliotropes, 12 spr.	0 6– 1 0	Violets, 12 bunches	2 6– 4 0
Lily of Valley, 12 spr.	1 6– 6 0		
Mignonette, 12 bun.	6 0– 9 0		

PLANTS IN POTS.

	s. d. s. d.		s. d. s. d.
Azaleas, per doz.	30 0–60 0	Heaths, in var., doz.	12 0–30 0
Begonias, per doz.	6 0–12 0	Hyacinths, per doz.	0 0–18 0
Bouvardias, do.	12 0–18 0	Hyacinths, Rom., do.	12 0–30 0
Cineraria, per doz.	12 0–18 0	Lily of Valley, doz.	18 0–36 0
Cyclamen, do.	12 0–24 0	Mignonette, do.	6 0– 9 0
Cyperus, do.	6 0–12 0	Myrtles, do.	3 0– 9 0
Dracæna terminalis	30 0–60 0	Pelargoniums, scarlet, per doz.	6 0– 9 0
— viridis, per doz.	18 0–24 0	Primula sinensis, do.	6 0–12 0
Epiphyllums, do.	18 0–42 0	Solanums, do.	6 0–24 0
Euphorbia jacquinifolia, per doz.	9 0–18 0	Tulips, do.	8 0–12 0
Ficus elastica	2 6–15 0	Veronica, do.	4 0–12 0

SEEDS.

LONDON: *Feb.* 17.—The features this week of the agricultural seed trade are great firmness in values and increased activity in demand. All classes of red Clover seed are held with extreme steadiness, and the supply does not increase. The offers received here from France are now on a much more restricted scale; and English samples, moreover, continue very scarce. The Germans are reported from New York to have lately been large buyers of American red. A little Canadian seed has been shipped to this country, but there is no quantity left to follow, so that in all probability, when the consumptive demand fairly sets in, a higher range of values will be seen. For Trefoil there is a good sale on fully former terms. As regards white Clover and Alsike the upward tendency noted last week has further developed itself. Imported Italian is also on the move; of fine seed there is very little offering. Sainfoin and Lucerne meet with more attention, and prices are consequently hardening. A good business is passing in spring Tares, and an advance must be noted on the past few days of 2*s.* to 3*s.* per quarter. The larger varieties being extremely scarce command very high rates. The stocks of all sorts left here are now reduced to quite narrow limits. The demand being dull Canary seed is easier. Hemp seed is also slow. The Mustard seed trade exhibits signs of awaking from its long lethargy. English Rape and Linseed are in good request. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, E.C.*

CORN.

At Mark Lane on Monday trade was quiet. Fine and good conditioned Wheat, of which the supply was proportionately small, was held for extreme prices, but offers of less money were not generally rejected for the inferior descriptions. Barley was dull, especially best malting qualities. Malt was sparingly bought, at about late rates. Swedish Oats were in demand at an advance of quite 6*d.* per quarter, while other sorts improved somewhat in sympathy. Maize was inactive and about the same in price. Beans and Peas were cheaper when offered. In flour there was no appreciable change.—On Wednesday the supply of English Wheat was short, as also was that of foreign Wheat, and a few samples of good conditioned produce went off without difficulty at fully Monday's quotations. Barley was dull, and if pressed for sale, cheaper. Malt was about the same in tone, and the advance established in Oats was supported. Maize was unaltered. Beans and Peas had a slight downward tendency, and holders of flour were in some instances disposed to give way a little in price.

HAY.

At the Whitechapel market on Thursday last the weather interfered with both demand and supply, and trade was steady without much activity. Prime Clover, 117*s.* to 147*s.*; inferior, 75*s.* to 95*s.*; prime meadow hay, 112*s.* to 132*s.*; inferior, 55*s.* to 75*s.*; and straw, 34*s.* to 41*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 130*s.* to 140*s.*; inferior, 90*s.* to 110*s.*; superior Clover, 140*s.* to 148*s.*; inferior, 105*s.* to 120*s.*; and straw, 45*s.* to 50*s.* per load.

POTATOS.

At the Borough and Spitalfields markets there was a moderate supply of Potatos, the better descriptions of which experienced a steady demand, and realised full prices. Kent Regents, 110*s.* to 135*s.* per ton; Essex ditto, 100*s.* to 125; Rocks, 80*s.* to 95*s.*; Victorias, 120*s.* to 145*s.*; flukes, 130*s.* to 150*s.*; kidneys, 110*s.* to 130*s.*—The arrivals of foreign Potatos into London last week included 11,236 bags from Antwerp, 1488 sacks from Dunkirk, 2158 bags from Ghent, 8 sacks from Nazaire, 166 sacks from Boulogne, 187 bags from Ostend, 1402 bags from Hamburgh, 6583 bags from Harlingen, and 112 bags 5 baskets from Rotterdam.

Vines. Vines—Dwarf Roses.

PLANTING and FRUITING CANES of Black Hamburgh, Black Alicante, Lady Downe's, Muscat of Alexandria, Madresfield Court, Gros Colman, Mrs. Pince, Trentham Black, Buckland Sweetwater, Foster's Seedling, Dr. Hogg, Muscat Hamburgh, Royal Muscadine, and West's St. Peter's, 2*s.* 6*d.* to 5*s.* each; Waltham Cross, 5*s.* to 7*s.* 6*d.* each; Pearson's Golden Queen, 21*s.* to 31*s.* 6*d.* each.

DWARF ROSES, extra strong, 6*s.* per dozen.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

Prize Seeds.

WRIGHT'S GROVE and GIANT CELERIES and CUCUMBERS.

WRIGHT'S GROVE RED and GROVE WHITE CELERIES were awarded the First Prizes at the South Kensington Show on November 10 and 11, 1875; see *Gardeners' Chronicle* (p. 627), November 13. These have been proved to possess all the good qualities required in a first-class Celery. Per ½ oz. packets, 1*s*

WRIGHT'S GIANT WHITE CELERY has a more robust habit and stronger growth than Grove White, combined with a fine flavour. It forms very solid hearts, which blanch easily. Heads have been grown weighing from 8 lb. to 10 lb. each. Per ½ oz. packets, 1*s.*

The following have secured supplies for the coming season:—

Hurst & Son, London.
Dickson, Brown & Tait, Manchester.
Sutton & Sons, Reading.
B. Crossland, Sheffield.
S. Finney & Co., Newcastle.
C. & J. Lee, Hammersmith.
Samuel Yates, Manchester.
Laird & Sinclair, Dundee.
E. Holmes, Lichfield.
W. Smith & Son, Aberdeen.

CUCUMBERS:—Wright's Wonder, fine White-spine, and Wright's Improved Black-spine. These will grow 24 to 30 inches long, without neck or handle, are very prolific and of mild good flavour; fine for exhibition. Berks Champion, Improved Sion House, Masters' Early Prolific, Munro's Duke of Edinburgh, Long Gun, Telegraph. Per packet, 1*s.*

Cash with orders will have prompt attention. Trade price on application.

WILLIAM WRIGHT, Seedsman, Retford, Notts.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham, will be glad to send their CATALOGUE for this season on application. The stock of the undernamed, in best sorts and good plants, is very large and fine:—

	Per doz. s. d.	P. 100. £ s.
Antirrhinums	3 6 ..	1 5
Ageratums	2 0 ..	0 12
Chrysanthemums	3 0 ..	1 0
Carnations and Picotees, single plants	6 0 ..	2 5
,, pairs	11 0 ..	3 15
Clematis	15 0 ..	5 0
Calceolarias	1 0 ..	0 8
Coleus	3 0 ..	1 1
Carpet Bedding plants	1 6 ..	0 10
Daisies, various colours	1 0 ..	0 5
Fuchsias	3 0 ..	1 0
Geraniums, tricolor	3 6 ..	1 5
,, bicolor	3 6 ..	1 5
,, Zonal and Nosegay in sorts for pots	3 0 ..	1 1
,, autumn struck for bedding, out of pots	2 0 ..	0 12
Heliotropes	2 6 ..	0 18
Iris germanica	3 0 ..	1 1
Lantanas	3 0	
Lobelias	1 0 ..	0 6
Succulents	6 0	
Greenhouse plants 12*s.* to	18 0	
Stove plants, 12*s.* to	18 0	
Tree Carnations	12 0	

	Per doz. s. d.	P. 100. £ s.
Pelargoniums, 6*s.* to	9 0	
Herbaceous plants	3 0 ..	1 0
Pelargoniums: Queen Victoria and Captain Raies	18 0	
Pansies, show	3 6 ..	1 5
,, bedding	2 0 ..	0 15
Pinks	3 6 ..	1 5
Pæonies	12 0 ..	4 10
Pentstemons	3 6 ..	1 5
Pyrethrums	10 0	
Salvias	3 0 ..	1 1
Sedums	3 0 ..	1 1
Saxifrages	3 0 ..	1 1
Violas	1 6 ..	0 10
Violets	2 6 ..	0 18
Roses, in pots, H P.'s	12 0 ..	4 10
Hardy Climbing plants, in pots	12 0	
Dactylis elegantissima	1 0 ..	4 6
Grape Vines 30*s.* to	60 0	
Begonias	4 0	
Achimenes	2 6	
Dracænas terminalis and Cooperi	18 0	
Caladiums	15 0	
Epiphyllums	12 0	

Trade prices on application.

JAMES SMITH, Darley Dale Nurseries, near Matlock, offers the following:—

10,000 CUPRESSUS LAWSONIANA, 15 to 18 inches, 35. per dozen, 18*s.* per 100; 2 to 3 feet, 5*s.* per dozen, 30*s.* per 100; 2½ to 3½ feet, 6*s.* per dozen, 40*s.* per 100; 3 to 4 feet, 9*s.* per dozen, 65*s.* per 100, also larger plants.
5,000 CRYPTOMERIA ELEGANS, a fine Conifer from Japan, perfectly hardy—15 to 18 inches, 8*s.* per dozen; 1½ to 2 feet, 10*s.* per dozen; 2 to 3 feet, 15*s.* per dozen; 3 to 4 feet, 22*s.* per dozen. Also CRYPTOMERIA JAPONICA and LOBBII, of various sizes
10,000 IRISH IVIES, good plants, 3*s.* per dozen, 10*s.* per 100.
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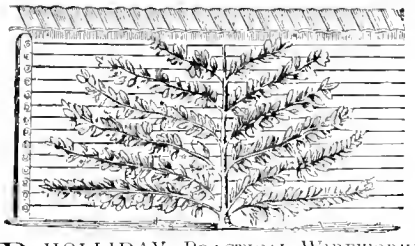

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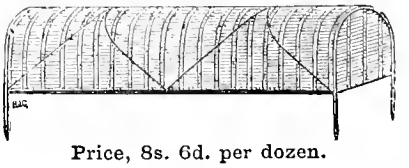
TIFFANY, 6s. 6d. and 7s. 6d. per piece of 20 yards.
EATON AND DELLER, 6 & 7, Crooked Lane, London Bridge.

THOMAS'S
IMPROVED PEA & SEED GUARDS
REDUCED PRICES, SEASON 1877.
Superior Quality. Galvanised after made.
NEW PATTERN WITH DIAGONAL STAYS.
No. 76. 3 ft. long, 6 in. wide, 6 in. high.



Price, 8s. 6d. per dozen.

Two end pieces included with each dozen. The above being smaller in the mesh than the ordinary diamond pattern, are proof against the smallest birds.
Having a large stock of the above, Orders can be executed on receipt.
Five per cent. discount allowed for prompt cash on Orders amounting to 20s. and upwards. Special quotations for large quantities.

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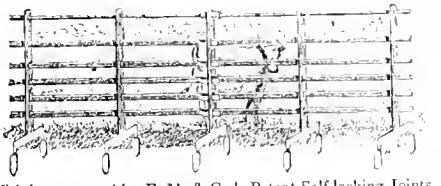
PADDINGTON WIREWORKS,
285 and 362, EDGWARE ROAD, LONDON, W.
Illustrated and Priced Catalogues of every description of Horticultural Wirework on application.
Post-office Orders payable at 310, Edgware Road.

Established over a Quarter of a Century.

FRANCIS MORTON & Co's (LIMITED) LIVERPOOL NAYLOR STREET CABLE FENCING

Is in use over many thousand miles,
And has been awarded the Medals and highest Commendation, of all the leading Agricultural Societies.
It is constructed with
POWERFUL WINDING STRAINING PILLAR
RIGID INTERMEDIATE IRON POSTS,
STRONG and DURABLE WIRE CABLE STRANDS,
Forming the most efficient Strained Iron Fencing known for agricultural and general purposes.

Continuous Bar Iron Fencing,



With bars secured by F. M. & Co.'s Patent Self-locking Joints, which effectually prevent the uprights being pushed aside, and are independent of loose pins, wedges, or staples.

IRON ENTRANCE and FIELD GATES,
IN WROUGHT AND CAST IRON,
Designed for the Mansion, Villa, or Farm.
WICKET AND GARDEN GATES,
In Great Variety of Patterns.
Iron Hurdles, Railing, Tree Guards,
FRUIT ESPALIERS, WALL FRUIT TRAINERS, &c.
☞ *Illustrated and Described in F. M. & Co.'s New Catalogue, sent on application.*

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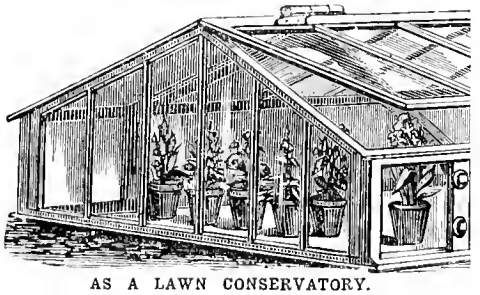
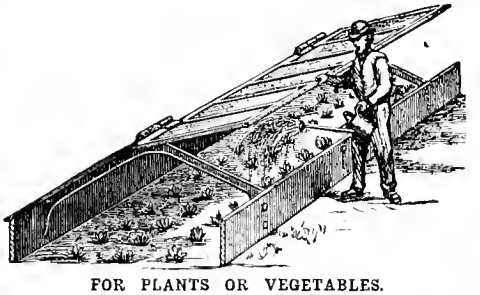
HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MAKERS.

Now Ready, our ILLUSTRATED CATALOGUE for 1876 of HORTICULTURAL BUILDINGS, containing upwards of 60 Engravings with Prices of Conservatories, Greenhouses, Peach Houses, Forcing Houses, &c., Free by Post for 12 stamps.



AS A LAWN CONSERVATORY.



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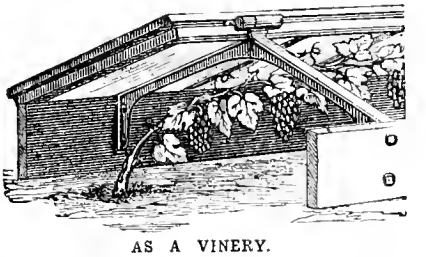

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The Judges at the Royal Horticultural Society's Great Meeting lately held at Birmingham, pronounced these Patent Plant Preservers and Ground Vineries to be by far the best and most useful articles of the kind they ever saw, and awarded them the ONLY PRIZE.

Instead of having to remove or slide loose glass every time it is necessary to attend to the plants, we attach the glazed lights (21-oz.) with hinges to the frame of each light, thereby doing away with continual breakage of glass and loss of time. Two men can instantly remove a complete length, 12 ft. by 4 ft. wide; thus proving them to be really portable. They are made in the following sizes. One pair of ends is sufficient for any number of lengths, if set in a continuous row.

Cash Prices carriage paid to any Station in England on Orders amounting to 40s. and upwards.

	Price.	Ends per pair extra.
6 feet long by 2 feet wide	£1 5 0	.. 5s. 0d.
12 feet long by 2 feet wide	2 10 0	.. 5s. 0d.
6 feet long by 3 feet wide	1 15 0	.. 7s. 0d.
12 feet long by 3 feet wide	3 5 0	.. 7s. 0d.
6 feet long by 4 feet wide	£2 0 0	.. 8s. 0d.
12 feet long by 4 feet wide	4 4 0	.. 8s. 0d.
12 feet long by 5 feet wide	5 10 0	.. 10s. 0d.
12 feet long by 6 feet wide	7 0 0	.. 12s. 0d.

Lawn Conservatories, with Glass sides and ends, 12 feet long by 4 feet wide, £7 5s.; 12 feet long by 5 feet wide, £8 15s.; 12 feet long by 6 feet wide, £10.

PATENT UNIVERSAL PLANT PRESERVERS, Large Sizes to Build on Brick Walls, for use as Span-roof Pits, suitable for Forcing, Propagating, Growing Cucumbers, Melons, and a variety of other things too numerous to mention. Write for New Illustrated List post free.

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"The uses to which such frames can be put are fully recognised by practical gardeners, and if any notice can be taken of the great demand arising for such contrivances amongst amateurs, it would appear that they too are not ignorant of their great value."—*Gardeners' Chronicle.*

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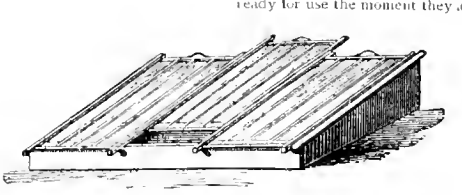
MELON OR CUCUMBER FRAMES.

All sizes (glazed with 21-oz.) ready for immediate delivery.

Height at back, 24 inches at front, 13 inches; sides, 1¼ inch thick; lights, 2 inches thick. All made of very best red deal. Painted three coats. Every pane of glass is nailed as well as puttied in. Each light is provided with an iron strengthening rod and handle.

Glazed with 21-ounce,



Cash Prices, carriage paid to any station in England when orders amount to 60s. and upwards.

4 feet long by 6 feet wide, 1 light ..	£1 17 6
8 feet long by 6 feet wide, 2 lights ..	3 5 0
12 feet long by 6 feet wide, 3 lights ..	4 17 6
16 feet long by 6 feet wide, 4 lights ..	6 7 6
20 feet long by 6 feet wide, 5 lights ..	7 17 6
24 feet long by 6 feet wide, 6 lights ..	9 7 0

One half allowed for Packing Materials when returned free to our Works. Cash or reference respectfully requested with transmission of all first orders.

TANNED GARDEN NETTING, 1½*d.* per Square Yard, for Protecting Seed-beds, Peas, Fruit, Strawberries, &c., from Birds, Frost, Blight, &c., and as a Fence for Fowls, in 1, 2, 3, and 4-yards widths. Hexagon, Tiffany, and other Netting, Galvanised Wire Netting, Pea Hurdles, and Seed Protectors, by

C. WRIGHT, 29, Lime Street, E.C., late 376, Strand, W.C.

CAUTION TO BUYERS
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The great reputation and success of Messrs. J. B. BROWN AND CO.'s VIENNA PRIZE WIRE NETTING seem to have induced certain Dealers in Wire Netting to advertise an inferior article at reduced prices, specifying the mesh, gauge, &c., as if such were the same in quality and value as the Prize Wire Netting of which Messrs. J. B. BROWN & CO. are THE SOLE MANUFACTURERS.

Messrs. BROWN & CO. would suggest that, before ordering quantities, one roll of their Wire Netting should be ordered and one roll of that advertized at reduced prices. The size and shape of the mesh may then be examined, the thickness or strength of wire, the weight of the rolls and the exact measurement, the general finish of the manufacture, and the quality of the galvanising.

This examination will prove the respective qualities of the Netting.

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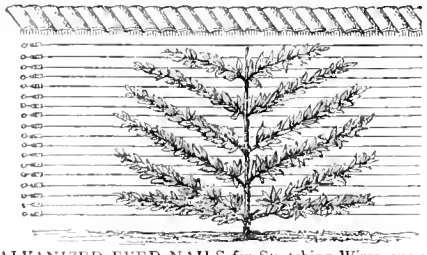

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SMALL-EYED STRAINING SCREWS and NUTS, neater than Raidisseurs, for Tightening Wires, *3s.* 6*d.* doz.

No. 14 GALVANIZED WIRE, placed 10 inches apart on the walls, *2s.* per 100 yards.

"The system of wiring a wall is simple, cheap, almost everlasting, and excellent in every particular, and it must ere long be universally adopted."

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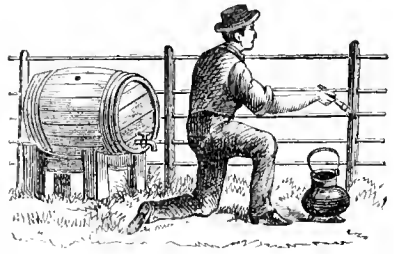

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Can be obtained in all sizes and qualities, of
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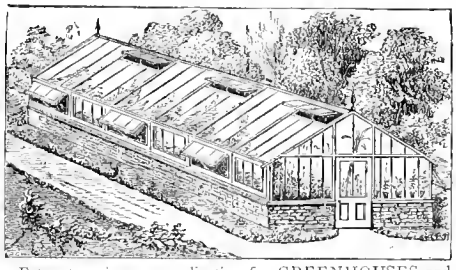

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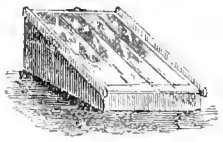
A large assortment.
Various sizes in stock.



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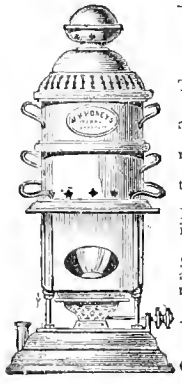
FOWLER'S PATENT STEAM PLOUGH and CULTIVATOR may be SEEN at WORK in every Agricultural County in England.

For particulars apply to JOHN FOWLER AND CO., 71, Cornhill, London, E.C.; and Steam Plough Works, Leeds.

ESTABLISHED 1856.
KEEP OUT THE FROST.



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To Burn Kerosene or any Mineral Oil

They will burn for twenty-four hours at a cost of one penny for three hours.

They require no attention beyond replenishing the Oil.

Suitable for Greenhouses, Conservatories, Halls, Bed-rooms, &c.

They will not injure the most tender Exotics, nor are they in any way injurious to the health.

Prices, in block tin, 30*s.*; in copper, 50*s.* Copper, with glass, to give light and heat, 55*s.* Either will be sent on receipt of Post-office Order.

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Catalogue free. No agents appointed.

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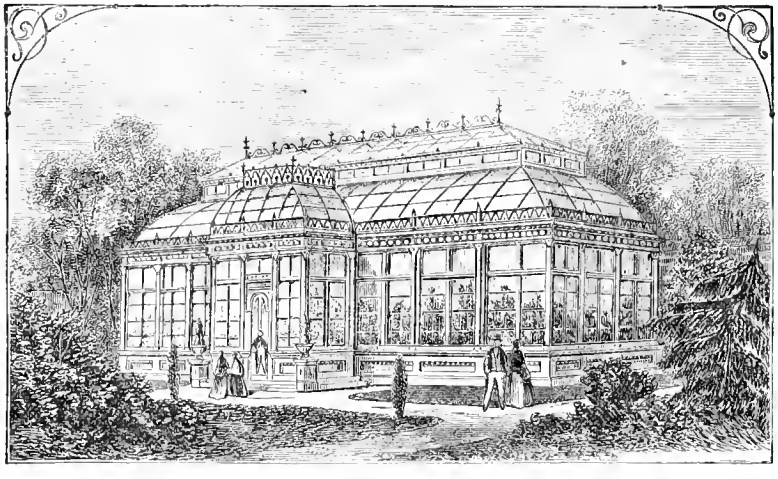

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ARCHITECTS' DESIGNS CAREFULLY CARRIED OUT.

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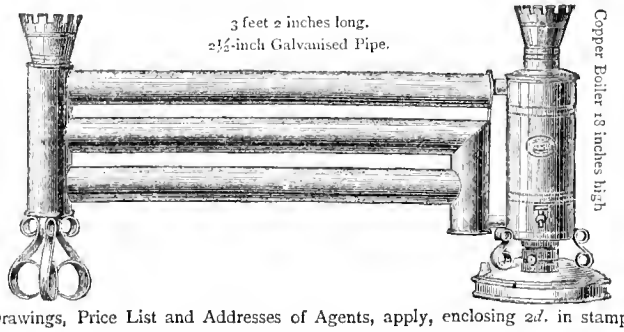
By Her Majesty's Royal Letters Patent.

PORTABLE HOT-WATER CIRCULATING BOILER,
THE BEST AND CHEAPEST EVER OFFERED TO THE PUBLIC.
To Burn Petroleum Oil, or, when required, may be Heated by Gas.

Made in several sizes—

SAFE, EFFECTIVE, ECONOMICAL, AND PORTABLE.

Suitable for Warming Small Entrance Halls, Conservatories, Bed Rooms, Offices, Saddle Rooms, Ship's Cabins, &c.



There is no smell, smoke, dust or danger in using this Apparatus. It will burn for THIRTY HOURS without attention, at a cost of less than ONE FARTHING per hour.

For Drawings, Price List and Addresses of Agents, apply, enclosing 2*d.* in stamps, to
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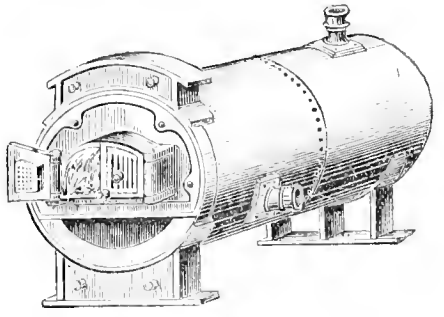
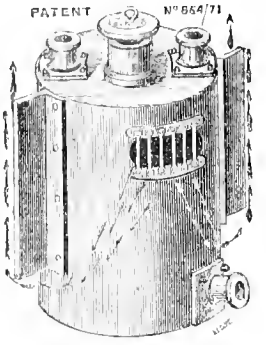


("TRENTHAM IMPROVED" BOILER.)



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NEW PATENT "CLIMAX" BOILER (1874). See p. 666, 1874, *Gardeners' Chronicle.*

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"TUBULAR," and every other Boiler of known merit or excellence.

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Which can be attached to any ordinary Boiler. These Tubes are the greatest Economisers of Fuel and Preservatives of Boilers, Fire Bars, and Furnace Fronts ever yet introduced to the public.

HOT-WATER APPARATUS ERECTED COMPLETE.

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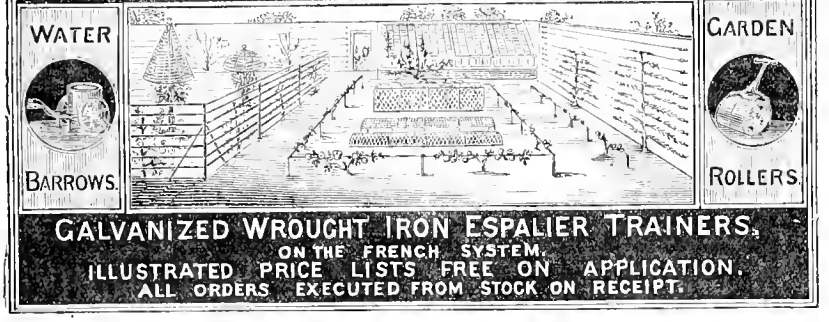

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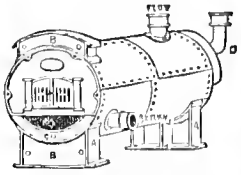

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F. & J. SILVESTER,
Castle Hill Foundry, Engineering and Boiler Works, Newcastle, Staffordshire.

☞ Our Boilers are the ONLY ones made with the sanction and under the inspection of the inventor, Mr. Stevens—all others being base imitations.

COWAN'S SYSTEM of HEATING saves in most cases the entire Cost of Fuel, maintains the heat more steadily than any other system, requires no night attendance, and produces no unpleasant smell.

COWAN'S SYSTEM of GASMAKING is the most economical yet known.

COUNTY MAGISTRATES, Governing Bodies, Noblemen, Gentlemen, Manufacturers, &c., are solicited to inquire into COWAN'S SYSTEMS of HEATING and GASMAKING, as, by the adoption of them in Gaols, Asylums, Hospitals, Workhouses, Factories, Private Mansions, Horticultural and other Buildings, a very great saving of expense is effected.

COWAN'S SYSTEM has been adopted by many Noblemen and Gentlemen, and can be seen in operation at Garston, where Apparatus for Heating, and one combining Heating and Gasmaking, have been erected.

THE COWAN PATENTS COMPANY (Limited) SUPPLY APPARATUS for Cowan's System of Heating and Gasmaking, as well as for every other description of Heating. The Company also undertake the ERECTION of ALL KINDS of HORTICULTURAL BUILDINGS. The Company have for Sale a great quantity of POT VINES from the well-known stock at Garston; and also, a Valuable Assortment of Stove and Greenhouse Plants, also Grapes, Pines, and other choice DESSERT FRUITS, for which application should be made to the Managing Director at the Vineyard. The Trade supplied. Plans and Estimates prepared. Illustrated Circulars free. Illustrated Pamphlet, price 2s.

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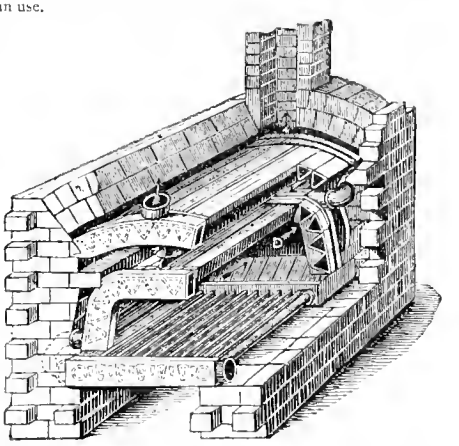
MESSENGER AND COMPANY'S PATENT TUBULAR BOILER.—Nearly 3000 now in use.



Combines all the advantages of the old Saddle, which is acknowledged to be the most economical, with the Tubular, the most powerful form of boiler. By the use of triangular tubes a larger amount of heating surface is exposed to the direct action of the fire than in any other form of boiler. The water-bridge (D) also receives the most intense heat. The boiler is made of cast-iron, which is admitted to be the best material as regards durability, strength, &c. In consequence of the above advantages we are enabled to supply boilers with a large amount of heating-power at very moderate rates. The power of this boiler can at any future time be increased by adding another row of tubes. Illustrated List free on application to

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Pure Anthracite Coal.

ABSOLUTELY SMOKELESS.

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For Prices, &c., apply to the Offices at Llanelly, South Wales, or to

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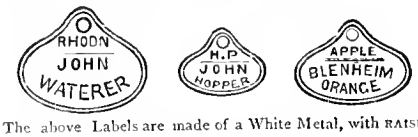

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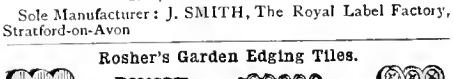

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THE AGRICULTURAL GAZETTE, for MONDAY, FEBRUARY 14.

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To Seedsmen.

APPRENTICE.—A Nobleman's Gardener wishes to place his Son, who is seventeen years of age, as Indoor Apprentice, with a good Firm, with whom he would have the opportunity of gaining a thorough insight into every branch of the Seed Business. The Youth has received a good education, and writes a clear bold hand. Address, stating terms, to Z., *Gardeners' Chronicle* Office, W.C.

A Lancashire MAN, age 24, having been recommended by a medical man to get employment for about two months in a Gentleman's Garden, for the good of his health, would do light active work and give £2 toward his maintenance. In a quiet small Nursery preferred. State full particulars. W. H., *Gardeners' Chronicle* Office, W.C.

To Seedsmen and Florists.

SHOPMAN, or MANAGER, in a Branch Business. Is well acquainted with the West End trade, Bouquet-making, and all kinds of Table and other Decorations, and has a good general knowledge of Plants, Seeds, and Bulbs.—A. W. S., 84, Seven Sisters Road, Holloway, N.

SHOPMAN, CLERK, SALESMAN, TRAVELLER, either of above combined.—Age 31, well up in all branches of the trade. Sixteen years' experience. Good references.—C. C. W., Messrs. White & Son, Nurserymen, Seedsmen, and Florists, The Parade, Poole, Dorset.

Seed Trade.

ASSISTANT SHOPMAN.—Seven years' experience in the Wholesale and Retail Seed Trade. Good reference.—Apply, 102, Pavilion Road, Sloane Street, London, S.W.

SHOPMAN (UNDER).—Four years' experience in the Retail Seed Trade. Good references given.—T. R., John Perkins & Son, 52, Market Square, Northampton.

Seed Trade.

JUNIOR ASSISTANT.—Age 18; has a fair knowledge of the above, also of the Nursery Business. Two years' good reference from present employer.—W. S., Frederick Gee, Seed Merchant, Biggleswade, Beds.

EPPS'S COCOA.
GRATEFUL—COMFORTING.
"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided our breakfast tables with a delicately-flavoured beverage which may save us many heavy doctors' bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal shaft by keeping ourselves well fortified with pure blood and a properly nourished frame."—*Civil Service Gazette.*

KINAHAN'S LL. WHISKY.
This celebrated and most delicious old mellow spirit is the very CREAM of IRISH WHISKIES, in quality unrivalled, perfectly pure, and more wholesome than the finest Cognac Brandy. Note the Red Seal, Pink Label, and Cork branded "Kinahan's LL." Whisky.
Wholesale Depot, 20, Great Titchfield Street, Oxford Street, W.

DINNEFORD'S FLUID MAGNESIA.—
The best remedy for ACIDITY of the STOMACH, HEARTBURN, HEADACHE, GOUT, and INDIGESTION; and Safest Aperient for Delicate Constitutions, Ladies, Children, and Infants.
DINNEFORD AND CO.,
172, New Bond Street London, and all Chemists.

DR. LOCOCK'S PULMONIC WAFERS.
Mr. R. Burnett, Chemist, Fraserburgh, N.B., writes, February 1, 1870.—"DR. LOCOCK'S WAFERS are well thought of here; they give instant relief to Asthma, Consumption, Coughs, Colds, Bronchitis, and all disorders of the throat, breath, and lungs. Taste pleasantly. Sold by all Druggists at 1s. 1½d., 2s. 9d., 4s. 6d., and 11s. per box.

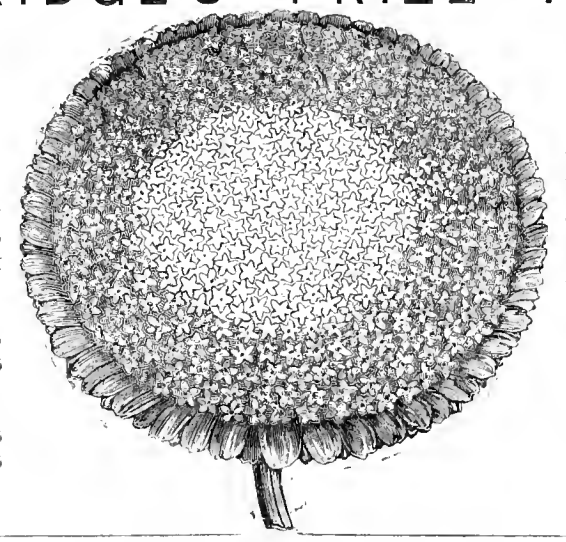
SUTTON'S CHOICE FLOWER SEEDS.

BETTERIDGE'S PRIZE ASTERS.

(Received direct from Mr. Betteridge this season.)

These beautiful quilled Asters are eminently suitable for exhibition purposes, and have again been improved in quality and increased in number and variety. Hence, we are enabled to offer the following collections :—

	s.	d.
24 Beautiful varieties (each colour separate)..	5	0
18 Ditto (ditto)..	3	6
Mixed, containing most of the above, 1s. per packet.		
12 Beautiful varieties (each colour separate)..	2	6
6 Ditto (ditto)..	1	6
Mixed, containing most of the above, 1s. per packet.		



(Received direct from Mr. Betteridge this season.)

The collection of twenty-four varieties includes a beautiful new chocolate, a pure white, a rich purple, &c., as also "Duke of Edinburgh," "Duchess of Edinburgh," and "Cantab," and cannot fail to give great satisfaction.

We can also supply the following, in large packets, at the low price annexed. The seeds have been saved in our own grounds this season, viz.:—

DUKE of EDINBURGH,
DUCHESS of EDINBURGH,
DUKE of CONNAUGHT,
CANTAB,
OXONIAN,

Price of each, per large packet, 1s.; or the five sorts for 4s.

The five sorts named above, as well as most of the varieties received direct from Mr. Betteridge this season, are included in our "mixed" packets, price 1s.

THE LONGEST PODDED BEAN IN CULTIVATION IS "NEW GIANT SEVILLE LONGPOD."

This is the longest podded Bean known. We grew some last year 1 foot in length. It is also very handsome in shape. Was awarded a First-class Certificate by the Royal Horticultural Society.
Price 2s. 6d. per quart.

THE BEST WAXPOD OR BUTTER BEAN IN CULTIVATION IS "MONT D'OR."

A remarkably early and distinct French variety, with stringless pods, producing an immense quantity of wax-like pods, very tender and fleshy; leaves small and pale in colour. Awarded First-class Certificate by the Royal Hort. Society. *Price 2s. 6d. per quart.*

SUTTON'S CHOICE SEED POTATOS FOR PLANTING.

THE FINEST POTATO AT PRESENT KNOWN.

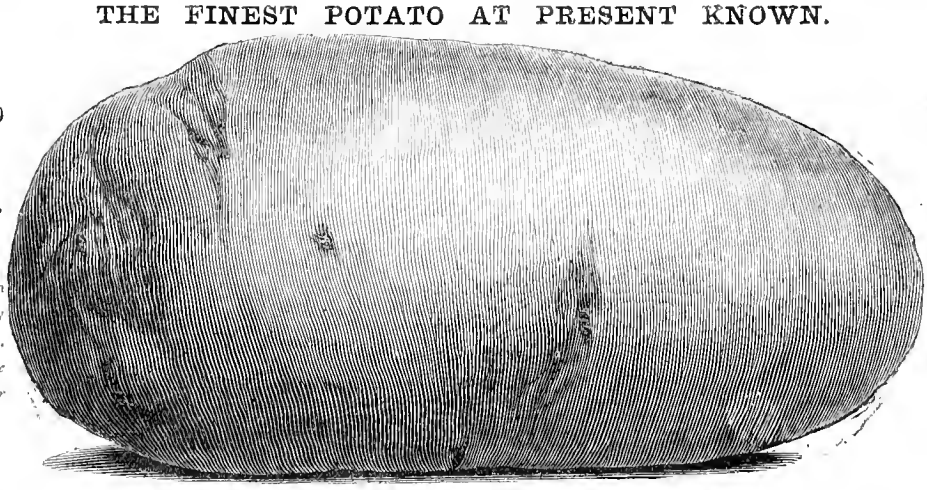
SUTTON'S
Magnum Bonum Potato

Opinion of
SHIRLEY HIBBERD, Esq.,
Stoke Newington.

November 8, 1875.

"Your new Magnum Bonum Potato singularly combines beauty of appearance with high quality, *and I believe it will prove the most generally useful variety ever put into commerce.*

"SHIRLEY HIBBERD."



SUTTON'S
Magnum Bonum Potato

Opinion of
SHIRLEY HIBBERD, Esq.,
Stoke Newington.

"The Magnum Bonum is a first-rate sort for the table, the flesh white, dry, and mealy; *the flavour all that can be desired.* When grown here for trial in 1874 the stools averaged 5 lb. o 7 lb. each of handsome roots. In 1875 the stools averaged 6 lb. to 9 lb. each, grown in ridges on my undrained clay.

"SHIRLEY HIBBERD."

SUTTON'S NEW MAGNUM BONUM POTATO.

A splendid new late Kidney, which has hitherto been *perfectly free from disease.* The tubers are large, of excellent shape, and are produced in great abundance; in fact, it is *the heaviest cropping English Potato we have ever seen*, and the *flavour is most excellent.* The erect habit of growth and colour of flower are perfectly distinct from all other Kidney Potatos. The stock is entirely in our possession. (*See Mr. Shirley Hibberd's opinion, above.*)

Per gallon, 6s.; peck, 10s. 6d.; bushel, 35s.

FOR FULL PARTICULARS OF OTHER CHOICE ENGLISH AND AMERICAN VARIETIES SEE

SUTTON'S DESCRIPTIVE LIST OF CHOICE SEED POTATOS FOR 1876.

Gratis and post-free on application.

THE QUEEN'S SEEDSMEN, *Sutton & Sons* READING, BERKS.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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Subscribers who wish to have "The Gardeners' Chronicle" forwarded DIRECT FROM THE OFFICE are respectfully informed that payment MUST BE MADE IN ADVANCE.

New ready, price in cloth 16s.,

THE GARDENERS' CHRONICLE VOLUME for JULY to DECEMBER, 1875.

W. RICHARDS, 41, Wellington Street, Strand, W.C.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE.—SCIENTIFIC, FRUIT, and FLORAL COMMITTEES' MEETINGS, on WEDNESDAY next, March 1, at 11 o'Clock. General Meeting at Three. Admission 1s.

ROYAL BOTANIC SOCIETY, Regent's Park, S.W.
EXHIBITIONS—1876.
EXHIBITIONS of SPRING FLOWERS, March 29, April 26.
SUMMER EXHIBITIONS, May 24, June 21.
EXHIBITION of FLOWER BEDS, June 1.
Tickets, Schedules of Prizes, &c., now ready.

Notice.

ROYAL AQUARIUM SUMMER and WINTER GARDEN.—SCHEDULES of all the FLOWER and FRUIT EXHIBITIONS are now ready, and may be had by applying to
JOHN WILLS, Superintendent of Horticultural Exhibitions, Royal Aquarium Summer and Winter Garden, Westminster, London, S.W.—Feb. 9.

GRAND FLORAL FETE, YORK, JUNE 14, 15, and 16. PRIZES, nearly SIX HUNDRED POUNDS. Schedules on application to
New Street, York. JOHN WILSON, Sec.

WEST OF ENGLAND ROSE SHOW.
Open to the United Kingdom.
This Great Annual Exhibition is fixed to take place in the Shire Hall, Hereford, on THURSDAY, June 29.
Rev. C. H. BULMER, Hon. Sec. *pro tem.*,
February 23. Credenhill Rectory, Hereford.

MAIDSTONE GRAND ROSE SHOW, WEDNESDAY, June 21, 1876.
PRIZES, about ONE HUNDRED POUNDS.
Maidstone. HUBERT BENSTEAD, Hon. Sec.

LEEDS HORTICULTURAL SOCIETY.—THIRTEENTH ANNUAL EXHIBITION will be held in the Horticultural Gardens, JUNE 28, 29, and 30, 1876. PRIZES, FIVE HUNDRED POUNDS and Two Silver Cups. Schedules forwarded on application.
JAMES BIRKBECK, Sec.
Delph Lane, Woodhouse, Leeds.

FROME ROSE CLUB.—The ANNUAL SHOW will take place on THURSDAY, June 29, 1876. ONE HUNDRED POUNDS will be given in PRIZES. Further particulars may be obtained from
Frome. A. R. BAILY, Hon. Sec.

Grand

HORTICULTURAL EXHIBITION,
ON
JULY 5, 6, 7 and 8,
AT THE
WINTER GARDENS, SOUTHPORT
FOUR HUNDRED POUNDS in PRIZES.

Schedules, now ready, can be had from the Secretary.

CARTER'S GRASS SEEDS for Lawns and Parks, 20s. per bushel

CARTER'S GRASS SEEDS for Permanent Pastures, 22s. 6d. to 36s. per acre.

CARTER'S GRASS SEEDS. Carriage Free. To suit all Soils.

CARTER'S, THE QUEEN'S SEEDSMEN, 237 and 238, High Holborn, W.C.

CAMELLIAS, Cut (White and others), in large or small quantities, of
CHAS. YOUNG, The Nursery, Balham Hill, London, S.W.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Standard and Dwarf Roses.
WHOLESALE and RETAIL.

H. LANE AND SON have a large stock to Dispose of. Special offer for quantities.
The Nurseries, Great Berkhamsted, Herts.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy.
The Ottershaw Nursery, Chertsey.

Helleborus niger (Christmas Rose)

J. VANDER SWAELMEN, NURSERYMAN, Gendbrugge, Ghent, Belgium, has a large and splendid stock, at 16s. per 100, or 120s. per 1000.
ACER NEGUNDO, for grafting this summer, 24s. per 1000.

New Roses for 1876.

H. BENNETT offers a careful selection of the above, in plants not to be equalled; unusually fine this season; ready in March. DESCRIPTIVE LISTS post-free.—Manor Farm Nursery, Stapleford, Salisbury.

The Oxford Roses, on Cultivated Seedling Brier.

GEORGE PRINCE'S Priced and Descriptive CATALOGUE now ready. All Roses are grown exclusively on the above stock at this establishment.
14, Market Street, Oxford.

ODONTOGLOSSUM ROSEA.—One of the most useful Winter Blooming ORCHIDS, especially where Cut Flowers are required. Good Bulbs, for blooming next winter, 42s. per dozen.
Mr. WILLIAM BULL, Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Rhubarb Roots—Rhubarb Roots.

RHUBARB ROOTS—5000 strong Linnæus for Sale. Apply to
WM. EARL, Farmwood Nursery, near Newport, Mon.

To the Trade.

ASPARAGUS, 1-yr., 2-yr., and 3-yr. TROPÆOLUM CANARIENSE.
JAMES BIRD, American Nurseries, Downham.

ASPARAGUS PLANTS, sufficient to plant 15 acres—from Connover's Colossal Seed, 10 acres, and from English Seed, the produce of fine plants, 5 acres.
Mr. R. FORMBY, Formby, near Liverpool.

Special Offer, to Clear the Ground.

MULBERRIES.—The finest lot of Standards in England; also a quantity of 1-yr. and 2 yr. old Plants. Prices low. Apply to
BENJAMIN R. CANT, Nurseryman, Colchester.

WANTED, 5000 to 10,000 EUONYMUS, in var., 1 foot 6 inches to 2 feet high; must be good bushy plants. Prices also invited for all kinds of COAST PLANTS. Cash payments.
THE MANAGER, St. George's Gardens, St. Anne's-on-the-Sea, Lancashire.

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WANTED, well-rooted clean 1-yr. struck MANETTI STOCKS. Lowest cash price to
PAUL AND SON, Old Nurseries, Cheshunt, N.

WANTED, MANETTI ROSE STOCKS. Send sample and price per 1000 to
CRANSTON AND MAYOS, Cranston's Nurseries, Hereford.

CONSIGNMENTS wanted of best FRUITS and VEGETABLES by GEO. LAXTON, JUN., Salesman, Covent Garden Market. Unexceptionable references as to cash returns.

WANTED, a quantity of DWARF BOX for edging. State price and quantity to offer.
FISHER, HOLMES AND CO., Handsworth Nurseries, Sheffield.

To Nurserymen.

ENGLISH BOX.—Required at once, about 150 yards of dwarf English Box (Buxus suffruticosa), var. humilis; also dwarf variegated, suitable for Embroidery on Gravel for Italian Garden.
Address, with price and full particulars, to T. H., 10, Waterford Road, Fulham, S.W.

SUTTON'S GRASS SEEDS for PASTURES, 22s. 6d. to 36s. per Acre. Carriage free.

SUTTON'S GRASS SEEDS for PARK GROUNDS, 20s. per Bushel. Carriage free.

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SUTTON AND SONS, The Queen's Seedsmen, Reading.

MR. LAXTON'S NEW PEAS—For descriptions of "The Shah" and "Standard," also of "Unique," "Dr. Hogg," "Connoisseur" and "Supplanter"—Four First-class Certificates—see large Advertisement at p. 232 of last week's *Gardeners' Chronicle*.
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Cheap Avenue Trees.

HORSE CHESTNUTS, 6 to 8 feet, 15s. per 100. LIMES, 6 to 8 feet, 50s. per 100; 8 to 10 feet, 80s per 100. ENGLISH OAKS, 6 to 8 feet, 15s. per 100 POPLARS, 8 to 10 feet, 50s. per 100. All good selected trees.
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JAMES SMITH, Darley Dale Nurseries, near Matlock, offers 100,000 MOUNTAIN ASH, an excellent tree for underwood, 2 to 3 feet, 22s. per 1000; 3 to 4 feet, 27s. 6d. per 1000; 4 to 5 feet, 30s. per 1000; 5 to 6 feet, 50s. per 1000; also up to 8, 10, and 12 feet.

PINES.—For Sale, a lot of clean Succession Pines and strong Suckers. For particulars, apply to
Mr. THACKRAY, Dodworth Grove, near Barnsley.

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LOMBARDY POPLARS, fine large, 20 to 30 feet high, 3s. to 5s. each. Delivered on Rail.
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J. HARTNELL, Bailiff, Houghton Hall, Rougham, Norfolk.

LIMES, ELMS, and CHESTNUTS—splendid trees, carefully grown, pruned, and frequently transplanted, with straight stems, good heads, stout and well rooted, in great quantity, at low prices.
EWING AND CO., Norwich.

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H. LANE AND SON have a very fine lot of PEACHES, NECTARINES, and APRICOTS well set with fruit-buds, at 5s. each.
The Nurseries, Great Berkhamsted, Herts.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Figs Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH, Nurseryman and Seed Merchant Worcester.

Notice.—Seeds, Seeds.

WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds.
CATALOGUES now ready, which contain every requisite, at fair prices, post-free on application.
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TO THE TRADE.—DAHLIAS, pot roots; ASPARAGUS, SEAKALE. Prices on application to
KELWAY AND SON, Langport.

Vines, Vines, Vines.

B. S. WILLIAMS begs to announce that his stock of VINES is now in fine condition, and ready for sending out. It comprises all the leading kinds, strong Canes of Pearson's Golden Queen.
For prices and description see BULB CATALOGUE.
Victoria and Paradise Nurseries, Upper Holloway, London, N.

VINES.—Fine CANES, some hundreds at 42s. per dozen for planting. FRUITING SIZED CANES, first-class quality, 10s. 6d. each. Usual discount to the Trade. List of sorts on application.
E. G. HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, N.W.

PARSNIP SEED.—True Guernsey Hollow Crown, 6d. per oz., free by post on receipt of stamps.
J. H. PARSONS, Market Place, Guernsey.

Mangel and Swede.

JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself.
Bardney Manor, Lincoln.

To the Trade.

MAIDEN APRICOTS, PEACHES and NECTARINES, magnificent trees. Price on application.
JAMES DICKSON AND SONS, Newton Nurseries, Chester.

SEED POTATOS for Sale—a great variety. List of prices sent post free on application.
JOHN BATH, Potato Salesman, 24, Wellington Street, Covent Garden, W.C.

SALES BY AUCTION.

City Auction Rooms, 38 & 39, Gracechurch Street, E.C.

IMPORTANT SALE of about 200 choice Double CAMELLIAS, 2 to 4 feet, English grown, and beautifully furnished with bloom-buds; choice AZALEA INDICA, ERICAS, EPACRIS, FUCHSIAS, DAHLIAS, &c., and a superb assortment of Standard, Dwarf, and Climbing ROSES, of the best varieties; selected FRUIT TREES, CONIFERÆ, and EVERGREEN SHRUBS, hardy AMERICAN PLANTS, with some choice LILIUMS, GLADIOLUS, RANUNCULUS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City uction Rooms, E.C., on TUESDAY, February 29, at half-ast 12 o'Clock precisely.

On view the morning of Sale. Catalogues may be had at the Rooms, and of the Auctioneers, &c., 98, Gracechurch Street, E.C., and Leytonstone, E

Hendon, Middlesex, N.W.

Dissolution of Partnership of the old-established Firm of Messrs. J. and A. Wright. The first of four important CLEARANCE SALES, LEASE and STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, without reserve, on the Premises, The Bell Lane Nurseries, Hendon, Middlesex, N.W., on TUESDAY, February 29, and two following days, at 11 for 12 o'Clock each day, the whole of the thriving and particularly well grown NURSERY STOCK extending over 11 acres and comprising thousands of Standard Roses, also several quarters of Briers just planted; many thousands of Forest Trees; 2000 fine Limes, 10 to 12 feet; 10,000 Ligustrum ovalifolium; considerable quantity of Laurels, Cupressus, Berberis, and other useful shrubs; 2000 bushy Aucubas, thousands of hardy Climbers in pots. Also four strong, useful HORSES, bred on the premises, a large spring MARKET VAN, two strong light CARTS, capital DOG-CART, sets of Harness, Garden Implements, and other effects. The valuable LEASE of this Nursery will be offered on the first day of Sale, at 12 o'Clock precisely, prior to the sale of the Stock.

N.B. The Sales of the remaining Leases and Stock will take place in the following order:—

March 7, 8 and 9, at the Church End Nursery, Hendon, Middlesex, N.W.

March 14 and 15, at the Nursery, Mill Hill, Hendon, Middlesex, N.W.

March 17, at the Nursery, Edgware, W.

The Stock, &c., may be viewed any day prior to the Sales. Catalogues of Stock, printed Particulars of Leases, may be obtained at the several Nurseries; of Messrs. ALLEN AND SON, Solicitors, 17, Carlisle Street, Soho, W.; and of the Auctioneers and Valuers, 98, Gracechurch Street, City, E.C.

Hendon, Middlesex.

Dissolution of Partnership of the Firm of Messrs. J. and A. Wright.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, without reserve, on the Premises, Church End Nurseries, Hendon, about three-quarters of a mile from two railway stations, on TUESDAY, March 7, and THREE FOLLOWING DAYS, at 11 for 12 o'Clock each day, the whole of the thriving NURSERY STOCK, comprising thousands of Ornamental and Forest Trees, including 2000 Limes, Planes, &c.; also great quantities of Aucubas, Rhododendrons, Cupressus, Green and Variegated Hollies, Thujas, thousands of Berberis, Standard Roses, Fruit Trees, Guelder Roses, Virginian Creepers in pots, and a miscellaneous assortment of other shrubs; also some Greenhouse Plants. SIX GREENHOUSES, FOUR BOILERS, and a quantity of HOT-WATER PIPING, &c.; also the VALUABLE LEASE of this Nursery, which will be offered on the first day, at 12 o'Clock precisely.

May be viewed prior to Sale. Catalogues of Stock and Particulars of Sale may be had on the Premises; of Messrs. ALLEN AND SON, Solicitors, 17, Carlisle Street, Soho, W.; and of the Auctioneers.

N.B. The sales of the remaining Leases and Stock will take place in the following order:—

March 14 and 15, at the Nursery, Mill-hill, Hendon, Middlesex.

March 17, at the Nursery, Edgware.

Clarendon Nursery, Maida Vale, St. John's Wood, and WILLESDEN, MIDDLESEX.

Highly Important to NURSERYMEN, FLORISTS, SEEDSMEN, and OTHERS desirous of securing a most valuable LEASEHOLD PROPERTY at the West End of London, universally renowned as one of the first Floral Establishments in the United Kingdom, patronised by the Nobility and the leading Gentry.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. F. Videon to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on MONDAY, March 13, at 1 for 2 o'Clock precisely, the valuable LEASES and GOODWILL of the old-established NURSERY GROUNDS, known as Clarendon Nursery, occupying the choicest position in the centre of the most aristocratic and *elite* of London Society, possessing 341 feet frontage, or thereabouts, to the Maida Vale and St. John's Wood Roads, London, N.W., and containing an area of about three-quarters of an acre of very Choice Land, with the following glass erections and other offices standing thereon:—An elegant modern Circular and Iron Roof Conservatory, communicating with Shop and Office; the extensive Range of Greenhouses and Forcing Pits, fitted up with modern appliances. There is likewise a convenient Twelve-roomed Detached Family Residence, excellent Stabling and Coach-houses. The whole is held under leases of the average term of forty years unexpired, at the exceedingly low ground rent of £42 per annum. Also the LEASE of the BRANCH NURSERY at WILLESDEN, with several newly-erected Greenhouses and other Buildings standing thereon.

Particulars of Sale may be had, when ready, of J. A. BERTRAM, Esq., 22, Chancery Lane, W.C.; and of the Auctioneers and Valuers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Lilies, Gladioli, Seeds, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, February 28, at half-past 12 o'Clock precisely, a great variety of rare LILIES and scarce HERBACEOUS PLANTS, from Japan, North America, and other parts; 4000 fine Bulbs of LILIUM AURATUM, from Japan; 500 Bulbs of L. KRAMERI, choice GLADIOLI and RANUNCULI, and an importation of CALIFORNIAN TREE SEEDS.

On view the morning of Sale, and Catalogues had.

Periodical Sale of Poultry and Pigeons.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, February 29, at half-past 12 o'Clock precisely, White Cochins and Light Brahmas, from R. A. Boissier, Esq., well-known yards; Dorkings from J. W. Taylor, Esq.; Cochins and Dorkings from the Rev. G. Gilbert; East India Ducks from H. Rae Reid, Esq.; Yellow Magpies from Mr. P. H. Jones; Carriers, Owls, Dragons and Kites from Mr. Palmer; and a variety of other Poultry and Pigeons from well-known breeders and exhibitors.

On view the morning of Sale, and Catalogues had.

Plants and Bulbs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, March 1, at half-past 12 o'Clock precisely, first-class Standard, Dwarf, and Climbing ROSES, from well-known English growers; CAMELLIAS, INDIAN AZALEAS, and PALMS, from Ghent; FRUIT TREES, Hardy and Ornamental TREES and SHRUBS, HERBACEOUS PLANTS, GLADIOLI, LILIUMS, and RANUNCULI, RUSTIC GARDEN WORK, &c.

On view the morning of Sale, and Catalogues had.

Established and Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, March 2, at half-past 12 o'Clock precisely, a Collection of Established ORCHIDS, including many rare and valuable sorts, the property of a gentleman giving up their culture; also several importations of Orchids from New Grenada and other parts

On view the morning of Sale, and Catalogues had.

Conifer Seeds.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, February 28, a large quantity of choice kinds, just received from California in excellent condition.

On view the morning of Sale, and Catalogues had.

Sarracenia Drummondii.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, March 2, a large quantity of this extremely beautiful rare plant, which has just been received in the best possible condition.

On view the morning of Sale, and Catalogues had.

Prize Amaryllis.

MR. J. STEVENS has been favoured with instructions from Charles Kieser, Esq., of Broxbourne, to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, March 9, at half-past 12 o'Clock precisely, his entire, extensive, and unique COLLECTION of AMARYLLIS SEEDLINGS, raised by him, which always gained the First Prizes at the Shows of the Royal Horticultural Society and Royal Botanic Society, and a number of First Class Certificates, and were so favourably noticed by all Floral Magazines.

May be viewed the morning of Sale, and Catalogues had shortly.

Pine-apple Nursery, Edgware Road.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions from Mr. J. Weeks to offer for SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., almost without reserve, about the MIDDLE of APRIL, the Valuable PREMISES and GOODWILL of the PINE-APPLE NURSERY, Maida Vale, Edgware Road, W., together with Dwelling-house, Seed Shop, and Offices, and all the extensive ranges of Horticultural Buildings and Sheds.

Held:—As to part, for a term which will expire in 1909, at a Ground-rent of £45; and, as to the remainder, for a term which will expire in 1923, at a Ground-rent of £80. The Nursery has, within the last three or four years, been very greatly enlarged and improved, upwards of £10,000 having been expended in additions, improvements, and repairs; and it is considered in the Trade to be the most important Establishment of the kind in the World. It possesses an extensive connection both in the Nursery and Seed Trade, amongst the Nobility and Gentry and their Gardeners. Part of the purchase-money may remain on Mortgage.

Nurseries in the immediate neighbourhood of London are seldom valued by the acre; but this is an exception, as the Horticultural Buildings and Show-grounds cover about 2½ Acres, and form a most valuable property, and well adapted for a Skating Rink (permission for which can no doubt readily be obtained), as well as a Nursery Business.

For further particulars apply to Messrs. KEARSEY, SON, AND HAWES, 35, Old Jewry, London, E.C.; and Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

The Pine-apple Nursery, Maida Vale, W.

PROPOSED PARTNERSHIP.—The Advertiser, a Gentleman in the Trade, who believes that the above Nursery possesses great facilities for doing an extensive First-class Business, would be happy to meet with a thorough practical Horticulturist, with Capital at command, to join him on equal terms in the purchase of the Business, and for carrying it on in Partnership.—For an introduction, apply to Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

Preliminary.—Sale of a very Valuable Collection of Specimen and Half-specimen STOVE and GREENHOUSE PLANTS, the whole of which have been exhibited.

ARTINGSTALL AND HIND (the surviving Partners of the late Firm of CAPES, DUNN & Co.) beg to announce that they have received instructions from Messrs. E. Cole & Sons to SELL by AUCTION, about the middle of April, at their Nurseries, Withington, near Manchester, the valuable Collection of EXHIBITION PLANTS.

Catalogues will be prepared in due course, and further information may be had by applying to the Auctioneers, 5, Princess Street, Manchester.

WANTED, at once, to PURCHASE, the BUSINESS of a SMALL NURSERY or FLORIST in the Country. £100 could be paid down at once for valuation. HERBERT, Grosvenor Post-office, Bath.

TO BE LET, a FLORIST SHOP. Landlord will spend £200 for the erection of Show and Plant Houses. Good Premises, with Stabling. Splendid position in South Kensington. A Partnership would be entertained. Apply, 13, Alfred Place Wes, South Kensington, W.

Antibes.

FOR SALE, the BEAUTIFUL PROPERTY of the late Mons. G. THURET, the eminent French Botanist, measuring about 12 acres, at Cape Antibes, on the shores of the Mediterranean. The Garden contains an almost unrivalled collection of Exotic and other Plants, accumulated during the past fifteen years by the late owner, estimated at 3000 species, living in the open air. For full descriptions, with cuts, see *Gardeners' Chronicle*, December 4, 1869; January, 30; February 13, 20; April 17; and July 31, 1875. The House, containing the usual reception rooms and five bedrooms, is in good order; it commands the most lovely views of the Bay of Nice, the Esterelles Mountains, and the snowy range of the Alpes Maritimes. There is a large Kitchen Garden, also convenient Outhouses, a Cottage, and Stabling. Apply to

Dr. E. BORNET, Antibes; or to T. HANBURY, Palazzo Orengo, Mentone.

To Florists.—Sevenoaks, Kent.

TO BE LET, with Immediate Possession, in consequence of the failure of health, the GROUNDS, PREMISES, and BUSINESS of a FLORIST. Apply to J. VOLLER, Sevenoaks.

Special Offer, to Clear the Ground.

PEARS.—A superb lot of extra tall and strong Standards. Prices low. Apply to BENJAMIN R. CANT, Nurseryman, Colchester.

LARCH—20,000, 18 inches to 2 feet; 30,000, 2 to 3 feet, transplanted.

G. CHORLEY, Coaster's Nursery, Midhurst.

The Longest-podded Bean is

NEW GIANT SEVILLE LONGPOD. This is the longest-podded Bean known. We grew some last year 1 foot in length. It is also very handsome in shape. Was awarded a First-class Certificate by the Royal Horticultural Society. Price 2s. 6d. per quart.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

New Roses for 1876

JOHN FRASER, of the Lea Bridge Road Nurseries, Leyton, has now ready for delivery strong plants of the best varieties of NEW ROSES for 1876. Descriptive Priced List on application.

CABBAGE PLANTS for Sale.—Good strong well-rooted Plants of Early Battersea, Enfield Market, Improved Nonpareil, and Robinson's Champion Cattle Cabbage, delivered free on rail at 3s. per 1000, package included. Cash to accompany all orders.

S. BIDE, Alma Nursery, Farnham, Surrey.

Hardy Florists' Flowers.

THOMAS S. WARE has much pleasure in announcing that his CATALOGUE for 1876 of the above will be forwarded in a few days to each of his patrons, also post-free on application.

Hale Farm Nursery, Tottenham, London, N.

Hardy Perennials Illustrated.

THOMAS S. WARE has pleasure in announcing that his CATALOGUE for 1876 of the above will be distributed in a few days to each of his patrons, also post-free on application.

Hale Farm Nursery, Tottenham, London, N.

FOR SALE.—CUCUMBER, STRAWBERRY, CABBAGE, and CAULIFLOWER PLANTS; dwarf Moss and Cabbage ROSES; LIME and CHESTNUT TREES; and large, well-furnished LAURELS, 6 feet high; or will EXCHANGE for large or small CAMELLIAS.

G. WALKLING, College Park Nursery, Lewisham, S.E.

To Farmers, Gardeners, and Others.

CABBAGE PLANTS, Enfield Market, true, the best in England, 2s. 6d. per 1000: SEAKALE, for forcing, 10s. per 100; planting out, 4s. per 100; SOVEREIGN RHUBARB, best and earliest roots in cultivation, 6s. per dozen; planting out, 1s. per dozen; SAGE and THYME, splendid roots, 5s. per 100; WHITE SPANISH ONION, seed, all new and genuine, 1s. 8d. per lb. Terms cash.

RICHARD WALKER, Market Gardens, Biggleswade, Beds.

Johnstone's St Martin's Rhubarb.

EARLIEST and BEST in CULTIVATION for Open Ground; has a splendid colour, and excellent for Forcing. Strong roots, 9s. per dozen. Trade price on application.

W. P. LAIRD AND SINCLAIR, Nurserymen, Dundee, N.B.

POLYANTHUS, choice mixed, 1s. 6d. per packet; also extra choice mixed (from fine laced flowers) 2s. 6d. per packet, post free. Flower Seeds of every description of the choicest quality.

JAMES DICKSON AND SONS, Seed Growers, 108, Eastgate Street, Chester.

Campanula Smithii.

W. SMITH begs to inform those interested in the Culture of Hardy Flowers that he intends to send out the above-mentioned beautiful Campanula in April next. Strong Flowering Plants, 3s. each. Price to the trade on application. Wilmot Road, Leyton, Essex.

Lilium auratum.—Orchids.

W. F. BOFF offers magnificent Bulbs of LILIUM AURATUM, at 6s., 9s., and 12s. per dozen; one of each size post-free for 36 stamps. W. F. B. also offers ORCHIDS, good sorts, nice plants, at 21s., 30s., and 42s. per dozen.

203, Upper Street, Islington, N.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.

Mr. WEBB, Calcot, Reading.

The Best Beet is

SUTTON'S IMPROVED DARK RED. "Your Improved Dark Red Beet is a first-rate sort, with dwarf crimson-coloured leaves. Excellent for bedding."—WM. PATERSON, *Gr. to* Her Majesty the Queen, Balmoral.

Per ounce, 1s. 6d.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

The Best Wax-pod or Butter Bean is

MONT D'OR, a remarkably early and distinct French variety, producing an immense quantity of wax-like pods, very tender and fleshy; leaves small and pale in colour. Awarded First-class Certificate by the Royal Horticultural Society. Per quart, 2s. 6d.
SUTTON AND SONS, The Queen's Seedsmen, Reading.

Silver Fir (Picea pectinata)

EWING AND CO. beg to offer several thousands, 2 to 3 feet, also PICEA PINSAPO, 3 to 4 feet, clean well furnished plants, extra transplanted, with fine roots, cheap. Prices on application.
Royal Norfolk Nurseries, Eaton, near Norwich.

PANSIES, Show and Fancy, the leading sorts, per 100 or 1000.
Bedding Pansy, "Royal Blue," awarded "Best Blue Pansy," Scottish Pansy Show, Edinburgh, June, 1875. Prices on application.
WM. PAUL, Crossflat and Greenlaw Nurseries, Paisley.

Special Notice.

CHARLES SHARPE AND CO., SEED GROWERS, Sleaford, have a surplus stock of PATERSON'S VICTORIA and DUNBAR REGENT, grown on their own Farm from seed direct from Scotland last year. Price on application.
CHARLES SHARPE AND CO., Sleaford; and at 31, Seed Market, Mark Lane, London, E.C.

RICHARD SMITH'S FRUIT LIST contains a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c. Free by post for one stamp.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

To the Trade.—Seed Potatos.

H. AND F. SHARPE are prepared to make Special Offers of SEED POTATOS grown on their own Farms from the finest selected stocks. Their List this season comprises all the English and American varieties worthy of cultivation. The prices will be found very moderate.
Seed-growing Establishment, Wisbech.

RHODODENDRONS.
2-yr. seedlings, | 4 to 8 inches, transplanted.
3 yr. seedlings, | 6 to 10 inches, transplanted.
8 to 12 inches, transplanted.
For Prices and Samples apply to
HENRY FARNSWORTH, Matlock Bank, Derbyshire.

Genuine Seeds.

J. LAING'S CATALOGUE of KITCHEN GARDEN, FLOWER and AGRICULTURAL SEEDS, IMPLEMENTS, GARDEN REQUISITES, &c., is now ready, and can be had free on application.
Stanstead Park, Forest Hill, S.E.

TO THE TRADE.—LARCH, strong, 2 to 2½ and 2½ to 3½ feet, clean grown and well-rooted. PEAR STOCKS, twice transplanted; 2-yr. seedling PEARS, ASH, 1½ to 2½ feet, and 1-yr. seedlings. GEANS, 1-yr. seedlings. VIOLAS and PANSIES, bedding; and Show and Fancy do. PHLOXES, early and late.
DICKSONS AND CO., 1, Waterloo Place, Edinburgh.

PEAR STOCKS.—The Subscribers have on hand a quantity of 3-yr. transplanted Pear Stocks, very fine, which they will dispose of very cheap, as the ground must be cleared.
THOMAS METHVEN AND SONS, Leith Walk Nurseries, Edinburgh.

The Best and Most Distinct Wrinkled Pea is

SUTTON'S GIANT EMERALD MARROW.
"I consider your 'Giant Emerald Marrow' to be altogether a splendid Pea, quite distinct, decidedly an acquisition."—JOHN TOWILL, *Gr. to the* Right Hon. the Earl of Glasgow.
Per quart, 5s.
SUTTON AND SONS, The Queen's Seedsmen, Reading.

NEW DOUBLE IVY-LEAF PELARGONIUM, "KONIG ALBERT;" good plants, 3s. each, 30s. per dozen.
NEW ZONAL and NOSEGAY PELARGONIUMS of 1875, 9s. per dozen, own selection. Terms cash.
ELCOMBE AND SON, Florists and Nurserymen, Romsey.

CUCUMBER PLANTS—"TELEGRAPH," strong plants, now ready. Price, including box and packing, 12s. per dozen.
A. WATKINS, Nursery, Bishop Stortford.

To the Trade.

Home-grown GARDEN and AGRICULTURAL SEEDS.
H. AND F. SHARPE'S Wholesale Special Priced LIST of the above Seeds of 1875 growth is now ready; it comprises all the best sorts in cultivation. The quality is very fine, and the prices will compare favourably with those of other growers.
Seed Growing Establishment, Wisbech.

Fruiting Vines.

H. LANE AND SON have still some fine Fruiting Canes to offer, of their usual excellent quality. H. L. AND SON have always taken the First Prize for Vines in Pots at all the leading exhibitions. The Vine eyes, being taken from our own Vineries, may be depended on as true to name.
The Nurseries, Great Berkhamsted, Herts.

POTATOS for Planting.—Notwithstanding the great demand for the Snowflake and Eureka (those extraordinary croppers), the undersigned has them still in stock, to offer by the pound, stone, hundredweight, or ton, with most of the leading English and American varieties. Prices on application.
CHRISTMAS QUINCEY, Potato Grower and Merchant, Peterborough.

Cheap Surplus Stock.

HORSE CHESTNUTS, 4 to 6 feet, 60s. per 1000. ENGLISH OAKS, 4 to 6 feet, 50s. per 1000. SPRUCE FIR, 1½ to 2 feet, 60s. per 1000; 2 to 3 feet, 100s. per 1000. LAURELS, 1½ to 2 feet, 60s. per 1000; 2 to 3 feet, 100s. per 1000, all well transplanted and bushy.
R. TUCKER, The Nurseries, Faringdon, Berks.

The Most Beautiful new Pelargonium is

BEAUTY OF OXTON.
Price, 1 guinea each.
A pretty and charming novelty is the new double flowering IVY-LEAVED PELARGONIUM, "KONIG ALBERT." Price 7s. 6d. each
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

RASPBERRY CANES.—To be Sold cheap, a large quantity; also 2-yr. old BLACK and RED CURRANT BUSHES. Apply to
S. HEIGHT, Foremin, Farnborough Hall Farm, Farnborough, Kent, or to Mr. C. M. DERRY, Gedney, Lincolnshire.

Centaurea candidissima, or Ragusina.
WHOLESALE PRICE.

WOOD AND INGRAM offer fine summer sown plants of the above, thoroughly established in thumb pots, at 20s. per 100; package, 3s. 6d. per 100, or 2s. for 50, not less than which will be sold at the price
The Nurseries, Huntingdon.

YOUNG'S NONSUCH PEA.—The best of all the tall Marrowfat Peas. Supplied by all the Trade and by
CHAS. YOUNG, The Nursery, Balham Hill, London, S.W.

POTATOS, EARLY ROSE.—An offer wanted for 5 tons, by letter to
C. C. C., Wm. Dawson & Sons, 121, Cannon Street, London, E.C.

FOREST TREES, the quickest growing. For particulars, see *Gardeners' Chronicle*, p. 102, Feb. 5.
W. JACKSON AND CO., Nurseries, Bedale, Yorkshire.

AUSTRIAN PINES, extra fine, 5 to 6 feet high, 12s. per dozen, 75s. per 100.
ELCOMBE AND SON, The Nurseries, Romsey.

To the Trade.

VICTORIA PLUMS, dwarf-trained, by the 100, and other leading sorts—the finest trees in the trade, having five to fifteen strong vigorous branches each, 120s. to 150s. per 100; also Maiden Victoria, 5 feet high, fine, 40s. per 100. EWING AND CO., Norwich.

CURRANTS and GOOSEBERRIES.—A large surplus stock of 3-yr. to 5-yr. Red Currants, 50s. per 1000; Black Currants, 70s. per 1000; Gooseberries, 100s. per 1000. T. EVES, Gravesend Nurseries.

SEED POTATOS.—We can still offer fine samples of Mona's Pride, Myatt's Prolific, Sutton's Racehorse, American Early Rose, Rivers' Royal Ashleaf. Prices moderate, and will be quoted on application.
JOHN AND GEORGE MCHATTIE, Seed Merchants, Chester.

The Best White Spined Cucumber is

SUTTON'S DUKE OF CONNAUGHT.
"Quite tender and deliciously flavoured; for beauty and quality cannot be surpassed."—SHIRLEY HIBBERD.
"The best I ever saw."—R. DRAPER, *Gr. to the* Right Hon. Earl Vane.
"Most excellent."—C. PENNY, *Gr. to* H.R.H. the Prince of Wales. Per packet, 2s. 6d.
SUTTON AND SONS, The Queen's Seedsmen, Reading.

PINES and CUCUMBERS.—For Sale, 100 healthy and clean Pines, in 6-inch pots, potted last July; also Plants of Cucumbers—Telegraph, 1s. each, and Tender and True, 1s. 6d. each; both sorts are true. Money must accompany orders.
J. METCALFE, Gardener, Elsham House, Grantham, Lincolnshire.

J. AND G. LOWE beg to offer AUCUBA JAPONICA, 1 to 1½ foot, 24s. per 100; also six best CHRYSANTHEMUMS, White, Yellow, and dark, large roots, 3s. per dozen, for cash.
Kingston Lane Nursery, Uxbridge.

CALCEOLARIA AUREA FLORIBUNDA and GOLDEN GEM, autumn-struck, clean, healthy, and vigorous, 5s. per 100, 40s. per 1000, package free. "Cash," Post-office Order on Chester
FIELD BROTHERS, Tarvin Road Nursery, Chester

GIANT ASPARAGUS PLANTS, the best that money can procure, all certain to grow, 2s. 6d. per 100. This delicious vegetable does not require half the expense usually incurred in planting it. See RICHARD SMITH'S SEED LIST for 1876.
Extra strong SEAKALE, 2s. per dozen.
RICHARD SMITH, Nurseryman, Worcester.

SPECIAL OFFER of SEEDLING RHODODENDRONS, 2-yr. and 3-yr., £7 10s. and £12 10s. per 100,000; 4-yr. and 5 yr., 7s. 6d. and 10s. per 1000.
JOSEPH SMITH, Jun., Moor Edge Nurseries, Tansley, near Matlock, Derbyshire.

Covert Plants.

PETER S. ROBERTSON AND CO., NURSERYMEN, Edinburgh, offer, at cheap rates, BLACKTHORN, ENGLISH MAPLE, BROOM, FURZE, 1 to 2 feet high.

100,000 Vesuvius. Special Offer.

WILLIAM BADMAN offers good Autumn-struck Plants, from single pots, 10s. per 100, or 85s. per 1000; from store pots, 8s. per 100, or 75s. per 1000, package included. Terms cash
Cemetery Nursery, Gravesend.

NEW AND GENUINE GARDEN AND AGRICULTURAL SEEDS.—Special prices and advantageous offers of above on application. Urgent orders, or orders by telegraph will be promptly attended to.
ALFRED LEGERTON, Seed Merchant, 5, Aldgate, London, E.

FOREST TREES for SALE.
LAURELS, Common, 1 yr., 9 to 12 inches; do., 2-yr., 1½ to 2 feet.
EVERGREEN PRIVET, 2 to 2½ feet. [2 feet.
LAURUSTINUS, furnished, 2½ feet.
SPRUCE FIRS, 12 to 18 inches; do., 2½ to 3 feet.
LARCH, 2-yr., 1-yr. transplanted, 8 to 20 inches.
SWEET BAYS, 2½ to 4 feet, furnished; do., 2 to 3 feet.
WYCH ELM, 3 to 4 feet; do., 4 to 6 feet.
MICHAEL FLYNN, Sunningdale Nursery, Clonmel.

CHOICE HYBRID GLADIOLI.
The Gladiolus being a special feature in our business, we respectfully invite Growers of this magnificent Autumn Flower to send for our CATALOGUE of Prize Varieties before making their annual purchases. In it all the best sorts are described, and the prices quoted are very moderate.
ROBERTSON AND GALLOWAY, Seed Merchants and Nurserymen, 157, Ingram Street, Glasgow.

BEECH, BEECH, BEECH—2 to 3 and 3 to 4½ feet, well rooted, 7s. 6d. per 1000; also LAURUSTINUS, ARBUTUS, PORTUGAL LAURELS, PINUS INSIGNIS, CEDRUS DEODARA, THUJA GIGANTEA—all cheap.
SAMUEL BALE, Westacott Nursery, Barnstaple.

JOSEPH SMITH, SEN., Tansley and Scotland Nurseries, near Matlock, Derbyshire, has for Sale:—
RHODODENDRON PONTICUM, 4-yr. old seedlings, not grown on bog, but on heath soil, with fine roots; stiff healthy plants, 3 to 4 inches high, 55s. per 1000. Also Hybrid Catawbiense, named sorts, 7s. 6d. per 1000; with transplanted, from 1 to 1½ foot up to 3 and 4 feet, at very low prices, which can be had on application.
OAKS, large quantity, 3 to 4 and 4 to 5 feet.
With a GENERAL NURSERY STOCK. Prices on application.

Maiden Nectarine and Peach Trees.

JAS. GARAWAY AND CO. offer the undermentioned varieties, clean, well-grown stuff, at 60s. per 100:—Elruge, Pine-apple, and Pitmaston Orange NECTARINES; Bellegarde, Barrington, Late Admirable, Noblesse, Royal George, and Walburton Admirable PEACHES.
JAS. GARAWAY AND CO., Durdham Down Nurseries, Clifton, Bristol.

SPECIMEN TREES and SHRUBS.—WELLINGTONIAS, 14 to 16 feet; THUJA LOBBII, 12 to 15 feet; LAURUSTINUS, bushy, 5 feet; PICEA PINSAPO, Sweet BAYS, Evergreen OAKS, in pots; CEDRUS ROBUSTA, &c., moved Spring, 1873 List sent. CLARKE, Nursery, Wellington, Somerset.

To the Trade.

JACS. JURRISSEN AND SON beg to call particular attention to their large stock of FRUIT TREES, Dwarf-trained PEACHES and APRICOTS, Standard ORNAMENTAL TREES and SHRUBS, HOLLIES, ROSES, CONIFERÆ, and FOREST TREES.
Wholesale TRADE LIST now ready, free on application.
Nurseries, Naarden, near Amsterdam, Holland.

EXCELLENT GARDEN SEEDS.
CHOICE FLOWER SEEDS.
SUPERIOR FARM SEEDS.
See Illustrated and Priced LIST, to be had free on application. The superiority of these Seeds is proved by the numerous testimonies constantly received, and those who wish for a superior article should order at once of
HARRISON AND SONS, Seed Growers, Leicester.

VINES.—A superior lot of fine CANES of all the leading sorts for Planting or Fruiting, will carry several fine bunches this year; 5s. each. L. W.'s system of packing saves half the cost of carriage.
LEWIS WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

Verbenas, Verbenas, Verbenas.

WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

VERBENAS, VERBENAS, VERBENAS—White, Purple, Scarlet, and Pink; also twelve extra choice named varieties, strong, healthy-rooted cuttings, perfectly free from disease, 6s. per 100, 50s. per 1000, for cash.
H. BLANDFORD, The Dorset Nurseries, Blandford.

NEW PEAR, "LUCY GRIEVE."—First-class Certificate; described in Dr. Hogg's new *Fruit Manual*, and in our own CATALOGUES.
E. G. HENDERSON AND SON, Wellington Nursery St. John's Wood, London, N.W.

To the Trade.

SEAKALE, for planting, very fine, 30s. per 1000. 100,000 COMMON LAURELS of all sizes, from 1 foot to 5 feet, price on application.
WM WOOD AND SON, Woodlands Nurseries, Maresfield, Uckfield, Sussex.

FRUIT TREES.—One of the largest stocks in the county, consisting of Standard and Pyramid CHERRIES, APPLES, PEARS, and PLUMS, from 70s. per 100. Also a large quantity of extra strong Standard and Espalier GREEN GAGES. Catalogues of
T. EVES, Gravesend Nurseries.

The Best Lawn Mixture

JAMES DICKSON & SONS' FINEST LAWN MIXTURE, for Forming New or Renovating Old Lawns, is VERY SUPERIOR to all others.
108, EASTGATE STREET, CHESTER.

Special Offer.

LAURELS.—A large quantity, suitable for Shrubberies, Game Covers, &c., in good condition for removal, 2 to 3 feet, 12s. per 100; 3 to 3½ feet, 15s. per 100, package free.
G. M. DARBYSHIRE, The Nurseries, Enderby, near Leicester.

VEITCH'S IMPROVED ASHLEAF KIDNEY POTATOS, warranted true. Cash price, 6s. per bushel.
G. STEVENS, St. John's Nursery, Putney, S.W.

The Finest Potato at present known

SUTTON'S NEW LATE KIDNEY, "MAGNUM BONUM."
Opinion of SHIRLEY HIBBERD, Esq., *Stoke Newington, Nov. 8, 1875.* "Your new Magnum Bonum Potato singularly combines beauty of appearance with high quality, and I believe it will prove the most generally useful variety ever put into commerce."—SHIRLEY HIBBERD.
Price 6s. per gallon, 10s. 6d. per peck, 35s. per bushel.
SUTTON AND SONS, The Queen's Seedsmen, Reading.

The Best Flavoured Pea is

SUTTON'S DUCHESS of EDINBURGH.

"I consider your 'Duchess of Edinburgh' the best Pea grown, of excellent flavour, good cropper, and a decided improvement on any other variety."—ROBERT SOWERBY, *Gr. to the* Right Hon. the Earl of Macclesfield.

Per quart, 3*s.* 6*d.*

SUTTON AND SONS, The Queen's Seedsmen, Reading.

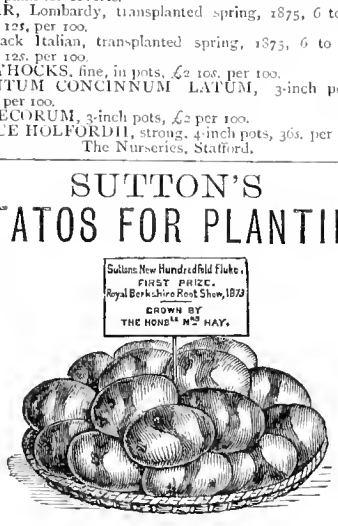
HANDSOME LAWN TREES and EVERGREENS.

PICEA MAGNIFICA, true, 2 to 5 ft., 21*s.* each and upwards.
P. AMABILIS, true, 2 to 3 feet, 10*s.* 6*d.* each and upwards;
P. NOBILIS, 1 to 6 feet, 2*s* each and upwards; P. NORDMANNIANA, selected varieties, 5 feet, 7*s.* 6*d.* each and upwards; P. PARSONSI, 4 to 10 feet, 15*s.* each and upwards; P. NOBILIS GLAUCA, 2 to 5 ft. 7*s.* 6*d.* each and upwards.
CUPRESSUS LAWSONIANA, in fine selected variegated and other varieties.
RETINOSPORA, in great variety, variegated and others.
THUJA, CUPRESSUS, CEDRUS, and ABIES, in many varieties, and nearly every variety of CONIFERÆ, offered at very low prices, to effect a clearance.
Some of the above, being selected seminal varieties, are very magnificent specimens. They have been carefully transplanted and grown for Sale. Application, either personally or by letter, at The Gardens, Whitchurch Rectory, Edgware, N.W., will receive every attention.

Surplus Stock.

SANDY AND SON beg to offer the following articles, of which they hold large stocks: all are well grown and finely rooted:—
LAURELS, Common, 3 to 4 feet, very bushy and fine, £1 per 100; £7 10*s.* per 1000.
PRIVET, Box-leaved, 1½ to 2 feet, very bushy and fine, £1 10*s.* per 1000.
MAHONIA (Berberis) AQUIFOLIA, 1 to 1½ feet, very bushy and fine, £2 per 1000.
COTONEASTER SIMONSII, 3 to 4 feet, transplanted, very bushy and fine, 10*s.* per 100, £4 per 1000. A splendid plant for coverts.
POPLAR, Lombardy, transplanted spring, 1875, 6 to 8 feet, 12*s.* per 100.
,, Black Italian, transplanted spring, 1875, 6 to 8 feet, 12*s.* per 100.
HOLLYHOCKS, fine, in pots, £2 10*s.* per 100.
ADIANTUM CONCINNUM LATUM, 3-inch pots, £2 per 100.
,, DECORUM, 3-inch pots, £2 per 100.
STATICE HOLFORDII, strong, 4-inch pots, 36*s.* per dozen.
The Nurseries, Stafford.

SUTTON'S
POTATOS FOR PLANTING.



SUTTON'S DESCRIPTIVE LIST
OF THE BEST
English and American Seed Potatos
Is now ready, and may be had gratis and post-free.

SUTTON & SONS,
THE QUEEN'S SEEDSMEN, READING.

MESSRS. BROWN AND CO. will forward the following Choice Plants to any part:—
25 AZALEAS, new hardy Belgian varieties, one of a sort, on their own roots, by name, 20*s.*
25 AZALEAS, American varieties, do., do., 15*s.*
12 Hardy RHODODENDRONS, including Scarlet, White, and Rose, one of a sort, 12*s.*
12 fine hardy Scarlet RHODODENDRONS, 10*s.*
Hardy HEATHS, LEDUMS, and KALMIAS, 6*s.* per dozen.
ROSES and FRUIT TREES of all kinds cheap.
American Nursery, Farnham, Surrey.

Ex. Ex. Choice Prize Flower Seeds.
Each 1*s.* per packet, post-free.

JOHN SCOTT, The Seed Stores, Yeovil, has to offer:—ASTER, French Perfection, 18 vars., do. Dwarf Bouquet, 8 vars.; STOCKS, Giant, Dwarf Ten-Weeks; HOLLYHOCK, 8 vars.; PETUNIA, 12 vars.; PHLOX DRUMMONDII, 12 vars.; WALLFLOWER, double; ZINNIA, double; CALCEOLARIA, dwarf, 20 vars.; CINERARIA; PRIMULA SINENSIS, 8 vars.; POLYANTHUS; DOUBLE SWEET WILLIAM; DOUBLE CONVOLVULUS MINOR.
The above are not to be surpassed.

Vegetable & Flower Seeds
Seed Potatos, Garden Tools &c
Superior quality, Carriage free
Descriptive Priced list post free,
James Dickson & Sons
"Newton" Nurseries and
108, Eastgate Street,
Chester.

CHOICE SEEDS, &c.—
CUCUMBER, Beauty of St. Albans, the best of the Telegraph section, 1*s.* 6*d.* per packet.
,, Telegraph, true stock, 1*s.* per packet.
,, Duke of Edinburgh (Daniels), 1*s.* per packet.
SOLANUM CAPSICASTRUM, hybrids, from plants selected from the three best stocks in Covent Garden, 6*d.* and 1*s.* per packet.
LOBELIA PUMILA MAGNIFICA, 1*s.* per packet.
CELOSIA PYRAMIDALIS, saved from Mr. R. S. Yates' fine strain, 6*d* and 1*s.* per packet.
LOBELIA PUMILA MAGNIFICA, seedling plants, 5*s.* per 100; plants from cuttings, 12*s.* 6*d.* per 100.
All orders prepaid.
J. BESTER, White Hart Lane, Tottenham, N.

Dwarf Maiden Peaches and Nectarines, true to name.
Price 50*s.* per 100.

THOMAS WARNER can still supply the following:—
PEACHES—Crimson Galande, Dagmar, Dr. Hogg, Early Albert, Early Alfred, Early Ascot, Early Leopold, Early Silver, Rivers' Early York, Lord Palmerston, Magdala, Nectarine Peach, Princess of Wales, Radclyffe, Sea Eagle, Stump the World.
NECTARINES—Albert Victor, Dante, Darwin, Elruge, Hardwicke Seedling, Humboldt, Large Elruge, Lord Napier, Pine Apple, Rivers' Orange, Stanwicke Elruge, Victoria, Violette Hative, Rivers' White.
The Nurseries, Leicester Abbey.

SNOWFLAKE POTATO—Having grown and imported largely of this splendid new variety, we can offer FINE ENGLISH-GROWN SEED, price 6*d.* per lb.; 6*s.* per peck of 14 lb.; 21*s.* per bushel of 56 lb. Much cheaper by the sack or ton.
FINE IMPORTED TUBERS, same price. Orders of 21*s.* and upwards carriage paid.
P. M'KINLAY, Esq., Beckenham, a well-known authority, writing of this Potato in the *Gardeners' Magazine*, Jan. 15 last, says:—"My experience with American varieties has been somewhat extensive, and I find that they generally improve as they become acclimatised. . . . I have no doubt Snowflake will improve in quality, and will become one of the best in cultivation."
DANIELS BROTHERS, Seed Growers, Norwich.

SELECT VEGETABLE and FLOWER SEEDS.—Amateurs and others who may be at a loss in making a suitable selection of Seeds for the Garden, will be greatly aided by referring to our Priced Descriptive CATALOGUE of VEGETABLE and FLOWER SEEDS for 1876, which will be sent free on application. All seeds delivered free of carriage as formerly.
THOMAS KENNEDY AND CO., Seed and Nursery Establishment, Dumfries, N.B.

JOSEPH SMITH, JUN., has to offer the following, at per 1000:—
ALDER, 1 to 1½ foot, 10*s.*; 1½ to 2 feet, 12*s.*; 2 to 3 feet, 20*s.*; 3 to 4 feet, 28*s.* ASH, Mountain, 1½ to 2 feet, 15*s.*; 2 to 3 feet, 20*s.*; 3 to 4 feet, 25*s.*; 6 to 8 feet, 75*s.*; 8 to 10 feet, 110*s.*; 10 to 12 feet, 140*s.* BEECH, 1 to 1½ foot, 15*s.*; 1½ to 2 feet, 18*s.* BIRCH, 1 to 1½ foot, 15*s.*; 1½ to 2 feet, 18*s.* ELM, 1½ to 2 feet, 12*s.*; 5 to 8 feet, 45*s.* SPRUCE, 1½ to 2½ feet, 25*s.*; 2½ to 4 feet, 35*s.*; Scotch, 3 to 4 feet, 30*s.*; 3½ to 4½ feet, 35*s.* LARCH, 1 to 1½ foot, 15*s.* LIMES, 2 to 2½ feet, 45*s.*; 2 to 3 feet, 55*s.*; 3 to 4 feet, 75*s.*; 4 to 5 feet, 95*s.* MAPLE, Norway, 4 to 5 feet, 40*s.*; 5 to 6 feet, 55*s.*; 6 to 8 feet, 75*s.* OAKS, 2 to 3½ feet, 28*s.*; 3½ to 5 feet, 40*s.*; 5 to 8 feet, 60*s.* PINUS AUSTRIACA, 1½ to 2 feet, 20*s.*; 2 to 2½ feet, 25*s.*; 2½ to 3½ feet, 30*s.*; 3 to 4 feet, 40*s.* POPLAR, Black Italian, 2 to 3 feet, 20*s.*; Ontario, 2 to 3 feet, 20*s.*; 3 to 4 feet, 35*s.*; 6 to 8 feet, 90*s.* PRIVET, Evergreen, 9 to 15 inches, 8*s.*; 1 to 1½ foot, 10*s.*; 1½ to 2 feet, 14*s.*; 2 to 2½ feet, 15*s.*; 2 to 3 feet, 17*s.* QUICK, 2-yr., transplanted, 8*s.*; 3-yr., 10*s.*; 4-yr., 12*s.* SYCAMORE, 4 to 6 feet, 30*s.*; 5 to 7 feet, 35*s.* WILLOWS, of sorts. LAUREL, Common, 9 to 12 inches, 25*s.*; 1 to 1½ foot, 35*s.* COTONEASTER MICROPHYLLA, 1 to 1½ foot, 70*s.*; 1½ to 2 feet, 90*s.*; do. SIMONDSII, 2 to 3 feet, 50*s.*; 3 to 4 feet, 80*s.* RHODODENDRONS, &c.
CATALOGUE of General Stock sent on application.
Moor Edge Nurseries, Tansley, near Matlock, Derbyshire.

SELECT GERANIUMS.
12 Choice GOLDEN TRICOLORS,
6 SILVER TRICOLORS.
The 18 varieties for 8*s.*
12 GOLD and BRONZE, good, 4*s.*
12 Good ZONALS (Pearson's).
6 Good ZONALS (Denny's).
The 18 varieties for 6*s.*
The above, strong plants, post-free.
WM. POTTEN, Camden Nursery, Sissinghurst, Staplehurst, Kent.

CERASUS LAURO-CERASUS CAMELLIÆFOLIA (the Camellia-leaved Laurel).—This extraordinary and elegant Laurel was raised by Mr. Wood, of Woodbridge, in Suffolk, on whose behalf we are now offering it for the first time to the public. The leaves are light green, like the common Laurel, but differ from it in shape in being elegantly curled, like a Camellia leaf, or more closely resembling in form the beautiful Croton volutum.
The effect of the plant, grown as a pyramid and well pruned, is peculiarly striking, and if planted close as an edging plant, and pinched well back, it produces a very neat and pleasing appearance.
We propose to distribute this well-known variety at the following low prices, being desirous of seeing it largely used, as it deserves to be, for the purposes above-mentioned:—Per plant, 5*s.*; per dozen, 42*s.* Special offer to the Trade.
J. AND C. LEE, Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

REDUCTION IN PRICES OF
YOUNG'S GOLDEN CHINESE JUNIPER
(JUNIPERUS CHINENSIS AUREA).
"The finest Golden Conifer of the day."

IT HAS BEEN EXHIBITED AT THE FOLLOWING SOCIETIES' SHOWS, WHEN THE HIGHEST HONOURS WERE AWARDED TO IT:—
Royal Horticultural, Aug. 2, 1871, First-class Certificate.
Crystal Palace, Aug. 5, 1871, First-class Certificate.
Manchester Horticultural, Sept. 10, 1872, First-class Certificate.
Glasgow and West of Scotland International Horticultural, Sept. 11, 1872, First-class Certificate.
Société Royale d'Agriculture et de Botanique de Gand, March 3, 1873, First-class Silver Medal.

On each occasion receiving the highest encomiums.

	£	s.	d.	
4 to 6 inches	5	0	0	per 100.
6 to 9 ,, ...	7	10	0	,,
9 to 12 ,, ...	10	0	0	,,
12 to 15 ,, ...	12	10	0	,,
15 to 18 ,, ...	42*s.* to 3	0	0	per doz.
SPECIMENS, 1½, 2, 2½, and 3 feet ...	10*s.* 6*d.*, 21*s.*, 31*s.* 6*d.*, 42*s.*, and 63*s.* each.			

NEW RHODODENDRONS.

BIANCHI,	LADY WINIFRED HERBERT,	SALVINI,
CAPTAIN WEBB,	MRS. GEO. BROWN,	WM. MILTON.

☞ The above Rhododendrons having been thoroughly tested for several seasons can be confidently recommended to purchasers as really distinct and hardy late-blooming varieties, combining all the qualities most desirable in this attractive class of plants. They are now offered in good plants:—
First Size, nice Plants, £2 12s. 6d. the set. Second Size, bushy, about 1½ foot, £3 15s. the set. Third Size, bushy, ½ to 2 feet, £5 5s. the set.

NEW AUCUBAS.
AUCUBA YOUNGII (Male and Female).

These are without doubt the finest varieties of Aucuba at present known. They are the result of crossing "A. ovata," the dwarf-growing species, with "A. viridis," the strong growing green one.
They are of very robust habit, yet compact in growth; the foliage is large, nearly round in shape, of great substance, and a rich deep shining green. The fruit on the female plant is very large, and of a deep blood-red. It received a First-class Certificate at the Royal Horticultural Society's Meeting, on March 19, 1873, and is described in the *Gardeners' Chronicle* as "a fine variety which has received a First-class Certificate for its dense habit, fine dark leaves of great substance, and large deep crimson fruit." They are valuable acquisitions to our hardy evergreens, and when known will demand a place in every collection, and will be universally planted in every garden and shrubbery where a really fine ornamental evergreen is a desideratum.
Strong Plants in pots, 5s. each; 42s. per dozen.

MAURICE YOUNG, MILFORD NURSERIES, near GODALMING.

To the Trade.

SEAKALE, strong, for forcing, 60s. per 1000; good for planting, 30s. per 1000, 4s. per 100. For cash only, with orders.
RICHARD LOCKE, Alexandra Nurseries, Redhill, Surrey.

CABBAGE PLANTS.—A first-rate lot of good strong plants for Sale Apply at Elms Farm, Barnes.

New and Genuine Seeds Only.

Now ready, gratis and post-free,
BRUNNING AND CO.'S New Illustrated and DESCRIPTIVE CATALOGUE of the above for the present season, containing a selection of the choicest novelties, together with the most approved older varieties, profusely Illustrated, and contains a splendid Coloured Plate representing a group of choice Hybrid Gladioli, for the growth of which their Nurseries are noted. Forwarded post-free to all applicants.
ISAAC BRUNNING AND CO., The Varmouth Seed Establishment, 1, Market Place, Great Yarmouth.

The Earliest and Best Round Pea is

SUTTON'S EMERALD GEM.
"Your 'Emerald Gem' is decidedly the earliest and best Pea I have grown yet, both in flavour and crop."—JOHN GIBBONS, *Gr. to the* Right Hon. B. Disraeli.
Per quart, 2s. 6d.
SUTTON AND SONS, The Queen's Seedsmen, Reading.

AVENUE TREES.

	Girth 4 ft. from ground.
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10 inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8 ,,
MAPLES, Norway, 12 to 16 feet high ..	5 to 8 ,,
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10 ,,
,, Scarlet, 10 to 14 feet high	8 to 10 ,,
,, Double, 10 to 14 feet high	8 to 10 ,,
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10 ,,
ELMS, 15 to 18 feet	7 to 9 ,,

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.
Knap Hill Nursery, Woking, Surrey.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of
WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

EWING AND CO.'S TRADE LIST, also TRADE and RETAIL LISTS of NEW ROSES for 1876, CLEMATIS, &c., are now ready. 10,000 GOOSEBERRIES, 6000 NUTS, strong, fine, and cheap; also ELMS, LIMES, CHESTNUTS, and other TREES for AVENUES, 9 to 20 feet, extra fine. LADY HENNIKER APPLE, 3s. 6d. and 7s. 6d. each. EWING'S MILDEW COMPOSITION, 1s. 6d. and 3s. per bottle.
Royal Norfolk Nurseries, EATON, near Norwich.

The New Japan Apple,

PYRUS MAULEI, is now distributing, at 21s., 15s., and 10s. 6d. each. It is as hardy as the common Apple, blossoms at the same time; the flowers are of a vivid orange-scarlet, fruit of a bright transparent lemon colour, very fragrant, about the size of the Golden Pippin Apple, which is produced in the greatest profusion.
The jam of this season has been tasted by some of the best judges and connoisseurs, and pronounced exquisite, and perhaps superior to any English or foreign fruit.
W. MAULE AND SONS, The Nurseries, Bristol.

Abies excelsa aurea (the Golden Spruce).

MESSRS. J. AND C. LEE beg to announce that they now intend to send out this magnificent tree. When planted in the full sunlight the whole tree is suffused with the richest gold. First-class Certificate from the Floral Committee of the Royal Horticultural Society. Well-established plants, 21s. each. A few of extra sizes, 31s. 6d. and 42s. each. The usual allowance to the Trade.
Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

Special Offer to the Trade for Cash.

JOSEPH GREEN, The Nurseries, Garforth, near Leeds, has to offer:—
10,000 GOOSEBERRIES, 60s. per 1000.
10,000 RASPBERRY CANES, 30s. per 1000.
5,000 CURRANTS, Red and White, 5s. per 100.
20,000 OAKS, English, 2 feet, strong, 20s. per 1000.
POTATOS, Myatt's Prolific, 20s. per 12 stones.
,, Haigh's Seedling, 20s. per 12 stones.
,, Red Imperial Ashtop, 20s. per 12 stones.
,, Belgian Kidneys, first-rate variety, 20s. per 12 stones.

Cabbage Plants Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000; and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.
Wonersh Nursery, Guildford, Surrey.

Cheap Gladioli from Paris Named and Seedlings.

LÉVÊQUE AND SON, NURSERYMEN, Ivry-sur-Seine, near Paris, have a large and splendid stock of good and strong flowering bulbs of GLADIOLI SEEDLINGS, equal in flower to the collection, at 8s. per 100, £3 per 1000, and £26 per 10,000—mixed, white, red, and pink; per colour, 10s. to 20s. per 100; yellow, 24s. per 100; per names (100), ten sorts, 8s. per 100; 25 sorts, 14s. per 100; in 50 or 100 sorts, the best, from £1 to £6, less or more, according to the novelty of the sorts. All good flowering bulbs. English cheque on London, or Post-office Order on Paris, accepted in payment.

B. S. WILLIAMS'

CHOICE

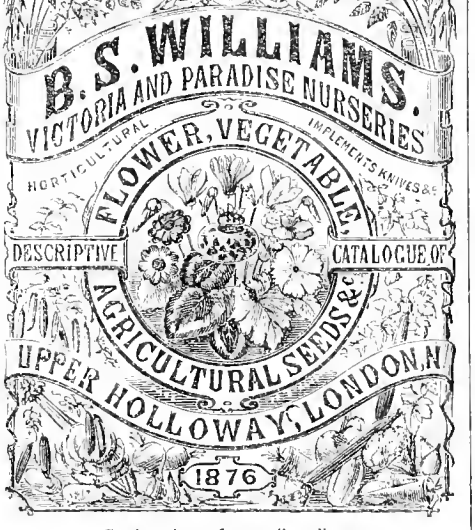
FLOWER AND VEGETABLE

Seeds for 1876.

	Per Packet.—s. d.
BEANS, Williams' Early Prolific Dwarf French, in sealed half-pints	1 6
BRUSSELS SPROUTS, Welch's Giant, one of the finest in cultivation	1 6
CUCUMBER, Tender and True	2 6
,, Osmaston Manor (new), one of the Finest Varieties, either for Summer or Winter use, 26 to 30 inches long, very prolific	2 6
MELON, Osmaston Manor Hybrid (new), a splendid Green-fleshed Variety, beautifully netted, globular in form, and of delicious flavour	2 6
ONION, Williams' Magnum Bonum, the heaviest cropping and longest keeping Onion in cultivation ..	1 6
PEA, Williams' Emperor of the Marrows .. per quart,	2 6

Illustrated Seed Catalogue for 1876

NOW READY.



Gratis and post-free to all applicants.

CHOICE FLOWER SEEDS.

	Per Packet.—s. d.
BALSAM, Williams' Superb Strain .. .. 2s. 6d. and	1 6
BEGONIA FROEBELII (new) This new and distinct species will prove one of the finest scarlet bedding plants in cultivation	2 6
CYCLAMEN PERSICUM GIGANTEUM.—This is a great improvement on the old type, having very broad, beautifully-mottled coriaceous leaves; the flowers are thrown well above the foliage, each flower measuring from 2 to 2½ inches in length; pure white, with a fine bold violet-purple eye ..	5 0
CYCLAMEN PERSICUM, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1 6
CELOSIA PYRAMIDALIS PLUMOSA	1 6
CALCEOLARIA, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1 6
CINERARIA, Weatherill's Extra Choice Strain, 5s., 3s. 6d., 2s. 6d., and	1 6
GLOXINIA, Finest Drooping Varieties	1 6
,, Finest Erect Varieties	1 6
PRIMULA, Williams' Superb Strain, Red, White, or Mixed .. .. .. 5s., 3s. 6d., 2s. 6d., and	1 6
PYRETHRUM GOLDEN GEM	1 0
SOLANUM, Williams' Improved Hybrids	1 6
STOCK, Williams' Improved Giant Scarlet Brompton ..	1 6
WALLFLOWER, Harbinger, Autumn and Winter flowering	1 0

Packets of Flower Seeds, excepting heavy kinds, Free by Post.

FREE DELIVERY.—All Orders for Seeds, amounting to £1 and upwards, will be delivered, Free of Carriage, to any Railway Station in ENGLAND, and all Orders of £2 or more in value, to any Railway Station in SCOTLAND or WALES, and any Steam Port in IRELAND.

VICTORIA AND PARADISE NURSERIES,
Upper Holloway, London, N.

Splendid New Pea for 1876.

DR. MACLEAN.
SUTTON & SONS have had repeated opportunities of observing this Pea during the last two seasons, and have the greatest confidence in recommending it to their numerous customers. Having received a large supply direct from Mr. Chas. Turner they are enabled to send it to their customers in the original sealed packet at the same price retail as charged by Mr. Turner. Per quart, 7s. 6d.; per pint, 4s.
SUTTON AND SONS, The Queen's Seedsmen, Reading.

Vines, Vines.

JAS. GARAWAY AND CO. offer the undermentioned VINES, Fruiting Canes, 48s. per dozen.

Chasselas Musqué	Muscat Hamburgh
Duchess of Buccleuch	Muscat Muscadine
Early Malmsey	Royal Ascot
Ferrone	Royal Vineyard
Grove End Sweetwater	

West's St. Peters.
JAS. GARAWAY AND CO., Durdham Down Nurseries, Clifton, Bristol.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving Size, Price, Popular and Botanical Names, Derivations, Description, Form, Colour, Foliage, Growth, Timber, Use in Arts, Native Country and Size there, Situation, Soil, and other information, with copious Index of their many Synonyms. Free by post for six stamps.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

To the Trade.

DWARF-TRAINED PEARS.—Five to Seven-branched Trees, extra fine, £5 per 100, the following varieties:—Beurré Clairgeau, Brown Beurré, Beurré d'Amanlis, Beurré Diel, Chaumontelle, Citron des Carmes, Fondante d'Automne, Glou Morceau, Jargonelle, Louise Bonne of Jersey, Marie Louise, Williams' Bon Chrétien, Winter Nelis.
JAS GARAWAY AND CO., Durdham Down Nurseries, Bristol.

Strong Ivies and Lobelia speciosa.

W. NORTH offers strong IVIES, from open ground, 4 to 5 to 6 feet, at 25s. per 100; 500 and upwards, at 20s. per 100. A sample dozen of the above sent for 4s.
Strong IVIES, in pots, from 50s. to 60s. per 100.
Variegated and Fancy Green IVIES, in twelve varieties, at 9s. per dozen.
LOBELIA SPECIOSA (true, in 60's), 3s. per dozen.
Terms cash. Post-office Orders payable at High Road, Lee.
Manor Lane Nursery, Lee, S.E.

E. G. HENDERSON AND SON'S NEW SEED CATALOGUE contains many Novelties. See List quoted in this Paper, February 12, p. 217.
LUCY GRIEVE PEAR, a delicious fruit; First-class Certificate. See description in this Catalogue.
VINES, splendid Canes, 3s. 6d. each. See the Catalogue.
The Wellington Nursery, St. John's Wood, London, N.W.

A. M. C. JONGKINDT CONINCK'S MAIDEN FRUIT TREES are extra strong, and all fit for Cordons. The greatest care has been taken to have the sorts true to name.
A great quantity of ROSES can be had very cheap.
WANTED, AZALEA PONTICA, fit for grafting this autumn. Send priced samples by post.
Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

ROBERT NEAL, JUN., and GEORGE NEAL, NURSERYMEN, Wandsworth Common, S.W., beg respectfully to call the attention of Gentlemen and Others who are planting this Spring to their large and varied stock of HARDY SHRUBS, FRUIT, FOREST, and ORNAMENTAL TREES, &c., which are now in fine condition for transplanting. An early inspection invited.
CATALOGUES may be had on application.

A BARGAIN is offered in a lot of very extra strong BLACK HAMBURGH VINES, which must, on account of alterations, be moved out of a border in which they were planted to be fruited this year. They have never borne a berry, and would ripen 20 lb. to 30 lb. of fruit well. Strong Canes, with splendid healthy roots, 10s. 6d. each.
L. WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

To the Trade.

POTATOS.—Paterson's Victoria, Queen, Early Vermont, Early Rose, Hundredfold Fluke, Paterson's Seedling Flukes, King of the Earlies, Snowflake, Red-skin Flour Balls, Robson's Challenge, Brownell's Beauty, Princess of Lorne, at very low prices, by the ton or cwt. Apply to
COCKS BROS., Monk's Hall, Gosberton, Spalding.

WM. PAUL AND SON
HAVE TO OFFER:—
SPECIMEN ROSES,
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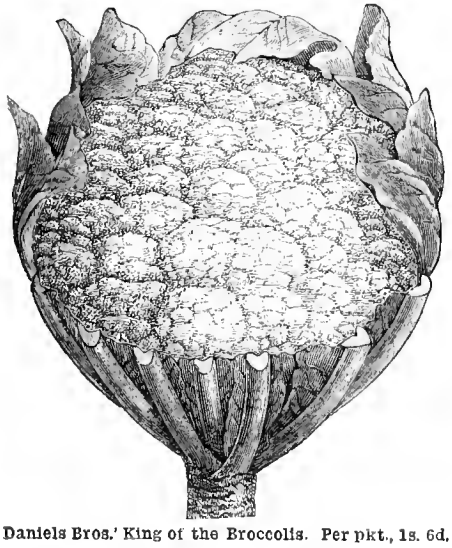

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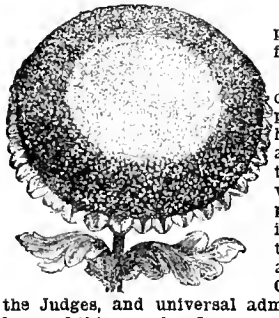

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SATURDAY, FEBRUARY 26, 1876.

COTTAGE GARDENING.

LAUDABLE efforts are being made at the present day in our cities and large towns to bring the humanising influences of gardening to bear upon the working classes, even though the scope for carrying it out is limited to the window sill, and such room as can be found for plants on the inside of the window. The individuals who strive to promote a taste for the pursuit, even in this most limited field, are deserving of success, and equally deserving of praise. For although those who are solely engrossed in money-making pursuits, and whose observation in that which concerns their poorer neighbours is usually of the most superficial character, may smile at the idea that the cultivation and association with plant life can have any influences for the better upon those engaged therewith, yet all who have had an opportunity of forming an opinion on the matter know that such is the case. The continued watchfulness necessary to success in cultivation, accompanied by the observation on the development of plant life inseparable from an acquaintance with it, in time produce even in the least cultivated mind reflections that cannot fail to favourably impress those who are brought under their influence. The human mind is so far from being vacuous, that if the individual has nothing in the shape of an innocent hobby wherewith to occupy spare time, the chances are that something objectionable will crop up and fill the void.

We are not, indeed, amongst those who believe that the trains of thought induced by the study of Nature's productions are the highest needed to occupy the mind of man, but we maintain that they exert a powerful influence for weal over all who come within their scope. If we take the lowest ground, and advocate these pursuits as a means for keeping those who give their minds to them, away from others of a vicious nature, still this is something considerable gained; consequently we wish all success to those who strive to promote town gardening even in its most humble shape.

There is, however, a more genial sphere for gardening operations than the courts and obscure streets of towns, that is anything but made as much of as it might be, or for the well being of the community collectively it should be. We allude to cottager's gardens and allotments. Much has been said and written on the subject, both as affecting the well-being of the individual, and also as to its wider influence upon the community at large. In many of the purely rural districts the feeling of the holders of the soil has been decidedly against allotments, and gardens of a size sufficient to be of much real use to those who possess them. This has generally arisen from a short-sighted idea that, if a man spent his evenings, after his daily employment was over, in cultivating his own garden he would be less able to do a fair day's work for the wages he received, ignoring the much more reasonable assumption that the fact of a man having a good garden from which he derives considerable pecuniary advantage, is a powerful incentive to his exerting himself to give satisfaction to his employer, so that he may retain employment in a place that gives him a chance of keeping his garden. But, fortunately, there is now no need for speculating on this subject. The influence that gardens and allotments have in adding to the comforts, and often assisting to pay the rents of the cottagers in places innumerable throughout the country, is conclusive, especially where the occupiers are encouraged to make the most of them. The most certain means of effecting this is evidently by the establishment of cottagers' shows. Although numbers of these exist at the present day, we feel certain that, if they were much more general, so as to extend to every country village, parish, and set of allotments, their effects would soon be apparent in both the quality and quantity of produce, as well as in the general management of the holdings. In these we have had ample opportunity of judging through actual experience in various parts of the country under widely different circumstances. Nothing that can be devised has such a tendency to excite the holders of these gardens to cultivate them in the most efficient manner, as the spirit of emulation brought out by these competitions. Of this those who reside in the country and take an interest in the labouring portion of the population so far as to provide gardens for them, may rest assured. We have seen many instances where allotments sufficiently large, of good ground, were offered at a nominal rent to those who would have them; but until competitive exhibitions for the holders were organised, the soil was never made to yield more than half that which it was subsequently found capable of doing.

We have in our mind's eye, at the present moment, a piece of ground some 10 acres in extent adjoining a village. It is divided into allotments an eighth of an acre each; the rent of these is some 7*s.* or 8*s.* per annum. They were for a number of years very indifferently cultivated, insufficiently cropped, foul, and weedy. A society was formed by a few individuals, giving small prizes for the most useful vegetables, and also several prizes a little more in amount for four or five of the best managed plots. The result of this has been that it would be difficult to find throughout the country a piece of ground of a like extent better managed, or yielding a greater quantity of good vegetables and hardy fruit. Some of the holders have sold the produce from the single plot they occupy for as much as £10 to £14 in a single year. This amount could not, of course, be realised in places where there was no market for the things grown, but it is sufficient to show what can be done when the work is carried out with a will. The men who can thus add much more to their earnings are not only better off, their families enjoying many comforts they would otherwise be deprived of, but are individually better in being thus able to occupy their evenings than in gossiping at the roadside, or spending their money in the ale-house. At one of the large collieries in the midland counties, where the manager takes very great interest in the men, one of the best organised horticultural societies of the kind exists, and the culinary vegetables and hardy fruit displayed at their annual exhibition would astonish any one who for the first time saw it.

There is one thing so essential to success in first establishing these competitions, that we think its notice might be of use to those who may contemplate setting anything of the kind on foot. In all cases, those who frame the rules should know sufficient of the subject to make the competition as equal as possible, otherwise some are deterred from entering the lists. So particular in this respect have the promoters of the society last alluded to been, that the schedule is framed so as to divide the exhibitors into groups, according to whatever difference there exists in the size of their gardens. The consideration of this and other matters, that at first might appear trivial and unimportant, has resulted in almost the whole of a very large number of occupiers of these gardens competing. The above are only two out of numbers of similar instances that have come under our personal

observation. Like results might be effected in places innumerable.

Those who are large employers of labour in the outskirts of towns and in country places do not always think of the amount of good they might effect by enabling those in their employ to possess a garden, and by encouraging them to carry out its cultivation so as to make the most of it. Horticultural exhibitions, wherein are displayed the productions of those who have made the pursuit their occupation, never fail to leave their mark. There is a much wider field for working, quite as important in the results that might be obtained and influenced to a greater extent, by the extension of cottagers' shows.

New Garden Plants.

GRIFFINIA ORNATA, *sp. n.**

This fine new winter-blooming stove bulb bears a *prima facie* general resemblance to Griffinia dryades, as figured in the *Botanical Magazine* (t. 5786), especially as regards its inflorescence, but the two plants differ very materially when a closer comparison is made. G. dryades has flattish broad ovate leaves, with the blade 18—20 nerved on each side the mid-rib, and the surface marked out into distinctly square-meshed, coarse, prominent reticulations (fig. 47, E), showing the course of the raised longitudinal and transverse veins. In G. ornata, on the other hand, the leaves are narrower and more oblong in outline, and so strongly recurved along the margin that a cross section would almost describe a semicircle, while the nerves are only about twelve on each side the mid-rib, with close-set parallel cross nerves, which are sunk in the substance of the leaves, and are scarcely visible on the surface as transverse striæ (fig. 47, D). The plane inner surface of the blunt-edged petiole of G. dryades, which extends through the blade of the leaf as a flat scarcely depressed mid-rib below, becoming prominent near the apex, is, moreover, quite different from the deeply channelled and winged petiole of G. ornata, in which species the channel of the petiole is continued as a depressed rib through the blade of the leaf, and the decurrent leaf margin is carried downwards as a narrower wing to the base of the petiole. The flowers, moreover, are paler, less expanded, and much more numerous.

From the older species of this interesting genus, G. ornata is utterly different. G. hyacinthina differs totally in the form and colour of its 9—10 sessile flowers. G. parviflora, which resembles it somewhat in the pale lilac hue of its flowers, differs in having the flowers two-thirds of an inch long, while in G. ornata they are at least 2½ inches. G. Blumenavia differs in having white flowers, and G. Liboniana in having spotted leaves.

The bulbs in this new acquisition are ovate, and from 3 to 4 inches in diameter, with a thick upright neck 2—4 inches long. The leaves are usually about six to eight in number, and form an arching tuft, spreading in all directions; they are elliptic-oblong, 6—10 inches in length, the edges and acute apex recurved, and the base tapered into a narrow wing which extends down the petiole; they are of a deep green colour, the costa very prominent and rounded beneath. The scape is 1—1½ foot high, many-flowered (about 18—24), the flowers pedicellate, on stalks nearly 2 inches long; spathe membranaceous, marcescent, with two broad opposite ovate-oblong valves as long as the pedicels, and a pair of intermediate lanceolate ones, a few small subulate bracts being also developed amongst the flower-stalks. The plants frequently develope two flower-scapes at one time. The flowers, which when in perfection stand horizontally, form a spreading head 8—9 inches broad; they are of a delicate purplish lilac, fading off to nearly white, and remaining for a considerable time in full beauty. The perianth is narrowly and obliquely funnel-shaped; the tube declined, very short; the limb six-parted, nearly equal, not divaricate, the lower segment nearly straight, the rest recurved towards the apex, 3 inches long, linear-lanceolate, about four lines wide, the three upper ones plane, the three lower wavy at the margin, the lowest shorter than the rest, all 2—3 nerved on each side the costa, which is prominent on the outer surface, producing a slightly keeled appearance. There are six stamens, five of which are declinate, and the dorsal one erect, appressed to the dorsal segment; the three sepaline stamens half an inch, the three petaline more than an inch shorter than the perianth; filaments filiform; anthers two-celled, linear-oblong, versatile. Ovary three-celled, with two erect obovate ovules in each cell; style about equalling the perianth; stigma simple.

Griffinia ornata was imported from the district of Rio de Janeiro in Brazil, during the past season, by Mr. Bull of Chelsea, with whom it has been flowering freely for the last six weeks or two months, and our drawing (fig. 48) was made from one of his specimens. Its very ornate flowers mark it out as a plant well adapted for the winter decoration of our stoves and conservatories. *T. Moore.*

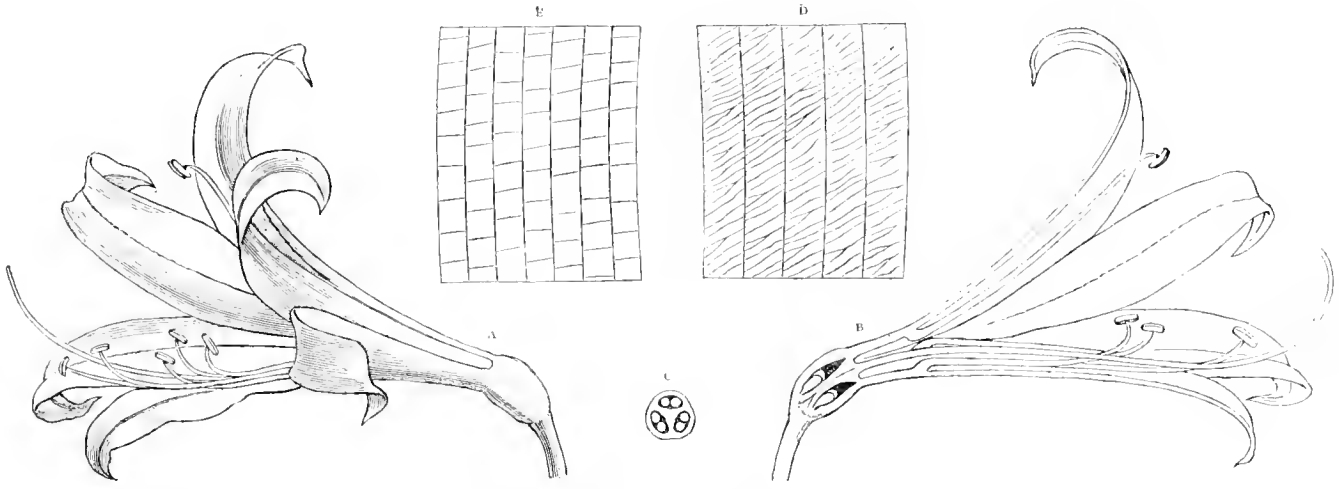

FIG. 47.—A, FLOWER OF GRIFFINIA ORNATA. B, SECTION OF FLOWER. C, SECTION OF OVARY. D, VENATION OF GRIFFINIA ORNATA. E, VENATION OF G. DRYADES.

HORTICULTURE IN PENNSYLVANIA.

THE Pennsylvania fruit growers held their annual Convention at Doylestown, Bucks County, on January 19 and 20. The President, Mr. Satterthwait, of Montgomery County, occupied the chair, and addressed the meeting upon topics of interest to the Society, as well as to fruit culturists generally. The display of Apples was very fair for the season, but the show of Pears was meagre. The report of the general fruit committee gave a concise account of the crops for the past season, from which we find that the supply of Apples was small and inferior, principally owing to the devastations of the Codlin moth. Indeed, from this and various other causes, many of the Apple growers were discouraged in their efforts to make this fruit remunerative. Pears, however, seemed to be increasing in favour, as the popular varieties were fewer in number, and more care had been bestowed upon them. In referring to the Plum, the weight of testimony was largely in favour of the Richland, a variety not best by any means, but of fair quality, a prolific bearer, and hardy; in fact, it was recommended as the best variety to grow in Pennsylvania. Although the great importance of the Grape crop was fully accorded, the report in this particular was too limited. The Concord was stated to be the most popular and profitable so far, although the Martha was hardy and productive; still the excessive sweetness of the latter appeared to be a fault in the judgment of many. The old Catawba and Isabella have been almost entirely discarded from our collections, their day for usefulness having passed.

In regard to small fruits, it seems that the Blackberry has not received so much attention as some others, owing in a great measure to the prevalence of the wild fruit in many sections. The Kittatinny, however, is deemed the best and most profitable, Wilson's Early being almost abandoned. The Herstine among Raspberries is at present the most popular kind, the President endorsing it very highly for near markets. Nothing as yet can be found among Strawberries to take the place of the sour Wilson's Albany, which continues to reign supreme. Currants and Gooseberries, to pay, must receive a mulching, and even with care in cultivation the past season's crop was small.

An essay by Mr. Josiah Hoopes, of West Chester, on "Our Yards, and How to Take Care of Them," drew forth several practical remarks from the members present. The idea of the author seemed to be that a more natural system should pervade the outside adornment of our homes; that green turf was one of the most beautiful accessories to the landscape art, and that no walks should mar its beauty save those that were absolutely necessary. Owners of small places were cautioned against planting too many large trees, and reminded that these should be frequently pruned and trained while young.

The subject of managing orchards was opened by an essay by Mr. John I. Carter, Superintendent of the State Experimental Farm. Thorough cultivation aided by a free application of fertilisers formed the basis of success. Mineral fertilisers appeared to be generally approved, although some members use animal manures. The essayist recommended as an excellent wash for trees a solution of muriate of soda, cow manure, sulphur, and copperas; and suggested for the eastern portion of the State the following varieties of fruits:—Apples—Maiden's Blush, Smokehouse, and Smith's Cider; Pears—Bartlett, Seckel, and Lawrence; Cherries—Governor Wood and Early Richmond. A fair synopsis of the views expressed shows that hoed crops were the best for the first six or eight years, especially Potatos;

* *Griffinia ornata*, Moore, n. sp.—Leaves elliptic-oblong, convex on the surface, somewhat decurrent at the base, with narrowly winged petioles; scape compressed, with an acute ridge on each side; umbel 20—24 flowered, the flowers long-stalked; perianth segments nearly equal linear-lanceolate apiculate, the lower one straightish, the rest recurved towards the apex; spathe marcescent, about equalling the pedicels.

300 lb. or 400 lb. of phosphate to the acre would be preferable ; exclude animals from the orchard, and allow it to come into grass at the expiration of the above term. Low training of fruit trees was specially recommended. So much contradictory evidence was given in relation to the proper time for pruning, that it appears any season of the year will answer, provided the large wounds are properly excluded from the air. Wounds heal more readily during growth in summer, although it appeared more practical to perform the operation during the season of rest in winter ; one member remarking that, if proper care was exercised in the earlier stages of the tree's life, very little pruning would be necessary in after years.

Mr. Thomas Meehan made some valuable remarks on the hybridisation of fruits, eulogistic of the system, for the improvement of quality, but not for numbers, as we had already too many in cultivation.

Mr. S. W. Noble, who has paid great attention to the Apple for many years, read an essay on the best varieties, as well as methods of cultivation. The main points to be observed in planting are to dig large holes, use good soil, fill the interstices among the roots with firm earth, mulch during the first summer, and bank up with soil the first winter. In the selection of varieties experience is the best guide. In Eastern Pennsylvania Smith's Cider is the Apple to be generally adopted, but Cornell's Fancy, Townsend, Princely, Maiden's Blush, Hays, Fallawater Jefferis, Hagloe, Benoni, and Krauser, are all to be recommended. Early Harvest, Primate, Knowles' Early, Early Strawberry, Smokehouse, and Red Astrachan, also had their advocates. Various recipes were given for the destruction of the bark-louse, one gentleman stating that he had been very successful with the following, placed in bags and hung upon the branches of the trees :—2 lb. of copperas, ¼ lb. of blue vitriol, ¼ lb. of saltpetre, 4 lb. of hard soap, and 4 lb. of common salt. As this mixture dissolved and spread over the bark it proved certain death to all insect life. Whale-oil soap, common soap, weak lye whitewash, and fish oil, had each been found efficacious by various members.

The Codlin moth, which has been termed "the worst enemy of the Apple," cannot be eradicated without constant watchfulness. The President remarked that the only plan to destroy it was to scrape off the bark from the bodies of the trees, pick up all fallen fruit and feed to the hogs, and place shingles under the trees as traps to catch the enemy. Fowls

Fig. 48.—GRIFFINIA ORNATA.

running in an orchard destroy large numbers of these insects; so valuable are they that a member had found his crop of fruit vastly improved since he had turned in his poultry.

The question of Pear culture engaging the attention of the Convention, some of the most practical orchardists gave as their experience that native varieties were the most to be relied on, as even the Bartlett was not entirely certain. Lawrence and Seckel were highly eulogised; Manning's Elizabeth was recommended by the President as the most profitable early variety; the Duchesse, as a dwarf, succeeded admirably in many places, and was very profitable as a market fruit, and yet in others it was valueless. Among Cherries Governor Wood held a high position in the estimation of many growers, although there were a few exceptions taken to the whole class of which it is a member. The Early Richmond appeared to have the most advocates. The English Morello was advocated highly by one member who had 900 trees in his orchard. They were very productive, and command double the price of the old Kentish or Pie Cherry. The Yellow Spanish was also recommended, notwithstanding it will rot in rainy seasons. The Black Tartarian is the great favourite in the celebrated Cherry district of York County.

The subject of Peach culture elicited nothing new in regard to the cause of yellows, the old stereotyped reasons being assigned for its presence and distribution. The impression appeared to prevail that Pennsylvanian orchardists should confine their attention to late varieties exclusively, as the earlier kinds have to compete with the crop from Southern markets, which are in market invariably in advance of the Northern fruits, one speaker stating that he would plant nothing earlier than the Oldmixon; after that Rareripe, Late Crawford, Smock, and Salway, where the latter succeeds. Where the Salway does succeed, it is one of the finest varieties, a member stating that he received last season 1 dollar per half peck, when other kinds would only command 25 cents per basket. The Susquehanna does finely in certain localities only. Reeve's Favourite is a better and surer variety. The Mountain Rose is supplanting Troth's Early.

During the discussion on Strawberries the Charles Downing was highly recommended by several gentlemen, and the Albany by others; the practice of autumn planting was discouraged, as it had done much to injure the popularity of this fruit. The President, who is one of the most extensive as well as successful cultivators in the State, said that he plants in rows 2½ feet apart, and works with a cultivator all the summer, allowing all the runners to take root; in the autumn he covers with long manure, and he is not afraid of using too much. Next season this straw is washed entirely clean, and serves to keep the berries out of the sand. Not an inch of ground is left without this covering. Evergreens, flowering shrubs, and Roses were discussed, with much instruction to those present. Resolutions of thanks to the local societies who had so kindly afforded accommodations for the present meeting were passed, the officers for last year were mostly re-elected, and the Society adjourned, to meet at Lancaster in January, 1877. *Condensed from the "New York Tribune."*

OPEN AIR VEGETATION.

By James McNab, Curator.

The weather at Edinburgh during the month of January was upon the whole pleasant, and no snow fell, although several severe snowstorms were experienced in various parts of England, and in many places in the north of Scotland. On twelve mornings only was the thermometer at or below the freezing point, indicating collectively 103°, the lowest being on the mornings of the 9th, 10th, 12th, 13th, 21st, and 22d, indicating respectively 17°, 18°, 25°, 25°, 21°, and 17°; while the highest morning temperatures were on the 5th, 6th, 20th, 24th, 27th, and 31st, indicating 41°, 40°, 40°, 41°, 42°, and 42°. During January, 1875, the thermometer was thirteen times at or below the freezing point, indicating collectively 87°. The following shows the amount of frost during the January months for the last thirteen years:—

1864	394	1871	1687
1865	104	1872	12
1866	49	1873	63
1867	210	1874	32
1868	75	1875	87
1869	57	1876	103
1870	70		

This season upon the whole is rather in advance of the average, particularly as regards herbaceous vegetation, and certain shrubby species. The following is the order those early spring plants selected twenty-six years ago for annually recording their time of flowering came into bloom—the same plant or plants growing in similar situations being always selected, so as better to compare with previous and future years:—

	1876.	1875.
Tussilago fragrans	Jan. 12	Jan. 18
Hepatica triloba	,, 12	,, 21
Corylus Avellana	,, 14	,, 15
Galanthus nivalis	,, 16	,, 18
Leucojum vernum	,, 18	,, 21
Crocus susianus	,, 20	,, 23
Rhododendron atrovirens	,, 25	Feb. 4
Eranthis hyemalis	,, 26	Jan. 30
Daphne Mezereum	,, 26	Feb. 4
Crocus vernus and vars.	,, 28	,, 10
Galanthus plicatus	,, 29	,, 3

On the rock garden thirty-five species and varieties were counted in flower on January 31, the most conspicuous being nine species of Helleborus, Hepaticas of various colours, Leucojum vernum, Crocus Imperati, Primula denticulata, Erica herbacea alba, Daphne Mezereum (pink and white), Cyclamen ibericum, and Eranthis hyemalis. Flowers are also to be seen on Sternbergia lutea, Veronica rupestris, and Lithospermum fruticosum. The comparatively mild weather, so far as past, has brought rapidly forward the leaf-buds of many shrubby plants, particularly Roses, scarlet flowering Currants, Cydonia japonica, Nuttallia cerasiformis (a Californian shrub), Lilacs, &c. Flowers are also to be seen on the Hazels, Alders, Rhododendron atrovirens, Jasminum nudiflorum, Garrya elliptica, and Cornus mascula, &c. The herbaceous plants which show the greatest amount of growth at the present time are the Elymus condensatus, or Californian Bunch-grass — the young shoots on January 31 averaged fully 8 inches in length; the growths on the Day Lily, Hemerocallis fulva, were 6 inches long at the same time. The buds of several trees are also observed to be swelling fast. The quantity of catkins and flowers being produced on the Birch and Elm gives the tops of such trees a very dark appearance.

At the present time all the plants of Thuja aurea and T. elegantissima have parted with the brown hue usually taken on by these shrubs during the month of September. They are now (Jan. 31) as green as they were before the brown tint commenced, and progressing towards their usual summer golden tint. These transitions are taking place earlier this spring than is usually discerned, probably owing to the brown colour not being so strong on them as sometimes happens during more severe winters. The Cryptomeria elegans is also parting with its beautiful reddish winter tinge, and is now about half green. The same observations also apply to many other Conifers, kinds which usually take on the brown hue during winter, but regain their usual bright green colours during summer. It would be curious to ascertain the cause of the periodical phases here described as taken on by the coniferous plants alluded to. The Golden Stone-crop (Sedum acre aureum) which takes on the golden tint during spring and summer, is still green, except a few pieces which hang down the sides of the rock-work stones, where they become fully exposed to the sun.

Snowdrops are now flowering freely on all the grass lawns having a southern aspect, while those on the north slopes will be about ten days later. The grass lawns are the only situations in the garden where their flowering can be annually depended on; when grown in borders the roots are either destroyed by mice, or dug over while preparing the ground for summer flowering plants.

* Read at the February meeting of the Botanical Society of Edinburgh.

THE FOXWHELP APPLE.

Our illustration (figs. 49 and 50, pp. 269, 273) of a group of famous old Foxwhelp Apple trees was sketched in October last at Credenhill Court, near Hereford, the residence of F. W. Herbert, Esq. Knight, in his *Pomona*, published nearly fifty years ago, speaks of the decline of this Apple, which is certainly a native of Herefordshire, and which at the present time is everywhere becoming gnarled and cankered. This splendid Apple is mentioned in the *Herefordshire Pomona* as a variety which "some commend." It was then new and unappreciated, and its young fruit, of large size, was credited with giving harsh and rough cider, though strong and well-flavoured. As the tree gets older the fruit usually gets smaller, and the value of the Foxwhelp Apple has now risen into the very first rank as a cider fruit. Fifty years ago many old trees were still hearty and vigorous; but even at that time grafts would not grow well, and "I venture to predict," says Knight "that the grafts will not be successful, for the grafts necessarily partake of a life nearly two centuries old, and not new life." The same author gives the specific gravity of the juice from 1076 to 1080 for small Apples. At the present time young trees grafted from the Foxwhelp only flourish for a very few years, and then begin to canker and die away at the ends of the branches. The trees are everywhere, for this reason, very much prized, but they do not bear now in any quantity above once in five or six years, when an exceptionally good season favours them.

Apple trees are always more or less irregular in growth, and the Foxwhelp tree (judging from the Credenhill Court specimens) are even more eccentric in habit than is usual with ordinary Apple trees. The shape of the fruit is somewhat peculiar (as shown in our illustration on p. 273), and the colour is red flaked all over with flecks of intense crimson, the flesh being rose-coloured within, and somewhat harsh to the taste. From the rarity of the tree and its fruit, Foxwhelp cider is now but seldom made for sale from Foxwhelp Apples alone, but, mixed with other fruit, that rich rough flavour is imparted for which it is so much prized. It drinks so pleasantly, that its great potency is concealed. It equals the strongest ale in strength, and it is sometimes a rural joke, if a stranger ridicules the strength of cider, to produce a bottle. Woe be to him if he takes unwittingly glass after glass. Foxwhelp cider is dark in colour, and if allowed to stand a few minutes in the glass it turns a dull deep brown. When the Woolhope Club visited Credenhill Camp last October, Mr. F. W. Herbert had this famous cider placed upon the table for the fungologists, and to Mr. Herbert and to Dr. Bull of Hereford we are indebted for this opportunity of illustrating and describing the famous cider fruit.

Foreign Correspondence.

BOTANICAL AND HORTICULTURAL NOTES FROM PORTUGAL.

(*Concluded from p. 238.*)

COIMBRA.

On my return journey to Lisbon I stopped a night at Coimbra, and had an opportunity of examining the Botanical Garden, which for picturesque aspect and architectural dignity is certainly unrivalled in Europe. It is ranged round the head of a valley, leading from the steep summit of the town down to the River Mondego, and laid out as a central plateau, surrounded on three sides by an ascending series of broad terraces facing the open valley, and backed up to the east and north by a picturesque arcaded acqueduct and the University buildings and Museum. The whole place wore a mellowed aspect of antiquity—the terraced walls, covered with creepers, tangled with the untrained growth of many years, and the terraces adorned with noble trees and shrubs dotted about in picturesque disarray. A group of Araucaria braziliensis near the entrance gates forms a striking feature, in addition to which there are fine speeimens of Araucaria excelsa and A. Bidwilli, also A. Cookii, and two or three other species. The climate seems too hot for Araucaria imbricata, which does not thrive here, nor did I see a single specimen in Portugal at all to be compared with those found in English gardens. Of New Holland plants there are many fine examples, including some rare species of Eucalyptus, which, though intrinsically monotonous and unpicturesque, form a pleasing contrast with the darker foliaged Coniferæ and the noble masses of Magnolia grandiflora. The garden as a botanical collection cannot be said to excel, and bears the aspect of intermittent neglect. The noble old trees testify of a directing hand which has passed away, and the gappy aspect of the bulbous and herbaceous collections indicates a want of present administrative force.

The garden is sufficiently supplied with a fair range of glasshouses, affording ample room for a good collection of stove plants, but the space is occupied with a monotonous repetition of the same species, and these might be better grown. At the time Dr. Goeze undertook the directorship many of these houses were occupied with culinary vegetables, and the entire collection of the garden numbered little over 500 species. During his administration the collection was largely augmented, and it is to be hoped that his successor will follow on in the same direction, and add to the

scientific repute of one of the most beautiful gardens in Europe.

Dr. Goeze is now transferred to Lisbon, and has under his care the formation of a botanical garden connected with the Polytechnic School. The site—a terraced plateau overlooking the lower part of the city—is good, but has been completely spoiled by the erection of an ugly observatory building in the middle of the best part of a fine terrace.

Lisbon Botanic Garden.

A fair commencement has been made in the formation of a collection of herbaceous plants, but Dr. Goeze labours under the disadvantage of the newness and rawness of the place, unhallowed by old trees, and wanting that subdued richness of antiquity which is the great charm of Coimbra. The big blocky barrack-like building gives the same painful impression—long naked corridors smelling of fresh paint and plaster, leading to huge box-like apartments with little or no furniture save a small rostrum for the Professor, faced by six huge high-backed chairs for the students, most of whom seem to be absent on a long vacation. The establishment is doubtless only in its infancy, but at present it does give the impression of inefficiency, and looks like an unsuccessful cross between a middle-class school and a second-rate university.

I was surprised to find how few Portuguese botanists are working at their indigenous flora, and excepting from Dr. Goeze, who gave me much valuable information, I could ascertain but little about the local plants; yet the neighbourhood of Lisbon, especially south of the Tagus, is exceptionally rich, and I made several excursions to this interesting district. You cross the Tagus in twelve minutes by a steam ferry to Cacelas, obtaining a most majestic panorama of Lisbon, and on landing can select one out of the numerous sandy lanes, passing through Olive gardens and hedged with Aloes, Opuntia, and Mesembryanthemums, to lead you to the wild ground so dear to the botanist. Almost the entire district south of the Tagus consists of forests of Stone Pine, full of open glades and underwood of Heaths, Cisti, Arbutus, and small evergreen Oaks, with a rich carpet of bulbous and herbaceous plants.

The more generally diffused special plants of a district first attract the botanist's eye, and perhaps the most striking species here is the white-berried Empetrum (Corema alba), like a coarse Heath in aspect, with a remarkably straight upright habit and vigorous shoots of from 1 to 3 feet in height, rising from massive woody root-stocks. Of Heaths, Erica mediterranea, E. arborea, E. australis, and E. ciliaris were most abundant, the last in flower, and formed with the Cisti and several species of small evergreen Oaks the mass of the thickets in the open parts of the forests. Cistaceæ are well represented, including Cistus albidus, monspeliensis, hirsutus, crispus, and ladaniferus, and several yellow-flowered species of shrubby Helianthemums, including halimifolium, rugosum, scabrosum, and microphyllum. The district south of the Tagus is rich in species of Thymus, of which I observed four or five, including creticus and cæspititius (Brotero), the latter remarkable for its low, spreading habit, rooting to the ground at every joint.

October is, I think, the best month in the year for bulb collecting, as, in addition to the autumnal flowering species above ground, many of the vernal species can be identified by the dead scapes and capsules, and the bulbs are in the best state for transplanting to flower in the ensuing season. The Pine forests afforded a number of interesting species, including Fritillaria lusitanica, the Portuguese representative of F. messanensis, with small, unfreckled flowers. This, I understand, is also found at Busaco further north.

Gladiolus serotinus (Welwitsch, M.S.), which Mr. Baker considers identical with illyricus, was most abundant. I first found it in flower at the end of May, 1871, and in October readily identified it by the dead flowering stems, from 9 to 15 inches in height; it is a beautiful miniature species, with bright rosy red flowers and small elongated bulbs. Leucojum autumnale, a lovely species, with fragile white flowers tinged with rose at the base of the perianth, was everywhere abundant, forming a conspicuous feature in the autumnal flora, and the forerunner of many winter flowering bulbs which burst up after the first rains following the resting time of summer drought. Leucojum trichophyllum, a rather larger species with pure white flowers, appears more sparingly later on, but this I was too early for. Scilla autumnalis was abundant everywhere, decorating the dry ground with its miniature bright amethyst flowers, produced before the foliage. Phalangium planifolium was another very common plant, and in the early spring the ground is adorned with Scilla pumila, intermixed with Anemone palmata, one of the very few yellow-flowering plants which varies with white flowers. The most attractive autumn-flowering bulb is Crocus Clusii, which I was fortunate in obtaining in several localities. I found it sparingly in Pine forests six miles south of the Tagus. Further south, nearer Setubal, it is said to be most abundant, varying occasionally with white flowers. There seems to be some confusion in the group comprising the three autumnal purple Crocuses of Western Europe and Northern Africa, to which Clusii belongs, including also Salz-

Fig. 49.—Old Foxwhelp Apple Trees in the Orchard at Credenhill Court.

manni (Gay), the tingitanus of Herbert (*Bot. Mag.*, t. 6000), and serotinus (Salisbury, *Bot. Mag.*, 1267). I think Mr. Baker has been misled in his description of serotinus by some specimens in the Kew Herbarium from a Continental garden labelled serotinus, which are certainly not the serotinus of Salisbury, the plant long cultivated under the name of serotinus and autumnalis.

Crocus Clusii is well described in Herbert's *Synopsis*, and figured in *Botanical Register*, xxxi., t. 37, fig. S, and is distinguished by its reticulated corm coats, finely divided stigma, with the outer segments of perianth irregularly and faintly veined from the base with darker lines, which do not extend much beyond the lower half of limb. I believe it is the only autumnal species of Portugal, the records of the occurrence of serotinus having occurred through a confusion of names. Specimens of undoubted Crocus Clusii from Monsanto, near Lisbon, in the Lisbon Herbarium, were labelled serotinus by Welwitsch, and the plant has also gone under the name of autumnalis, one of the synonyms of Salisbury's type serotinus.

Crocus serotinus (Salisb.) is a Spanish species, occurring in Pine forests, near Cadiz, and on the Sierra Nevada, and distinguished from Clusii by its larger corms with a fibro-membranaceous coat and larger flowers, with distinct dark bluish-lilac veins extending almost to the extremities of the perianth segments. This is a well-known plant, which has long been in cultivation under the names of serotinus and autumnalis.

Crocus tingitanus of Herbert or C. Salzmanni of Gay (well figured in the *Botanical Magazine*, plate 6000) is readily distinguishable from the other two species by its pale vinous lilac fleshy flowers with faint delicate veining, in the style of Colchicum autumnale. The corms are more elongated, with membranous coats. I cannot ascertain that its occurrence in Europe has ever been authenticated. It is said to grow near Tunis, and occurs abundantly on rough ground about 2 miles west of Tangiers. I also found it on mountains near Tetuan in 1869. The garden specimens in the Kew Herbarium labelled "serotinus" are, I believe, this plant, which is probably the only African species.

Crocus vernus was stated by Brotero to occur in the north of Portugal, and Dr. Goeze tells me of a light violet vernal species near Coimbra; but as C. vernus has not such a western range, Dean Herbert considered that Brotero's plant might probably prove to be Crocus carpetanus—the only vernal species occurring in Central Spain.

Amongst the other bulbous plants occurring in the South of Portugal may be enumerated the following:—Ornithogalum arabicum, O. nanum, Scilla cernua, S. hyacinthoides, S. Alvesiana, S. Bertolonii, S. serotina, Iris lusitanica, and I. Xiphium.

SETUBAL.

Setubal, on the south side of the south-Tagus promontory, is a capital centre for botanical exploration, and affords a great variety of ground. Sandy Pine forests with marshy spots surround the bay to the north and east, and to the south-east deep inlets from the sea intersect interminable ranges of sand-hills fringed with shrubby Salicornias, Chenopodiums, and other salt-loving plants. To the west, towards Cape Espechel, bare limestone downs afford a variety in the flora, and produce a great number of orchidaceous plants. Phlomis purpurea and a number of interesting labiate plants grow on the red ground at the coast immediately to the west of Setubal, and in mid-winter Ophioglossum lusitanicum is found in open turfy places in the neighbourhood. I was fortunate in finding the curious Drosopyllum lusitanicum in several localities in the Pine forests east of Setubal, occupying, unlike its ally, Drosera, dry heathy places, and it seems to be impatient of moisture. It appears to be generally distributed here and there through Portugal, and has been found at Coimbra, Mafra, and Oporto, extending also southwards into Andalusia, Algeria and Morocco. During Dr. Hooker's excursion to Barbary we found it in several localities in full flower in April. It is a most singular plant, more shrubby than herbaceous, rising from a straight woody root without fibres, and bearing linear glandulose leaves disposed in loose rosettes, from which the flowering shoots rise to a height of a foot or more, bearing six or seven bright sulphur-coloured flowers as large as a shilling. The foliage all dies in the late autumn, when the entire plant has the aspect of being completely dry and dead. If cultivators would bear this period of rest in mind, I have no doubt that better success would attain the culture of the plant than hitherto.

Altogether, Portugal is a most inviting field for botanical exploration. Since the time of Brotero it has, perhaps, been less worked than any other European country. Indeed, excepting the late Dr. Welwitsch, it seems to have been almost wholly neglected of late years both by Portuguese and foreign botanists. *George Maw, F.L.S., Benthall Hall, Broseley, Jan.* 29, 1876.

Notices of Books.

THE second number of the *Indian Forester* is now before us, and is an improvement on its predecessor. It opens with a very interesting paper on the forests of Darjeeling and Sikkim. There, we are told, is to be found every possible kind of forest tree, from the dense-growing straight-stemmed Sal of the plains (Shorea) to the massive trunks of the Chestnut and Oak in the temperate regions, the Rhododendron, Birch, Alder, and Whitebeam of the cold climates, and the Pine forest of the almost perpetual snow. The average annual rainfall at Darjeeling is said to be 125 inches, the main fall being in June, July, August, and September; comparatively little in other months. The mean temperature is 55°; monthly average—highest, 64°; lowest, 41°. The most interesting portions of this report for our readers will probably be those relating to the temperate forests at a height of 6000—8000 feet. Mr. Gamble's remarks on these forests are worth citing in full :—

"They consist principally of Oaks, Quercus lamellosa, annulata, and sp.; Chestnuts, Castanopis rufescens; Magnolia Campbellii; Michelia excelsa, lanuginosa, and Cathcartii (the latter two often extending right down to 5000 feet); Laurels, Maples, and other trees.

"Of these by far the commonest is the 'Booke,' Quercus lamellosa, a huge spreading tree with large leaves, and ringed acorn [cups] measuring often 2 inches diameter. The wood is like that of English Oak, but has the medullary rays exceedingly developed. It is very pretty when well worked and polished, but is rather liable to warp, consequently it is chiefly used for big beams for the construction of houses and bridges; it is very greatly in demand in Darjeeling. The most magnificent, and probably the most useful trees are the 'Champ' or Magnolias. The M. Campbellii is a fine tree, found only between 7000 and 8000 feet, and especially on the summit of Senchal. In April, when leafless, but covered with its brilliant pink flowers, 8 or 9 inches in diameter, it is a sight alone worth a visit to Darjeeling to see, and as at that season also the white Magnolia, Michelia excelsa, also leafless, puts out its masses of snow-white fragrant flowers, these two flowering trees, contrasting with the delicate light green of the young leaves of the Maple, and the sombre foliage of the evergreen Laurels, make up a forest scene of wonderful beauty. Indeed, at all times these Oak forests have an unceasing charm, whether we see them in the spring, with the sunlight piercing through the leaves to light up the different colours of the foliage, or in the rainy season, when in the forest paths we pass one by one, the giant trunks clothed with masses of brilliant hanging moss, and lowering through the dripping misty atmosphere. But perhaps it is in October and November that the forests have their finest appearance, when the leaves turn to shades of every conceivable hue of yellow and red, and the foliage of the trees is dotted with the scarlet seeds of the Magnolia, or the bright brown prickly fruits of the hill Chestnuts.

"In that season, too, the ground vegetation is at its loveliest. Brilliant-flowered Balsams and painted-leaved Begonias peep from every mossy cranny of the dripping rocks; above, masses of Strobilanthes spread a blue and purple hue over the scene; Ferns of every form and species, and delicate Selaginellas cover every bank; while above, the branches are festooned with gorgeously flowered climbers, Thunbergia, Craufurdia, or Dicentra.

The following passage, relating to the Rhododendrons, so many of which were first introduced to our notice by Dr. Hooker, is also worthy of extract :—

"The Rhododendron forests, in which the trees are gregarious, are only found on the high points above 8000 feet, although two tree species, the R. arboreum and R. argenteum, as well as the beautiful epiphytic R. arboreum and R. Edgeworthii, and the small shrubby pink-flowered R. vaccinioides, are found as low as 7000 feet, and occasionally even lower. The chief species are R. Campbellæ, the commonest in the summit of Tongloo, with twisted pink-barked stems and crimson flowers; R. Falconeri, also common on Tongloo, and easily recognised by its large leaves, covered beneath with a dense rusty tomentum, and its cream-coloured flowers; and R. barbatum, a smaller kind, with bright crimson petals. The flowering season is the end of March and April, and at that time the colour of the forest around Tongloo is most magnificent. The wood of the Rhododendrons is pinkish and close-grained, but is not in general use. It is very good as firewood. Associated with the Rhododendrons we often find the Andromeda ovalifolia, the red-flowered Buddleia Colvilli, and Hydrangea altissima, but the commonest trees are the Birch, Maple, and Whitebeam, and the Yew is occasionally found of immense size, and growing much straighter and taller than it usually does in Europe. Of two trees measured by the writer one had 20 feet girth, but was broken at the top; the other, 16 feet, with a straight cylindrical stem of 30 feet high.

"The Fir forests have as yet scarcely been examined; the principal species is the Silver Fir, Abies Webbiana and with it is often found a Juniper, Juniperus recurva, and the Abies dumosa."

The other articles in this number include one on "Grazing," a subject of the very greatest interest to foresters; notes on a tour in British Burmah, by Mr. M. H. Ferrars; a report on the Caoutchouc plantations in Assam, by Gustav Mann; reports on arboriculture in its relation to climate, in which, however, there is little that is absolutely new; and a translation of M. Planchon's paper on the Eucalyptus globulus. Besides these there are a number of short miscellaneous articles and inquiries, which justify our expectations of a successful career for this journal.

—— A triple part of the *Flore des Serres*, concluding the twenty-first volume, has lately been issued. The coloured plates include figures of the following plants:—Æsculus rubicunda, Artocarpus Cannoni, Azalea Diamant, a white flowered variety with the upper petals blotched with carmine, as though it were the result of a cross with a Rhododendron. It is hardy and the foliage sub-evergreen. Bertolonia Mirandæi, a hybrid plant with dark green leaves spotted on the upper surface with small pink spots and of a rich claret colour beneath. Bolbophyllum Dayanum, a curious and pretty Orchid, which, as M. Van Houtte well says, should not be ostracised. Bryonopsis laciniosa erythrocarpa is an annual Cucurbit, the chief interest attaching to which consists in its beautiful berries, of the size of small Cherries and of a deep red colour streaked irregularly with white. The plant is probably too tender for outdoor culture unless under exceptional circumstance. The double variety of Cerasus Caproniana is a double flowering Cherry with flowers of peach-blossom colour, hence we need say no more in its recommendation. Chlorophytum elatum is noteworty for its linear-lance-shaped leaves banded with white. It is a very attractive plant of its class. Cytisus Laburnum var. aureus is a variety in which the leaves emulate the golden-yellow of the blossoms. Godwinia gigas is sufficiently well known to our readers to render further notice unnecessary. Heliamphora nutans is a Pitcher-plant long ago described by Mr. Bentham, but we believe not yet introduced into gardens. The increased interest taken now-a-days in this class of plants leads one to believe that the present plant—a native of British Guiana—will not long be an absentee from our stoves. While Sarracenias have a large plate-like stigma which is very characteristic, the present plant has only a minute stigma. The plate representing a plot of Lilium Brownii in bloom will justly excite the admiration of Lily growers. Linaria tristis is an old-fashioned plant, too handsome to merit so sad a designation. Masdevallia Harryana needs no commendation to Orchid lovers. Lilium Parkmanni is the fine Lily lately figured in our columns. M. Van Houtte has unfortunately not noticed the correction in the name. We originally wrote by mistake L. Packmanni, but the true spelling is Parkmanni. The coloured plate of the Traveller's Tree of Madagascar is adapted from the view of the plant in its native locality that we gave in a former issue. Renanthera Lowi, or, as it is sometimes called, Vanda Lowi, a grand Bornean Orchid with racemes of thirty to forty flowers, of which it is here noted that the two uppermost flowers, or those nearest the stem, are much less conspicuously spotted than the others, which bear crimson blotches on a yellow ground. The plate of Richardia albo-maculata represents a fine group of a plant closely allied to the Trumpet Lily, but with leaves spotted with white. Tea Rose Amazon is a yellow-flowered variety, characterised by the Editor as one of the best. Rubus spectabilis is figured for the sake of its fruits—of two shades of colour, in one variety yellow, in another red. The plant is altogether a favourite as a hardy shrub, which blossoms very early, but it has one disadvantage—that of creeping underground and throwing up suckers where they are not wanted. Tulipa Greigi, a grand scarlet Tulip, with a black spot bordered with yellow at the base of each petal. The leaves are streaked irregularly with purplish brown spots. The plates are of the usual high quality, and the letterpress varied.

Garden Operations.

PLANT HOUSES.

PLANT STOVE.—The remaining portion of the plants in this department should now have their annual shift. The majority of the occupants of the stove, from their naturally rapid growth, exhaust the soil much more completely in the course of a season than is the case with the slower-growing greenhouse plants; they are also much less liable to receive injury from a considerable portion of the worn-out soil being removed, yet it should by no means follow that an indiscriminate practice of shaking-out ought to be followed. It is all very well to do this, as also to reduce a portion of the roots, in the case of such deciduous subjects as have already attained a size such as to make it inconvenient to give them larger pots, but when this operation is performed it should always be done before the cut-in plants have made too much growth, or the result will be that many of the young shoots will stop altogether, of course retarding the season's growth for some weeks, to the consequent later production of flowers. With evergreen stove plants the treatment should be different, for, although with these it is desirable to remove as much of the old soil as can be got away without too much interference with the roots, yet this should be done principally by working it out with the fingers from the upper portion of the ball not generally so much occupied by the roots; it should also be done before too much growth is made with young or intermediate sized plants that are to be moved into larger pots: there is little necessity for the removal of any soil, except such as is loose near the top of the ball. In all cases use enough sand to keep the whole in a condition that will admit of the large quantity of water needed through the summer passing freely away.

Ferns.—These should now be at once attended to, especially where there is a considerable quantity grown, for if potting be delayed until the young fronds have started into growth the more or less inevitable disturbance of the roots will have the effect of causing the young growth to become crippled. The constant use of the syringe (necessary through the growing season with most Ferns) tends to prevent the increase of some species of insects, such as thrips and aphides; but where the collection is extensive it is difficult to keep clear of brown-scale. Before the plants commence growth the whole should receive a thorough cleansing, especially Tree Ferns. They should first be gone over carefully with a brush, to remove all all that are under the oldest, more bardened scales, as these are more difficult to destroy by washing with insecticide. After they have been brushed off the plants should be laid on their sides, and thoroughly washed with either Fowler's Insecticide or Abyssinian Mixture. They will bear either of these at a strength of 6 ounces to the gallon if it is applied before any young growth is made, at which strength it will leave very few of the insects alive that are in the younger stage, and consequently easier to kill. If the washing is well done, so as to reach every part affected, it will be found to save very much labour through the season afterwards.

It is a mistake to give Ferns so much pot-room as they often receive, as vigorous, healthy growth can be produced by regular applications of manure-water during the growing season. This stimulant was some years ago, and by many at the present time, considered fatal or injurious, yet such is by no means the case, as there are no plants grown that seem more to like it if not given too strong. In limiting the size of pots for Ferns exception must be made of such as have creeping rhizomes, like the Gleichenias. If these have not enough room for their creeping shoots to lay hold of the soil they project over the sides of the pots, and get injured, which seriously affects the growth of the plants. In all cases drain well, and use plenty of crocks, charcoal, or coal cinders amongst the peat in which they are potted. *T. Baines.*

ORCHIDS.—The night temperatures of the different sections of the Orchid-houses must now by gradual steps be advanced so that the morning's readings will indicate as follows—East India-house, 65°; Dendrobium-house, 63°; Cattleya-house, 58° to 60°; Odontoglossum-house, 50° to 53°. This will necessitate a corresponding rise in the daytime, so that by fire-heat each house will have gone up 5° or 8°; should the day be bright and sunny, let the houses by the aid of sun-heat run up 5° more. With the increased rise of temperature a greater amount of atmospheric moisture must be given, and inasmuch as a number of plants are just commencing to grow, more particularly among the subjects in the East India and Dendrobium houses, it will be necessary to watch the first signs of growth, and give all the assistance that is possible. During the blooming period, which with many of these latter follows the resting season, the amount of water required at the roots is not so great as when the plant is in full vigour of growth; but the one follows the other so rapidly and surely that from the time the first symptoms of returning life and animation are apparent all through the growing season it will be necessary to water at first somewhat sparingly, but afterwards with a very liberal hand. The shading of the houses must now be got ready, and where it was taken off each autumn it must be fixed on the top ridge, so that it may be run down for an hour or two during the hottest part of the day. It is by far the better plan to have the blinds made so that they can be run on rollers; then being let down for a short time and drawn up when the heat of the sun is declining, the light which is so essential is available, and materially assists in the development of all that goes to make up a strong and vigorous plant. At present not much shading will be needed, but still, when so many of the subjects have been potted and top-dressed, the strong sun-light and heat from 11 till 2 P.M. causes too great a tax upon the energies of the plants, and as a natural result a great number of such things as Vandas, Aerides, &c., lose a number of their lower leaves, to the disfigurement of the plants for the season, as well as considerably lessening their money value. By running the blinds down for an hour or two the temperature of the houses is kept much more regular and humid, which is far better than, with the sun shining strongly (which runs the houses up quickly), to give a quantity of air, which in a short time dries up every particle of moisture. In the East India-house the beautiful Dendrochilum glumaceum will now be in flower: this is one of those that commence to grow in early winter, and now that it is blooming, and also growing and rooting freely, it must have a good share of water. Vanda suavis, tricolor, giganteum, cœrulescens, Aerides virens, Saccolabium curvifolium, retusum, guttatum, &c., will all be showing flower. See that no water is resting in the axils of the leaves, and if any plants should be tied so that the matting will be over where the spikes are likely to appear, let it be cut and give the spikes free course. Anguloa Clowesii, Ruckerii, &c., will now be starting into growth, and with the young breaks the flower-buds will shortly appear. These succeed best in the early part of the season in the Cattleya-house, the flowers expand better and hang a little drier than in the Odontoglossum-house—the blooms are less liable to become spotted. Odontoglossum citrosmum will also be breaking, and since the round and plump bulbs lie so close to the soil it is often the case that the spikes are damaged or lost through the close contact with the moss, which holds the moisture. Press the soil away from the breaks, and let light and air get freely to them. *W. Swan, Fallowfield.*

FRUIT HOUSES.

CHERRIES AND PLUMS.—At this period the chief requirements will comprise attention to ventilation, watering, and syringing: as the former operation is very important, prompt attention should be given to its regulation. If temperate weather prevails constantly keep a chink of air on at the top of the houses, or allow a current of it to pass through so long as the internal condition of the house does not subside lower than 50°. Whenever this degree cannot be maintained reduce the quantity of air, or close the house altogether, according to circumstances. Whenever requisite still continue 45° artificially as a mean during daylight, and from 35° to 40° at night. As a precautionary measure against the attacks of the green or black fly, we at about this period, before the blossoms of the trees are fully expanded, apply with the syringe, at a temperature of 50°, a wash of quassia-water. Directions concerning its strength, &c., are recorded in the Calendar for Peaches and Nectarines for January 22 of the current year. As growth in the trees advances more frequent attention in the way of watering will be necessary, especially in the case of trees in pots. No stimulants need be applied in the shape of manurial agents until after the fruit is set and advancing in growth, and then it should be given regularly, only in a mild form. If there are any bees in the locality, and the weather is not unfavourable for their migrations, they will speedily find out Cherry trees when they are in blossom. Should these little busy workers appear plentifully there will be no need to fertilise the flowers by hand. In the absence of dull and humid weather, continue to syringe the trees slightly once every day whilst they are in flower. *G. T. Miles, Wycombe Abbey.*

STRAWBERRIES IN POTS.—Early crops of these will now be fast approaching maturity; to whatever degree growth may have been accelerated in these since the time of setting, when colouring commences it should be abated, and a drier and a more temperate state of air maintained about the plants, if flavour is to be imparted to the fruit. As soon as successional plants, which are placed in structures where a high and moist temperature is necessary, as in the case where Pine or Cucumber houses come into bloom, they should be removed to Peach or Fig houses or vineries, where the night temperature is kept at about 55°. Continue to introduce successions as the previous ones advance, and keep them free from the greenfly by means of fumigation. The general stock, which are in pots outside, will need supervision occasionally, in order to see that the drainage has not been impaired through the action of worms or otherwise; any defect in this way can readily be detected during rainy weather. *G. T. Miles.*

MELONS.—One of the most important items in the successful growth of good fruit is a sharp steady heat of 85° to 90° at the roots with a range of from 70° as the minimum to 90° as the maximum air temperature—conditions which can hardly be maintained by fermenting materials alone; but where this system of obtaining heat can be supplemented by hot-water pipes, the production of early Melons worth eating is by no means difficult. Where the growth of early Melons is attempted without the aid of fire-heat, too much attention cannot be paid to the quality and preparation of the materials used for making the bed. Good stable dung, from which all the droppings have not been taken to the Mushroom-house, should be well fermented, turned, and sweetened, when Oak leaves, collected and housed in a dry state in equal parts, may be added. Cast up into a heap, protect from heavy rain, turn once, and the material will be fit for placing in the pit. When the heat has declined to 90° the soil-strong loam may be placed on the bed, to get warmed through before it is rammed firm for the reception of the plants. Let the plants be strong and well broken before they are turned out, as nothing is gained by putting out weakly ones. Give a little back air night and day until all danger of rank steam has passed away, and shade lightly from bright sunshine until the roots have taken to the new soil, when this may be discontinued, as the Melon, with plenty of heat, air, and water, cannot have too much sunshine. Make sowings for succession, and prepare materials for making up beds in the frame ground. *W. Coleman, Eastnor.*

ORCHARD HOUSES.—In heated houses the early-forced trees of Apricots, Peaches, and Nectarines will now have their fruit set, and a gradual thinning of some of the young shoots where too thickly placed will have to be commenced. The thinning of the young fruit set, however, must not be proceeded with till they get some size, so as to leave the most promising for a crop, and those which are best placed on the branches. I have not the same faith as some gardeners have in the efficacy of sulphur when spread on the flues or hot-water pipes to keep the red-spider in check, but trust more for this to vigorous and constant syringing the trees. In unheated orchard-houses all the air possible may still be given, so that the trees may be kept as backward as the season will allow. It is possible that all the trees in pots before they begin to swell their flower-buds or shoots will only want watering once a week, for it is better to keep them rather dry to prolong the retarding process, but it will be as well to look over them, and see to their state, for some may want water oftener than this. Sometimes the trees get infested with aphis in the autumn after the fruit has been gathered, and although none may be seen after the growth commences in the spring following, it will be as well to fumigate them now with tobacco smoke. This will keep the pest from appearing when the trees are in flower, and likewise keep the young shoots free from them until the fruit is set. *William Tillery.*

HARDY FRUIT GARDEN.

The many and variable changes in the season which we are now experiencing will doubtless have retarded many of the operations recommended in previous Calendars, and one of the first things to be pushed forward and brought to a conclusion is that of planting fruit trees of all sorts. Early planting in autumn is undoubtedly the best in every way, but where alterations are in progress or new plans in the course of formation it is often requisite to plant as late as possible. As a general rule we may plant without taking much extra care until the end of February, or in such seasons as the present until the end of the first week in March, after which time atmospherical influences are not to be trusted, being generally of such a parching and arid nature that a great amount of extra care is requisite.

In favourable weather pruning and nailing must be followed up in every department. Apricots are now beginning to show the bloom, which will soon be expanded sufficiently to require protection. One of the best materials for the purpose is woollen net, which admits plenty of light and air, whilst affording ample protection for 8° or 10° below freezing point. On very fine days it is desirable to turn back the protecting material, so as to give free access to the bees for impregnating purposes. If the pruning of outdoor Vines is not completed it should be finished off at once, and previous to nailing in let the stems be well dressed with the composition before recommended, adding, as in the case of Peaches, a rather larger proportion of sulphur to the composition. *John Cox, Redleaf.*

HORTICULTURAL EXHIBITIONS, 1876.

MARCH.

1.—Royal Horticultural Society, South Kensington, Meeting of Fruit, Floral, and Scientific Committees.
14.—Manchester Botanical and Horticultural Society. Floral Meeting at the Town Hall.
15.—Horticultural Society of Liverpool. Exhibition of Hyacinths and Spring Flowers.
15.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees. Spring Show.
15.—Royal Agricultural and Horticultural Society of Jersey. Extra Spring Show.
15 and 16.—Leeds Horticultural Society. Spring Show.
22 and 23.—Bristol, West of England, and South Wales Chrysanthemum Society. Spring Show.
29.—Royal Botanic Society, Regent's Park. Spring Show.
29.—Glasgow and West of Scotland Horticultural Society. Spring Show.

APRIL.

5.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
5.—Royal Caledonian Horticultural Society. Spring Show.
12 and 13.—Royal Aquarium and Summer and Winter Garden. Flower Show.
19.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.

THE

Gardeners' Chronicle.

SATURDAY, FEBRUARY 26, 1876.

APPOINTMENTS FOR THE ENSUING WEEK

MONDAY,	Feb. 28	Sale of Herbaceous Plants, Lilies, &c., at Stevens' Rooms. Clearance Sale at the Bell Lane Nursery, Hendon, by Protheroe & Morris.
TUESDAY,	Feb. 29	City Auction Rooms: Sale of Roses, Camellias, &c., at 12.30 P.M., by Protheroe & Morris. Royal Horticultural Society: Meeting of Fruit, Floral, and Scientific Committees.
WEDNESDAY,	Mar. 1	Sale of Camellias, Azaleas, Roses, Bulbs, &c., at Stevens' Rooms. Sale at Hendon continued.
THURSDAY,	March 2	Sale of Orchids, at Stevens' Rooms.
SATURDAY,	March 4	Sale of Hardy Ornamental Trees and Shrubs, Roses, Bulbs, &c., at Stevens' Rooms.

THE appearance of the PHYLLOXERA in the vineries AT GUNNERSBURY is a matter of such serious import that, with a view to induce watchfulness, we are induced to call attention to the fact. The main circumstances are alluded to in our report of the Scientific Committee of the Royal Horticultural Society in our last issue; but we may here add that the Vines in question carried a good crop, and made good wood last season, having been planted four or five years, and having done well during all that time. Nothing, therefore, was suspected till the borders were disturbed, and fresh soil added, prior to commencing forcing. A peculiar appearance of the roots was then observed. By-and-bye it was noticed that the canes did not break so freely as they should do—the roots were again examined, and all doubts as to the presence of the Phylloxera set at rest. The peculiar swellings on the roots are not so abundant as usual, and although the rind of the root is in places utterly decayed, yet it is only here and there that the Phylloxera is seen, and then only in the deep cracks and beneath the surface of the rind, hence some of the specimens first examined were pronounced free from the pest.

At the present time the Vines are all very late in breaking (a circumstance which, we hear, is not infrequent this season in places where no Phylloxera is known to exist), and those that have done so have produced weak spindly shoots, flimsy leaves, and small flower bunches, quite at variance with the healthy look of the canes themselves.

It becomes a question, what is best to be done in such a case. Our own feeling is that, in spite of the success which followed Mr. DUNN'S immersion plan, in spite of the numerous alleged cures, it will, for most gardeners troubled with the pest, be found most satisfactory, all things considered, to uproot and burn the Vines, turn out all the soil, thoroughly cleanse and repaint the vineries, and not stock them again for a year or two. Where circumstances are such that the gardener or his employer can afford to make experiments at the risk of loss, well and good—it is most desirable they should do so. We are speaking of the average Grape grower, whose zeal for knowledge and desire to benefit his fellow creatures are, necessarily or otherwise, less than his demand for Grapes.

Inspection of the Vines at Gunnersbury, however, suggests two things—not very practical, we fear, but yet worth consideration. Already the canes are beginning to protrude air-roots. If, therefore, some plan could be devised for inducing the formation of new and healthy roots in fresh untainted soil, and for the gradual removal of the dead roots and infected soil, it is possible that the Vines might be saved; but from a practical point of view we doubt whether the game would be worth the candle. Again, as the Vines are doing their best to fight against adversity by making what growth they can, might they not be aided by a layer of dung laid over the inside borders, so as to feed the leaves by the vapour of ammonia? But whether any remedy be practicable or not, we shall have gained our point if we put Vine growers on their guard against the extension of the plague. At the present time the insects are dormant, but they will shortly resume their activity. The presence also of the controlling mite is some satisfaction, but not much.

THE Adjourned Annual Meeting of the ROYAL HORTICULTURAL SOCIETY, held on Thursday, terminated in a manner very different from that which has been customary of late. In fact, it was quite delightful to see how harmonious were the proceedings. The only fear we have is, that it may be too good to last. Speaker after speaker spoke of the benefits of unanimity and co-operation in such a manner as forcibly to remind us of the "happy family." The immediate cause of this charmingly amiable state of things was the promulgation and adoption of certain new rules and privileges. It will be remembered that, with a view to prevent the unrestricted use of tickets, some regulations were issued, which gave great offence to the local Fellows, and a committee was ultimately appointed to confer with the Council on the matter. The result is the amended scheme printed in another column.

So far as horticulture is concerned, we have nothing to say as to this new proposal. Save as a possible means of raising the income, it has no interest for the horticultural Fellows in general, except in one particular, viz., "that non-transferable tickets at 10*s.* 6*d.* per annum, admitting to all shows, scientific meetings, and lectures of the Society, but not to promenades, nor on reserved occasions, and to the Chiswick Gardens on week days, will be issued to *bonâ fide* gardeners recommended by two Fellows." It remains to be seen how many will avail themselves of this privilege. The whole business of the meeting turned on questions of finance and of funds—funds, be it observed, to be spent, when obtained, in great proportion on that terrible incubus, the garden at South Kensington. All sorts of deplorable catastrophes were to happen if the Society were broken up into its constituent elements, or the Charter forfeited. For our own parts we do not see that there is any absolutely insuperable difficulty in the way of severing the connection between the two classes of Fellows, whose interests are so antagonistic; and nothing that was said on Thursday has shaken our conviction that this would be the best policy to pursue.

It is possible that there is some scheme pigeon-holed in the offices of Her Majesty's Commissioners, whereby Royal favour and patronage may be again induced to beam on the Society. The earnestness of some of the speakers representing that interest give rise to a suspicion of that kind. We need hardly say, if the Society is to be a fashionable Society, and to keep up South Kensington Gardens, this is a most important point. But, on the other hand, we cannot but reiterate our opinion that one main cause of the calamities which have well nigh annihilated the Society, has been the fact that, in its attempt to conciliate the fashionable Fellows, horticulture pure and simple—the object for which the Society was founded, the object for which it is still supposed to exist—has been proportionately starved and neglected. We impute no blame to any one, or to any Council, for this; it is, however, this circumstance that makes us entertain very grave doubts whether, even if the Council are able to raise their annual income in the course of three years to £10,000, horticulture will be any the better.

Meantime, the meeting was assured that Mr. FREAKE was really prepared to carry out his intention of granting, on the security of Her Majesty's Commissioners, a loan sufficient to pay the present liabilities of the Society, provided the meeting were harmonious. The meeting, like good little boys, were harmonious; and so, doubtless, Mr. FREAKE will be as good as his word; and so once again, and for a little time, the old coat is provided with a patch. A patched coat is better than none, but what horticulturists should strive for is an entirely new one.

—— THE following is the amended summary of the privileges of Fellows of the ROYAL HORTICULTURAL SOCIETY for the year 1876. The admission fee is two guineas:—

A. *Two-Guinea Fellowship.*—Each Two-Guinea Fellow is entitled to one non-transferable ticket, giving admission to its owner on all occasions; with liberty to introduce personally two friends, except to *fêtes, conversazioni*, and flower shows, and on reserved occasions.*

B. *Four-Guinea Fellowship.*—Each Four-Guinea Fellow is entitled to two transferable tickets, admitting the owner on all occasions; with liberty to introduce personally four friends, except to *fêtes, conversazioni*, and flower shows, and on reserved occasions.

C. *Six-Guinea Family Ticket.*—Two-Guinea and Four-Guinea Fellows, by raising their subscriptions to six guineas, will be entitled to receive, in addition to the privileges of Four-Guinea Fellows, one extra transferable ticket, giving admission to the bearer on all occasions; and, except to *fêtes, conversazioni*, flower shows, and reserved occasions, to the whole of the owner's family resident in his house, including necessary attendants, not exceeding two. On promenade days nurses will not be admitted, and children under twelve years of age must be accompanied by their parents or grown-up member of the family.

D. *Twenty-Guinea Life Fellows* to have the same privileges as Two-Guinea Fellows, and Forty-Guinea Life Fellows to have the same privileges as Four-Guinea Fellows.

E. *Twenty-Guinea Life Fellows*, by paying two guineas annually, may obtain the privileges of Four-Guinea Fellows.

F. The privileges of holders of ten-guinea tickets remain unaltered.

G. To all classes of Fellows the following privileges:—1. To purchase for members of his or her own household, at the price of £1 1*s.* each, non-transferable tickets, which entitle the nominee to all the privileges of personal admission that Fellows themselves possess, except that of admission on specially reserved occasions.* 2. To purchase, for £1 1*s.* each, books containing twenty-one orders of admission to the promenades (for admission to which no money shall be taken at the gates). 3. To purchase, for £1 1*s.* each, books containing forty-two orders of admission on all days, except shows, *fêtes, conversazioni*, promenades, and specially reserved occasions.* 4. To admit, by personal introduction, friends to the gardens at South Kensington on Sundays. 5. To admit friends daily (Sundays excepted) by written order to the gardens at Chiswick. 6. To purchase, previous to the day of each show, tickets at reduced prices. 7. To obtain, upon application, such seeds, plants, and cuttings, as the Society may have in sufficient numbers to meet the Fellows' applications. 8. To purchase the flowers, fruit, &c., grown at Chiswick, which may not be required by the Council for scientific purposes. 9. To receive, on application in writing, a copy of the publications of the Society. 10. To vote at all meetings of the Society. 11. To give notice in writing of being relieved from the yearly payments while resident abroad. 12. To free admission to the reading-room and Lindley Library.

* The Council reserve power, on four occasions annually, to have receptions, at which none but Fellows and bearers of their transferable tickets shall have a right to be present, without special invitation.

Non-transferable tickets, at 10*s*. 6*d*. per annum, admitting to all shows, scientific meetings, and lectures of the Society (but not to promenades nor on reserved occasions), and to the Chiswick Gardens on week days, will be issued to *bonâ fide* gardeners recommended by two Fellows.

All former Fellows of the Society who have withdrawn therefrom, and who shall have paid all subscriptions due from them to it, will not be required to pay a fresh entrance fee if they shall be re-elected in the year 1876.

—— Any of our readers who may happen last year to have dried some specimens of the COMMON BRACKEN (Pteris aquilina), and who could, therefore, furnish Mr. W. T. THISELTON DYER, Royal Gardens, Kew, with some of its spores, would give an assistance for which Mr. DYER would be much indebted. For his purpose it is an object to save the time which must elapse before fresh spores are again procurable.

—— Mr. ROBERT ADAMSON has resigned his position as gardener to Sir COUTTS LINDSAY, at Balcarres, Fifeshire, and is succeeded by Mr. TAIT, who for the last four years has been foreman in the flower garden there. Mr. ADAMSON has been in the profession forty-nine years, and thirty-three of these he has spent at Balcarres, with great credit to himself. A notice of the gardens at Balcarres will be found at p. 295 of our volume for 1873.

—— We have received from Mr. CARL H. HARTMANN, Botanical Collector, Range Nursery, Toowoomba, Queensland, a photograph of a gigantic ROCK LILY (Doryanthes), discovered by him in the mountains near Stanthorpe. Mr. HARTMANN writes respecting it:—"The photograph was taken after I had carried the spike for three days on horseback. The flower-stalk was 11 feet high, and had ninety-one laterals on each, of which there were from eight to eleven deep scarlet blossoms—over 900 perfect flowers in all. The plant has a most majestic appearance, and a larger spike, which I could not carry, had 4 feet of its stalk all flowers."

—— A correspondent of *Notes and Queries* describes a very LARGE BOUGH OF MISTLETO that was brought last December from the "wild woods of Broceliande," in Bretagne, and which, when gathered, measured 10 feet in circumference. It is said to have arrived in this country with little or no injury, and to have found a resting-place for the Christmas season in the hall of the Rev. THOMAS WILTSHIRE, at Granville Park, Lewisham. As suggested in the communication referred to, this branch was no doubt the largest one ever imported to this country. The same correspondent refers to an abundant growth of Mistleto on Hawthorn and other trees in Grimsthorpe Park, Lincolnshire; so abundant, indeed, was the production that just before Christmas people came from long distances in search of it, so that additional watchers had to be employed to protect the property.

—— We learn that Mr. HARRIS, gardener to Captain ASHBY, is leaving that gentleman's service at Naseby Wooleys, Rugby. Mr. HARRIS is known to be a good practical gardener, and will no doubt soon be in harness again.

—— The ASTER has become such a leading flower at exhibitions as to warrant attention being called to the necessary steps for having flowers for the earlier shows. The three leading types grown for exhibition purposes are the Quilled, Truffaut's Pæony or incurved type, and the Victoria, perhaps the most showy and massive of all the Asters; and seed of these should be sown at once in boxes in a gentle heat, and the plants grown on by pricking them out singly in other boxes, so as to be quite strong to plant in the

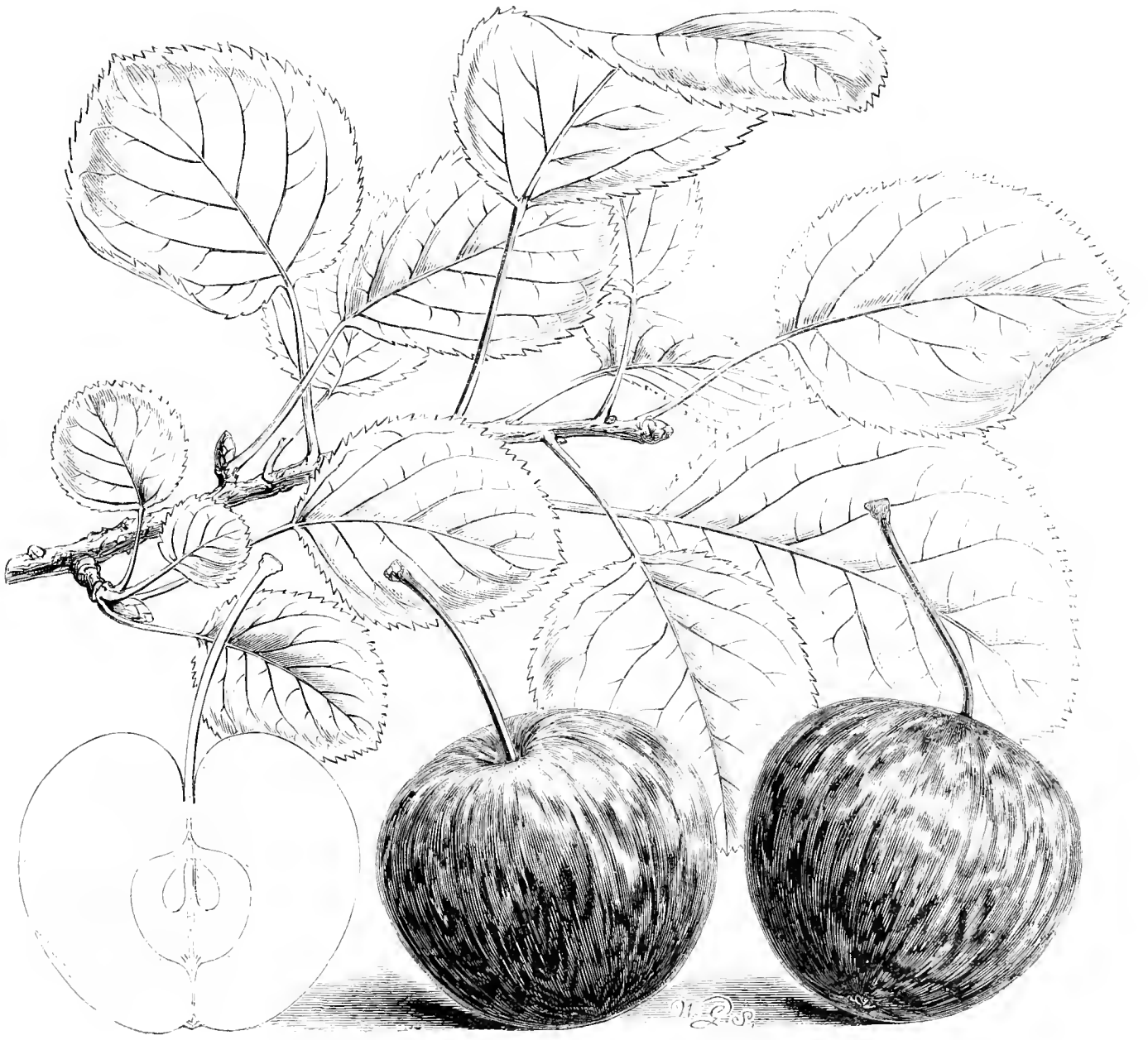

FIG. 50.—THE OLD FOXWHELP APPLE.

open early in May. There is nothing like a well-manured Vine border on a south aspect for Asters; and they should be planted out in lines 18 inches apart, and mulched with manure during times of drought. The centre or leading flower should be pinched out, and three or four of the strongest side-shoots left to produce exhibition blooms. As the buds begin to expand, occasional waterings with liquid manure will be found of great advantage, as it gives an added lustre to the colours, as well as increases the size of the flowers.

—— The schedule of prizes of the Grand International Exhibition to be held in Dundee in September next contains a class (among others of a specially interesting character) that is well worthy the attention of schedule compilers. It is for a WINDOW GARDEN, within a radius of one mile of the Town House of Dundee. The window garden required is to be a box of plants grown on the outside sill of a window for at least two months previous to the show, and as it is provided that the boxes entered for competition are to be examined by a deputation of two gentlemen to be appointed by the committee, it may be inferred that it is not necessary to bring them to the place of exhibition. It is to be hoped this is the case, as a box, highly praiseworthy when in position, might be materially depreciated by bringing it some distance. This is a *bonâ fide* attempt at the encouragement of town gardening, and we can only hope the result will be so far satisfactory as to lead to a large number of prizes being offered another year.

—— PRIMULA DENTICULATA deserves honourable mention as a plant for cultivating in pots to flower under glass at this season of the year. A strong plant lifted from the open ground at the end of August last and potted into a 32-pot has thrown up no less than ten flower-stems, a few of them of great strength, and the plant is now quite a pleasant floral bush, and most effective decorative object. It is one of the earliest to bloom of several charming early-flowering hardy Primulas. It was kept out-of-doors till frost appeared imminent, when it was placed under glass in a cool house, where it commenced to make a rapid growth a month or six weeks ago, and soon threw up its flower-stems. Stout crowns should be used for flowering in pots, and the plants should be potted sufficiently early in the previous summer to admit of their becoming well-established in the pots by mid-winter.

—— We learn from the *Flora* that the whole of the BOTANICAL COLLECTIONS OF THE LATE DR. HOHENACKER are in the hands of K. KECK, Aistershaim, Upper Austria, who offers them for sale at very moderate prices.

—— The following gentlemen have been elected OFFICERS OF THE CENTRAL HORTICULTURAL SOCIETY OF FRANCE for the year 1876:—President, the Duke Decazes; First Vice-President, M. Hardy, Jun.; Vice-Presidents, Messrs. Joly, Teston, Baron d'Avène, and Dr. Baillon; Secretaries, Messrs. Lavallée, Verlot, Leclair, Dumont, Delamarre, and Duvivier; Treasurer, M. Moras; Assistant-Treasurer, M. Lecocq-Dumesnil; Librarian and Assistant, Dr. Pigeaux and M. Wauthier. The administrative Council is composed of Messrs. Margottin, Truffaut, Dupuy-Jamain, Borel, Thibaut, Brun (Dr.), Houllet, Rivière (Eug.), Malet, Pochet-Deroche, and Doctor Dureau.

—— A recent number of the *Hamburger Gartenzeitung* contains, among other things, an article on PACKING PLANTS FOR CARRIAGE, from which it would appear that careful and skilful packing is performed only by a few of the leading nurserymen in Germany. The writer complains that almost every owner of a garden, and a great many private gardeners, are anxious to trade; and as the latter have nothing to pay for space and convenience for propagating, they raise plants in large numbers, and advertise them at prices lower than nurserymen, who are at great expense, can possibly sell them. But as every one would prefer cheap plants to dear ones this should result in the public advantage. The contrary is the case, however, for, as a rule, the packing is so badly done that one receives a medley of broken pots, moss, mould, &c., amongst which fragments of the plants ordered may sometimes be found. Thus in the end the purchaser is a loser instead of a gainer by these cheap plants. This the writer follows up with some practical instructions on packing. As a rule, such work is admirably done in this country, not only in nurseries but in most large private gardens; but we also have a similar class of offenders.

—— M. ALPH. LAVALLÉE stated recently at a meeting of the Botanical Society of France that the common Water-cress (Nasturtium officinale) and Elodea canadensis (the American water-weed) do not grow in the same places; and that if the Water-cress be introduced into a brook where the Elodea is growing the latter is speedily ousted. This, if true, is good news for those whose ditches are filled with the American water-weed.

—— The daily papers report the death of one of the most eminent of European botanists, ADOLPHE BRONGNIART. He was, we find, born in Paris in 1801, and is best known perhaps by his numerous publications on fossil plants. His first publication on this subject is dated as early as 1822. Six years later appeared his *Prodromus of Fossil Plants*, and in 1849 his *Tableau des Genres des Végétaux Fossiles*. In the interval he published numerous detached memoirs on the same subject, so that he had gained for himself the most prominent position in this department of botany. M. BRONGNIART was also the author of numerous carefully elaborated monographs of living plants, which betokened a keen critical faculty; and in 1843, having to rearrange the Jardin des Plantes at Paris, he published his *Enumération des Genres des Plantes Cultivées au Muséum*, in which he modified the arrangements of his distinguished predecessors, the DE JUSSIEUS, and especially by the abandonment of the apetalous group, and the allocation of its members elsewhere effected a great improvement. This was the result of his perception of the significance and value of morphological characters, which was further shown by his classing the epigynous and the perigynous plants under the same general heading. BRONGNIART was one of the first also, if not the first, to recognise the pollen-tube and its special significance in the fertilisation of plants. We shall await with great interest the remarks on his career as a botanist, which the Fellows of the Institute are pretty sure to make public.

—— A singular ceremony, says the *London and Provincial Illustrated News*, took place at St. Denis last week, called the COURONNEMENT DES ROSIÈRS. A practice—since developed into a custom—was instituted some years ago by a philanthropic mayor to give to a few poor girls of the quarter a *trousseau* and wedding dowry. Each year were chosen from a list of candidates the two or three amongst them who appeared the most deserving. In 1872 seven were the happy recipients of this bounty; for the war and Commune having prevented the carrying out of this laudable custom in the years 1870-71 there was a stock of *vertus* of whom to dispose. This year the two chosen were Mdlles. LOUISE JARRY and EUGÉNIE ANDRÉ, aged respectively eighteen and twenty-three years. A procession, as usual, was formed at the St. Denis Hospital, proceeding thence, with a band of music at the head, to the Mairie, the two girls being escorted by the Sous-Préfet and the Mayor himself in the capacity of godfathers. Arrived at the Mairie the civil marriage was gone through, the younger girl wedding a basket maker, and the elder a house painter. After the ceremony the procession left the residence of the Mayor for the church, where a grand mass was held in celebration of the event. Each of the brides received £36 as a dowry, together with an exceedingly tasteful as well as useful wedding *trousseau*. Wearing crowns of Roses, the young wives looked neatly pretty, whilst their happy, grateful looks gladdened the hearts of all present, and made many wish that the *Couronnement des Rosièrs* was more widely extended.

—— One of the best articles in the *Villa Gardener* for the present month is that on the culture of Plums in pots for villa gardens and other situations where standards or wall trees cannot conveniently be grown. Mr. INGRAM advocates Mr. NIVEN'S plan of growing Asparagus, which consists in throwing up a ridge or series of ridges of soil duly enriched, and on a base of 3 feet, rising to a height of 18 inches to 2 feet. The roots are placed on or astride of the ridge, and covered over, the plants being placed 15 inches apart. To force the Asparagus, fermenting materials are shaken between the ridges, which are covered with wooden shutters during the influence of the lining of hot litter. There is no doubt this plan has many practical advantages. The number is a valuable sixpenny-worth.

—— The February number of the *Florist and Pomologist* opens with a coloured plate representing two new varieties of Pinks — one, Boiard, a finely-shaped flower of good substance and with the petals symmetrically arranged, each with an even lacing; the other, Dr. Masters, is very distinct, with heavily-laced flowers, and fine broad smooth-egded petals. A second plate is devoted to Pitmaston Duchess Pear (see *Gardeners' Chronicle* for 1864, p. 1108, with figure). The tree is of vigorous habit and very prolific, the fruit being in use throughout October; the flavour is excellent, the form symmetrical and handsome. Among the articles is one on ×Zinnia Darwinii, described as a seedling cross between Zinnia Haageana and the double Z. elegans. The race so produced is remarked for its large, firm, compact flower-heads with recurved florets. Adverting to Black Currants, Mr. M. SAUL advocates the claims of Lee's Prolific. Mr. DODWELL gives a list of the best Carnations and Picotees. Numerous other articles, which we have no space to enumerate, constitute this capital number of a favourite periodical.

—— The plants represented in the February number of the *Botanical Magazine* are Crocus Weldeni, tab. 6211, a white-flowered form, with a purplish hue on the backs of the petals. It is probably a variety of C. biflorus, and is a native of Dalmatia. Stapelia olivacea, tab. 6212, has already been described and figured by Mr. BROWN in our columns. Cypella peruviana, tab. 6213, is a handsome yellow-flowered Irid, whose perianth segments are spotted at the base with reddish brown. It is supposed to be a native of the Bolivian Andes, and was introduced to British gardens by Messrs. VEITCH. Pescatoria Dayana var. rhodacra, tab. 6214, was originally described in our columns, 1874, ii., 226. The spelling usually adopted—Pescatorea—is corrected, and Pescatoria substituted. Viburnum dilatatum, tab. 6215, is a very handsome hardy shrub, introduced from Japan by Messrs. VEITCH. The leaves are variable in shape, generally more or less ovate-acuminate, densely toothed, and the numerous white flowers are borne in dense cymose panicles. Senecio (§Kleinia) chordifolia, t. 6216, is a very extraordinary plant, fit to charm the connoisseur, but not likely to be a popular plant. It forms an erect shrub, of small stature, with long (7—10 inches) cylindrical pointed leaves, and yellow flower-heads borne on long stalks. It is a native of South Africa, whence it was introduced by Mr. COOPER.

—— The ROYAL AGRICULTURAL AND HORTICULTURAL SOCIETY OF JERSEY has issued a schedule of prizes to be awarded at an extra spring show to be held on March 15; a spring show on May 10; a show of Roses, flowers, fruits, and vegetables on June 14; an autumn show of the two latter products on October 13 and 14, and at a Chrysanthemum show on November 8.

—— The second part of the fifth volume of Professor PARLATORE'S elaborate *Flora Italiana* has recently been published. It comprises a full description, with synonyms of the Italian species of Rutaceæ, Terebinthaceæ, Sapindaceæ, Rhamnaceæ, Coriarieæ, Guttiferæ, Hypericaceæ, Cistineæ. The diagnoses are in Latin, the descriptions in Italian. The synonyms and bibliographical references are unusually full.

—— IDESIA POLYCARPA fruited abundantly in several parts of France last season, as we learn from the *Revue Horticole*. When this tree was first introduced it was stated that it bore an edible fruit, but it has now been proved that its clusters of deep brown berries, although very ornamental, are of a bitter disagreeable taste, and cannot compete with the most inferior of our cultivated fruits. Nevertheless, this may prove a valuable ornamental shrub or tree for the milder parts of the United Kingdom; but it should be borne in mind that it is dioecious.

Home Correspondence.

Plant Names: How to Pronounce Them.—I note the remarks of your correspondents "W. P." (p. 179) and "Ebor" (p. 212). I had not forgotten to mention how the correct pronunciation of names is to be decided; there was no need for me to mention it. Obviously it is to be decided in the same way that correct spelling is decided at a spelling bee—so far, that is, as pronunciation can be communicated through the medium of the eye; namely, by reference to some great and recognised dictionary. In England, for pronunciation, we have Loudon's *Encyclopædia of Plants*, published in 1829, a supplement following in 1840, and a second supplement in 1855. This massive and manifold book—contained, I should suppose, in all good reference libraries—has 3337 generic names, and describes considerably over 21,000 species of flowering plants and Cryptogamia. Every name, both generic and specific, is accentuated, and though, possibly enough, there may be typographical mistakes, after making allowance for these it may be depended upon implicitly. I think it will be found that the typographical errors are all or mostly corrected in the general index to the whole work. Individual botanists, erudite scholars, may, perhaps, find an accent here and there which they would dispute; just as at a spelling bee there are differences of opinion, even among the best informed, in regard to the orthography of certain exceptional words of doubtful etymology, upon which nobody can pretend to insist. But over 999 out of every 1000 accentuations in Loudon all scholars and authors are willingly agreed upon—those, I mean, who abide by the system of pronunciation observed in England at the present day. Foreigners would probably object to a good many; with that we have nothing to do, in the absence of an absolute, immaculate, and unimpeachable standard of right and wrong, such as we can never hope to possess. For all the everyday or really useful purposes that a pronouncing bee would care to promote, we may reasonably be content with Loudon, and be glad of it. I thought that every one who took the slightest interest in botanical nomenclature and pronunciation would be perfectly well aware of the existence of Loudon's *Encyclopædia*, or I should have mentioned it in my little article. That article, in some of its utterances, as all would see, was half playful. It was half playfully that I suggested the pronouncing bee, never supposing that any one would seriously set one on foot, though if anybody would take the trouble there can be no doubt that it would render good service. I proposed it, not for the learned but for the sake of the scores of people who do not know how to pronounce ordinary and accustomed names; those, for example, who say Podoph'yllum and Tragop'ogon. Just as the spelling bee, in the eyes of all sensible and practical people, is not got up to decide on the orthography of

> "Spermagoraiolekitholakapotides,
> Words that should only be said upon holidays
> When we have nothing else to do."

—but to show young men and young ladies the importance, if they would pass for "educated," of correctly spelling Fuchsia, aeronaut, acquiescence, and the rest of the common words in which so many at the bees fail miserably, so the pronouncing bee would address itself to Epacris, Polypogon and the like. It may be quite true, as "Ebor" says, that the pronunciation of certain Greek words is not to be got by consulting a lexicon. Will "Ebor" have the kindness to indicate half-a-dozen botanical names of Greek origin, such as are likely to be heard or wanted, say no oftener than once a year, which a good Greek lexicon would fail to tell the pronunciation of? A statement of this nature needs proof and illustration. Meanwhile, granting all that "Ebor" may claim as to lexicon inability, would the want to which he alludes be an excuse for neglecting the light that we have? Should a pronouncing bee ever be got up, it will be time enough to complain of the want of a key to perfect knowledge, when Loudon's 3337 generic names have all been mastered. Many additional generic names have been published since the issue of this great catalogue, as every one acquainted with the progress of plant-knowledge is well aware; there are also many more specific names, in the *Prodromus*, &c., and perhaps these may be what "Ebor," having consulted Loudon in vain, is referring to. "Ebor" is right in saying there is no final authority. I never said so myself. But he is right, at the same time, only as regards a very minute proportion of the names in current use. Over the great majority, as regards our English rules of pronunciation, it is impossible for there to be a difference of opinion, when proper attention is paid to the matter, any more than there can be dispute over the correct spelling of the words we employ in our daily talk. In reference more particularly to the remarks of "W. P.," I really cannot presume to say why the authors he quotes give different accentuations—certainly they are not both right. Even the best educated are sometimes careless in their accentuation. Accents get misplaced also by compositors, and the misplacements are overlooked even by the author and office "reader" when correcting the proof-sheets. The names quoted by "W. P." should unquestionably be auric'omus, clavicula'ta, I'rio, Colön'opus, Radi'ola, Orni'thopus, Cŏpri'nus, Polyp'orus. *Leo Grindon, Manchester.*

Mr. Hibberd's Reversible Fruit Walls.—Would not a glass wall covered on both sides with fruit trees, and shaded from the sun with a mat or a shutter, be better and more convenient than those described and exhibited by Mr. Hibberd? The trees would enjoy a lower temperature, through the greater energy of radiation, and the cultivator would have two sets of trees, and two crops, instead of one. The idea of retarding fruit trees in the spring is excellent, and saves many more crops than are saved by direct protection to the blossoms. Any means that will retard the opening of fruit tree blossoms a fortnight or three weeks in the spring will often save the crop. *D. T. Fish.*

Measurement of Timber.—I almost think that the plan I used many years ago for finding the height of a tree is simpler in practice than the one proposed by Mr. Lea would be. I used an upright stick, about 6 feet long, with a cross-piece at the top set at an angle of 27° (see fig. 51), so that the distance from the base of the stick to the point A on the ground, where the line from the upper edge of the cross-piece meets the ground, shall be twice the height of the stick, C B. To use it, walk away from the tree holding the stick upright until the top of the tree is in a line with the upper edge of the cross-piece; then look down the cross-piece for the point A on the ground, and the height of the tree is half the distance from A to the root of the tree. Or the cross may

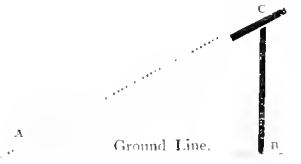

FIG. 51.—MEASURING STICK.

move on a joint, and the stick be fixed upright in the ground, and the cross-piece be moved until the upper edge be in a line with the top of the tree; then as A B is to B C so is the distance from A to the tree to the height of the tree; but the fixed one is the least trouble in practice, and they can none of them be accurate, because the table given for getting at the middle of the girth of the tree is a very vague approximation. A Silver Fir 50 feet high will girth nearly as much there as at 5 feet from the ground, whilst a Wych Elm the same height will be less than half the girth at 50 feet than at 5 feet. I have known men who could guess the quantity of timber in a tree much more accurately than measuring in this manner would give it, and I could myself almost have done so at one time. *C. W. Strickland, Hildenley, Malton.*

Fallacies in Fruit Culture.—As the attention of the readers of the *Gardeners' Chronicle* of the 12th inst. had been prominently called to the paper read by Mr. Shirley Hibberd before the Society of Arts, I entered on the perusal of this article on so interesting a subject with much gusto, having for many years indulged in the planting and personal management of a great variety of fruit and other trees. I first came on the observations of Mr. Hibberd about the fruits of the Oak, the Beech, the Apple, and the Pear, with all of which the present generation and their ancestors for many generations have been familiar. I soon discovered that those observations had been merely a preface to a polite and gentle onslaught on the pruning and management during late years of the trees producing the fruit of more southern and eastern latitudes, especially the Peach, Nectarine, Apricot, and other fruits demanding more or less protection in our climate by the practical horticulturists of the day. The increasing wealth and indulgence of the populations of England, France, Belgium, &c., have of late years produced an increasing demand for the fruits referred to, and at a diminished cost. The most experienced practical cultivators in those countries have accordingly for many years past applied all their skill in the pruning and general management of such trees to meet those demands. In these endeavours they have been aided by the publications of Grin, Bréhaut, Rivers, and many others, of the results of their labours. Such has been the general appreciation of their publications, and the course of treatment recommended, that I see, as respects the little treatise of our countryman, Mr. Rivers, the seventeenth edition of it had been called for in the year 1873. Having during late years devoted my spare time to the improvement of my garden and home grounds, I have taken into my own hands the pruning and management of the class of fruit trees to which I have before referred. I became dissatisfied with the yards of long-armed Peach, Nectarine, &c., trees occupying my walls with very inadequate returns of fruit, and I paid Mr. Rivers a visit. Soon afterwards I converted the old offenders into faggots, and replanted the walls with young trees 15 feet asunder, which have since been confined within those limits. Mr. Hibberd's experience and mine vary very widely; his general adoption of the superlative degree must also be borne in mind. He is reported to have read that "One great healthy Peach tree or Nectarine would produce more fruit and better fruit than a dozen trees systematically kept within bounds." Each of my wall trees, limited as I have described, now provides me annually with several dozens of fruit, with the very simple protection of strong cotton netting obtained from Messrs. Waller, of Manchester, projecting from the top of the wall, over the upper portion of the trees, removed the last week in May, and which afforded efficient protection against the frosts which occurred on May 20, 1874 and 1875. These protections, when removed, are numbered and folded over thin laths, and, laid under cover when dry, will last several years, and the cost of them does not exceed a shilling a tree per annum. After reading the *Gardeners' Chronicle* I place it in the hands of my gardener for the following week, who I hope does not belong to a class, of the existence of which I was not aware, and described by Mr. Hibberd as "gardeners who go hacking and slashing about, and who are evidently too thick-headed to know that when they have cut a waggon-load of branches off a tree it is scarcely possible to put them on again." In conclusion, I hope the owners and their gardeners who are acting upon the close system of pruning will not be scared by lecturers at the Society of Arts classing them amongst the unfortunates, "lunatics" and "idiots." If their instructors, the authors before referred to, were to reply, "*Mutato nomine de te fabula narratur*," I should be much surprised. *Charles Lawrence, Cirencester.*

The Trees in Kensington Gardens.—In my opinion the trees at Kensington and Parson's Green are neither killed by the drainage nor by atmospheric influences, but simply by premature decay, accelerated by having never been thinned to proper distances. If the authorities would look through them they would find many that show no signs of decay. If they were relieved by taking a few of their sickly neighbours from around them, they would be greatly improved both in health and appearance. Where room was made by so doing they ought to be replaced by planting well-prepared young ones of different species to their predecessors, planting them on prepared sites, well raised up, which from time to time might be added to, till they were hardly perceptible, which might be cheaply done by the Board of Works carting their road sweepings and cleanings to place round them. It is allowed that nothing in England is less understood than the art of forestry, and nowhere is this ignorance more conspicuous than round London. *Forester.*

Hardy Palms, &c.—I observe one of your correspondents appears to doubt the veracity of Mr. Wildsmith's statements concerning the above at Heckfield. I have known Mr. Wildsmith for some time, and I certainly think he is not in the habit of preaching one thing and practising another. Nor is it at all necessary for any one to attempt to uphold him in either undertaking. His preaching, he says, "may be followed or not," and as regards his practice, I would advise all who care to go and see it. And for the information of those who cannot, I may say that I have been at Heckfield more than once, and can fully bear out Mr. Wildsmith's statements. The flower garden at Heckfield has been illustrated and described in the *Gardeners' Chronicle*, which will speak for itself; I can only say that it is simply perfection; and I doubt if any garden of the kind can be found in England to compare favourably with it. Fruit is thoroughly well done at Heckfield, especially Grapes; and although Mr. Wildsmith has not often exhibited, he has well held his own. Lady Downe's Grape as grown at Heckfield is worth going a hundred miles to see; but enough, and, to borrow a cricketer's "saw," I consider Mr. Wildsmith one of the best "all round players" in Britain! *A. S. Kemp.*

Gladiolus.—I am accustomed to hear this word pronounced in three different ways—"Gladi'olus," "Gla'dyolus," and "Gladio'lus." The last I cannot defend; but of the other two I prefer the first. True, the four syllables are all short, but so they are in "soci'ety," and yet no one would ever think of pronouncing that word otherwise. Moreover, with deference to your correspondent, "T. F. R.," the

"i" in Calliope is not long, as Horace teaches in his ode to her, beginning—

"Descende cœlo, et dic, age, tibiâ
Regina longum Calliope melos;"

so that the name of the heroic muse may, if necessary, be invoked as an authority on the question, and may very well be left to decide it. *W. F. H., Weybridge.* [Calliŏpe, Lat. Dict.]

—— On p. 244 "T. F. R." says that Gladiolus is a Latin diminutive of Gladius, and that the accent should be on the first syllable. I presume that he is aware of the occurrence of the name, three times at least, in Pliny, who, in xxi.-ii., applies it to some kind of early-flowering Iris. All the best Latin dictionaries accent this name Gladi'olus. Perhaps I ought not to have cited Calliope, the latter being Greek. Giving this up, there still remain for me Radi'ola, Modi'ola, Lute'ola, Laure'ola, and many more. *Leo. Grindon, Manchester.*

Othera japonica (Hort.)? Thunberg.—I consider this to be perfectly hardy, as it has stood severe frost here this winter without any protection, without even the tender young leaves being in the least injured, when Veronica Girdwoodiana was killed alongside of it. *W. E. Gumbleton, Queenstown, Ireland.*

Mr. Hibberd's Recent Lecture.—It would be interesting to know whether it occurred to the members of the Council of the Royal Horticultural Society, or indeed to any of the horticulturists present at the rooms of the Society of Arts on the 9th inst. that there was something anomalous in the fact that to give a lecture on a purely horticultural subject Mr. Hibberd had to take shelter under the roof of a society that is only associated with gardening in a remote degree, whilst of horticultural bodies in the metropolis there does not appear to be one that can, or is, willing to afford the desired accommodation. It is true that under Mr. Lindsay's secretaryship an attempt was made to establish a series of evening lectures on botanical and horticultural topics at South Kensington, but these seem to have met with the fate that attends everything that is sought to be promoted at that ill-fated place, and the experiment has not been repeated. South Kensington is far too inconveniently situated to render it an attractive spot for evening lectures. A central place in London is essential, where all interested can reach it with ease and as conveniently regain their homes by rail or other means when the lectures are concluded. That evening lectures on popular horticulture given by men having complete knowledge of the subjects they may select would prove both attractive and successful there can be little doubt, for whilst it is most probable that a portion of the practical element would always be attracted to attend, it is also equally probable that many of the outside public would attend, as there is at all times prevalent, even in the most non-horticultural circles, enough of interest in gardening matters to induce this class to seek for further information. It has long been a reproach to horticulturists that whilst the agriculturists have their Chambers and Clubs for the discussion and consideration of matters that have for them either a special or general interest, the former have nothing of the sort, for what clubs thay have seem to favour no nobler work than periodical assemblages of their members for eating and drinking. Whilst most of the sciences have met with friends liberal in endowments for their behoof, poor horticulture has received only the cold shoulder, and yet I could imagine that many of our rich men who have gathered the purest joys and the most exalted recreation from gardening might have, ere now, rendered to horticulture some recompense by bequeathing of their wealth enough to pay for the delivery in London or in some of our great towns of periodical lectures on horticultural topics by able men—not endowing some horticultural chair which might in the hands of an idle man soon become a sinecure, but making it a condition that the same person should not give more than one lecture during the year, and thus opening up a field for the display of the knowledge and talents of our best men. As, however, such an idea may be esteemed chimerical by those who are sceptical of ever seeing such a foundation, cannot something be done practically, and without waiting for extraneous help, to remove this reproach of mental inactivity? Why can we not have a Gardeners' Club in the metropolis, established on the same basis as is the London Farmers' Club, with its periodical evening meetings, papers, and discussions?—and is it not probable that the rooms of the Society of Arts or some other suitable and central spot that is not an hotel might be obtained for the purpose? We have already a "Lindley" and a Horticultural Club which was proposed at one time to be called the "London" Club, but seeing that the honoured men whose names I have just mentioned were pre-eminently literary horticulturists, I fear that the names honour the clubs more than the clubs honour the names. Perhaps no better designation for an association adapted to supply the want pointed out could be found than that of "The Central Chamber of Horticulture," as no one would for a moment associate with such a title any connection with the eating and drinking which is at present the chief work performed at the "Lindley" and the "Horticultural." To such a Chamber might also be affiliated other Chambers that would probably be formed in some of the large provincial towns. The subscription to such a club might be moderate and within reach of all horticulturists, as the principal expenditure would consist of rental of place of meeting, stationary and secretary's salary; but in return it would supply to all horticulturists a means and basis for intellectual work and social discussion on all the subjects of interest to the trade and profession that does not at present exist. Of course I make due allowance for the existence of a powerful and able Horticultural Press, but the need for personal intercourse and instruction through the means of lectures, papers and discussions, exists all the same. Will not a few men of influence come to the front, and establish an association on the basis pointed out? *A. D.*

Peach Growing in Old Pine Stoves.—We have here two old Pine-stoves, which have been turned into Peach-houses. They are 30 feet long by 18 feet wide, and have a rather flat roof. There are two Peach trees in each house, which were formerly "riders" on the kitchen garden walls. The trees were removed to the first house three years ago, and to the second house two years ago last autumn. They are planted in an outside border, and their stems, which are 5 feet long, are brought through the front lights and trained on wire trellises. The crops have been very good in each house during the last two seasons, the fruit averaging 10 to 12 inches in circumference. The first house is now well set with a promising crop, and the second is a cluster of flowers. I may add that the borders are well covered with leaves and litter, and also that the trees have almost covered the house with excellent wood. *E. Roberts, Dorfold Hall, Nantwich, Feb.* 21.

Pyrethrum Golden Gem.—I note at p. 243 the remarks of "W. S. A." in reference to the above, which he describes as a "real gem." My experience points to the conclusion that, if a gem at all, it is certainly not one of the first water, for whatever may be its merits as a pot plant for the conservatory, as a bedder-out it is immensely inferior to the old Golden Feather. It was fairly tested at our nurseries last season to the extent of some 500 or 600 plants grown from the original packets and planted in various positions side by side with P. Golden Feather, the latter proving itself in every instance to be vastly superior to Golden Gem. Both raised and planted at the same time, P. Golden Feather remained compact, massive, and brilliant long after P. Golden Gem had become unsightly and worthless. As an ornamental foliaged plant Golden Gem is straggling in habit, poor in colour, and altogether wanting in the fine quality as a bedding plant which characterises our old favourite Golden Feather. *Charles Daniels, Norwich.*

How about Selling the Lime?—Whether chalk or limestone affords any heat of itself or not, &c., does not matter a single bawbee in this great question of limekiln heating. If the kiln will keep the temperature of our hothouses up to the desired degree in all weathers, without necessitating our going into the "lime trade" on a huge scale, in any garden where the kiln is employed, and if we can sell the lime profitably, there is not the shadow of a doubt the system will pay. Has not D. T. Fish almost staked his reputation as a chronicler of facts on "the event"? and has he not proposed the gold medal to the inventor? But leaving the first "if" at present, I would ask, how about selling the lime? Do farmers use it, and do builders care to take it on any terms?—or is it consigned to those general receptacles where a signboard is usually fixed with the intimation that "rubbish may be shot here"? I have been about "some" over this kiln business, and nothing has struck me more than the immense accumulations of lime, slaked and fallen by long exposure to the air, which I have generally seen in the neighbourhood of the kilns. If this is the case everywhere, "lime tumuli" are likely to puzzle future geologists as much as the boulder drift did at one time, as they are likely to be found on all formations, especially on the chalk, yet without presenting any features common to the strata of the district. For example, on a marine formation close to the estuary of a great river celebrated for its shipping, I hear that the lime deposit has accumulated to such an extent as to threaten a noted establishment with the fate of Pompeii and Herculaneum. *Antediluvian.*

Ouvirandra fenestralis.—I had hoped to have seen more than has yet been written on the above most wonderful and extremely handsome plant; and feeling anxious to see the treatment which suits it best thoroughly discussed, I venture to add my testimony to the fact that the best, the most robust, the largest, strongest, and healthiest plants I have ever seen have all been treated on the cool method. Many who read this may recollect a specimen leaf I carried in my portfolio when travelling for Messrs. Veitch, of Chelsea; it was over 12 inches long and remarkably broad and strong. This leaf was from a plant grown in an ordinary stove, with no expensive appliances, and from that fact, and some experiments which I tried when gardener at Fir Vale with the Ouvirandra, I have long been convinced it is of easy culture, and will prosper immensely better under cool than hot treatment. My experience has taught me that we have a great deal to learn on the subject of temperature. Plants may and do live in very great heat, produced at very great cost, but who shall say how much healthier and better they would be with a lower and less exciting atmosphere? *William Payne, Exotic Nursery, Taunton.*

Horticultural Spelling.—As an illustration of the common blunders of the ordinary newspaper press in spelling plant names, I send you a quotation taken from the *North Wales Chronicle*, of the 12th inst., which in an account of certain funeral obsequies at Llanwenllwyfo, Anglesey, says:—"Two handsome wreaths and a cross, which were manufactured of stephanotis, white double primulas, maiden's hair fern, adicutum, lilly of the valley, white lilac, hyeson and fuchsias, &c., were laid on the coffin." The *North Wales Chronicle* is one of the oldest provincial papers in the kingdom, and it is altogether unworthy of it, to allow such palpable blunders to appear in its columns. *E.* [We think a large charity should be exercised in these cases. We often need it ourselves. EDS.]

Turnmoss Red Celery.—We beg to take exception to Mr. Ramsay's statement at p. 212 that the above variety of Celery is synonymous with his Solid Red. He states that he has grown his variety for fourteen years, and that he sent it out twelve years ago, at which time none of the other varieties were in circulation. The Turnmoss Red may not have been in circulation at that time, but it was certainly in existence long before that, as it has been in our possession and that of our predecessor on this place (Mr. Robert Clark) for nearly thirty years. We have never sent it out in the trade, only seeding it annually for our own use, but we have never been backward at giving a little seed to a friend, whether amateur or professional, so that it is just probable that the varieties Mr. Ramsay names in his note (including his own) may have all emanated from the Turnmoss Red. We are large growers of Celery for market, and it is to our interest to acquire good varieties; but we never found anything to equal this either in size or quality. We have repeatedly grown sticks from 8 lb. to 10 lb. each. *Copeland & Doran, Market Gardeners, Turnmoss Gardens, Stretford, near Manchester, Feb.* 15. [In the report of the late trial at Chiswick the Turnmoss Red and Ramsay's Solid Red are described as synonyms of Leicester Red. If they are all the same, on the score of priority, the name Leicester Red has no claim to be retained. EDS.]

The Effects of "Pulley Pruning" on Fertility.—This is an interesting practice, hit off with a happy name by Mr. Hibberd. Is the effect of weight in such cases as those of the Vines, Melons, Cucumbers, &c., recently adverted to in the *Gardeners' Chronicle*, wholly mechanical or partly sympathetic? Mr. Hibberd seems to think partly the latter; hence perhaps his expression, "make-believe fruit bearing." But then the latter idea points beyond sensitiveness to a species of intelligence, or something akin to it. But in many of our common operations, such as root pruning, we have, as it were, strong hints given the plants to cease growing so much, and take to flowering or fruiting more. And the plants take the hint, and do as we list. Are such things fully and exhaustively explained on purely mechanical grounds? *D. T. Fish.*

Ice-Stacks.—Will you kindly allow me space to say that all your correspondent, "A. D.," at p. 179, says concerning the efficient method adopted for the preservation of ice at Tollymore Park, the seat of the Right Honourable the Earl of Roden, is perfectly correct? The pits alluded to are made on a gentle slope, so that the ice can be tipped into them from the carts, which serves the double purpose of keeping it clean, and also when it is broken up where it is to remain it becomes quite solid, and the desirability of this, I think, few will dispute. It also saves the vast amount of labour connected with the majority of ice-houses of first breaking the ice outside, and then either carrying or wheeling it to its destination. Moreover, where hands are scarce, ice is often thrown into the ice-house in a very loose state, and it often happens that not even one man is put inside until it is absolutely necessary to keep the doorway open. *J. T.*

How to Grow a Crop of Potatos Free from Disease.—As the Potato disease seems to prevail more or less as each season comes round, it is quite clear that every reasonable means ought to be used in order, as far as possible, to prevent its effects; if we would keep this most useful esculent, as a home-grown vegetable, worthy of that esteem which it has long claimed. The plan adopted here was recommended by Mr. J. M. Barnes, in the *Gardeners' Chronicle* for April 11, 1874, and is the most practical idea I have either heard of or seen adopted. I am quite confident in asserting that if his plan had been tried by the Potato growers who are regularly in the habit of reading the above paper, we should not have seen so unfavourable a report in the autumn of last year of the crop in England. For the benefit of those who may not have seen Mr. Barnes' note, I will give the particulars of his management. Draw out trenches, 12 inches wide and 6 inches deep, in which put the manure, if the ground has not been manured previously; then plant the Potatos in a double row close to the edges of the trench thus: cover them over with the soil taken out in forming the trenches, and add as much more as will raise the rows (trenches before) to a height of about 6 or 8 inches higher than the ground between the rows. The distance between the rows must be determined upon, according to the habit of the variety planted; after this they will require no further attention beyond keeping clean till about July 12, when the disease may be expected shortly to make its appearance. Then go over the rows, and with the hand or rake handle lay over the tops hither and thither into the spaces between. We have planted our late Potatos the two last seasons in the above manner, and have found it to answer admirably. The tops are laid over in order to prevent the disease being washed from them to the Potatos. *Jas. W. Brunskill, The Gardens, Headingly House, Leeds.*

Apiary.

Bee Management in Early Spring.—The coming spring is likely to be a very disastrous one for bees and bee-keepers, and to avert in some measure the expected evil I hope to give in this article instructions which may prove useful both to the bees and their masters. To understand precisely the position in which we now find our stocks, it is necessary to recall to mind the disastrous unprofitable summer of last year. After a spring which was fairly propitious the long-continued rain prevented the bees from filling their combs as usual with honey, and this told two ways against after prosperity—the queen, having much empty worker comb at her disposal, instinctively filled the cells with eggs, the little honey gathered being consumed in nourishing the abundant brood; when fine weather at last arrived our hives had a teeming population, who only served to consume the honey without being able to gather more, simply because the honey season was past. The unhappy fate in store for our little friends became apparent to every one who could and did investigate the condition of his stocks, and I, in the *Times* and other journals, sounded the note of warning in a plea to feed the bees. Many persons doubtless, by timely succour, thus saved their stocks; others, by want of this provident attention, soon found their hives tenantless; and yet again a third class fed the bees sufficiently to tide over the actual winter, only to die when the exigencies of warmer weather and thousands of young brood call for food, which is not in the hive, and which the flowers do not yet yield; to the last class, which I am sorry to say this season nine-tenths of bee-keepers belong, I chiefly address my present writing, and I will endeavour to give plain instructions how to save their bees.

The work of the bee-master may be said to commence with the first fine days after January, and commonly we get such by the middle of February. When the opportunity does occur let it not be lost, for in our uncertain climate we never know what to-morrow will be like. Every stock should undergo a thorough examination and sanitary supervision. The floor-board should be changed if possible, or thoroughly cleaned, all dead bees removed, and the domicile made sweet and clean. To the adept these little operations are matters of small moment, but many persons would hesitate long before they would venture to lift up and reverse a beehive. If they aspire to become bee-masters they must overcome this timidity, but at the same time I know a bee sting is most painful to many people, and never desirable, so before undertaking operations which may irritate the bees the protection of a veil and gloves should be sought, which, being donned, the operator is sting-proof. I am supposing the hives under examination are common straw skeps (which yet far outnumber all other kinds in England); these will generally be found firmly cemented to the floor-board with propolis; a broad chisel driven underneath will easily loosen the attachments, as propolis is very brittle in cold weather, and if the bees be strong and active some will hurry to the entrance on warlike thoughts intent; it is well in this case to leave the hive alone for a few minutes, when generally it may be gently but firmly overturned without fear, but should the bees prove aggressive, blow a puff of smoke from some old rags or a tobacco-pipe amongst them, and they will be soon quiet. If the operator be fearful, he may commence with this operation, leaving them to

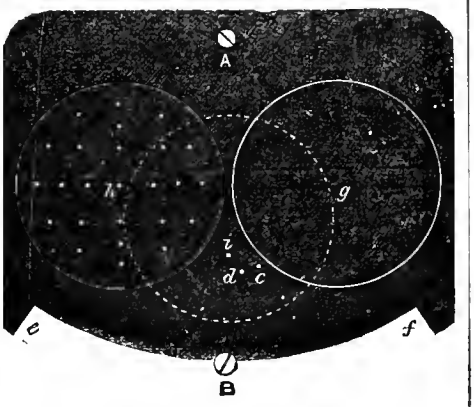

Fig. 52.—The Cheshire Feeding Stage.

digest the smoke for a couple of minutes before proceeding to work. Probably the weight of the hive will at once tell us our aid is not proffered too soon. Glance down the combs, and note the presence or absence of brood as well as honey. Every prosperous colony by this time should be breeding, if it is not there must be one of two things—either there is no honey or no queen; in the latter case, which should be clearly ascertained, it is useless to keep the stock longer; the inhabitants, even with the utmost care, will be sure to die out before a queen can be reared and fertilised, and now the poor queenless bees may be utilised to strengthen some neighbouring stock which will be all the better for this addition to their numbers. It is a

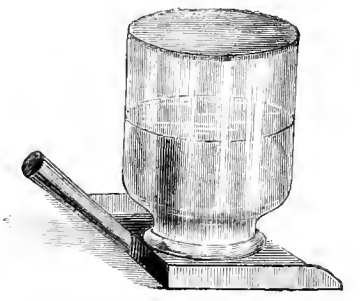

Fig. 53.—Arrangement for Feeding Bees.

common remark of a bee-keeper who finds his bees have died, to say "they did not die of starvation, for there was plenty of food in the hive," and yet it is quite possible and probable that "starvation" should be the verdict, notwithstanding the presence of honey, for when the weather is cold, unless the honey be near the clustered bees, they starve; for to reach the outside combs they must travel some distance through an atmosphere they cannot bear, to honey that is frozen, and so they die, although near abundance.

In the months of February and March stocks of bees are at their worst, the old inhabitants are mostly dead or worn out, and young bees have not been reared in sufficient numbers to take their place; the queen is probably yet in her prime, and her natural power and instinct to deposit eggs in full force, but the same instinct teaches her and her workers it is useless to rear brood unless provisions are coming into the hive, and, moreover, brood cannot be reared in a comb space greater than the bees can cover so as to retain the necessary animal heat, therefore successful increase is dependent on these two things. The weather may get suddenly warm, but the flowers cannot so quickly yield honey; the plants must have time to grow, and even then a sharp temporary frost may cut off all our hopes for a time, but the bee-master may show his skill by judicious feeding, so supplying the place of natural honey sources. Bees will not store food in cold weather; to do so would produce discomfort, and, perhaps, dysentery; therefore, it is not an easy thing at such times to rescue a colony of bees from impending starvation. Should such a case be found, the best food to give is a stick of barley-sugar, which should be pushed right into the cluster where the bees are thickest, care being taken not to over-supply them, or the barley-sugar may deliquesce into a sticky mess, proving a trap for the unlucky bees. Barley-sugar may also be placed in a pickle-bottle, and inverted over the feed-hole at the top of the hive; it will be soon seen if the bees are able to seek it; if they do not, the first resource must be adopted. As the spring approaches the bees will gain strength and numbers, when there will be no difficulty in administering food in abundance as long as they require it. There is a golden maxim, "Bees waste nothing," therefore it is poor economy to stint them in food: should you give them a pound of syrup more than they require, you may rest assured they will give you a pound of honey more than they otherwise would have done. Bee syrup should be made as follows:—Loaf-sugar, 2 lb.; water, 1 pint; cream of tartar, ½ oz.: boil 10 minutes. As the weather becomes warmer more water may be used, say half as much again; as a feeder there is nothing better or cheaper than a common wide-mouth pickle bottle. This should be quite filled with syrup, a piece of common net or leno tried over it and inverted over the feed-hole of the hive, there being no vent the liquid only escapes when the bees suck, which (weather permitting) they are very glad to do; if the bottle is to be applied to a common straw skep (which should have a feed-hole, or, if it has not, one must be cut), it is necessary that there be a level platform to stand it on. This may be formed of a square of wood, with 1½ inch hole in the centre, adjusted on a setting of plaster of Paris, over which the bottle should be stood. A more scientific mode of feeding, which is calculated to give the best results, is by feeding through a little apparatus, called "the Cheshire feeding stage;" its cost is but a few pence, and may be made at home, so I will extract its figure (fig. 52) and description from my *Manual of Bee-Keeping* as follows:—

"A plate of vulcanite is fixed upon the hive board by a screw (A), to receive which a hole is first made in the vulcanite with a red-hot wire. The central circle represents the feed-hole of the crown board, which should be situated exactly between A and B; the latter, a locksmith's screw or drawing pin, is placed so that its head laps over the edge of the plate and holds it in position, while it permits its rotation as far as the stops *e* and *f*. The plate is pierced, as per pattern in figure, by a heated knitting-needle, the burrs removed by scraping, and the under side roughened by a sharp knife, so that the bees may have foothold. If the whole has been arranged as described, and the feeding stage turned until the stop *f* touches the screw B, the circle on the right will be over the aperture in the crown board, and as this circle contains no holes, the bees, although the bottle may be on, will get no food; but if the stage be now slowly turned back again, the hole *c* will pass over the feed-hole, allowing only one bee to regale herself at a time; a further movement, and *d* is reachable from beneath, next the hole near the edges of the left hand circle, allowing two and then three bees to sip at our sweets; and as the plate turns, hole after hole comes into position until the maximum is reached, when the stop at *e* arrests the revolution of the vulcanite. With the use of a perforated feeding stage, such as I have described, it is not necessary to tie over the mouth of the bottle, and as the stage is intended to be a fixture, the following little appliance is used to invert the full bottle without spilling the syrup: Of zinc, tin or galvanised iron, is made a small shovel, as in fig. 53, about 4 inches square, exactly after the model of an ordinary ash shovel without the sifting holes. The bottle having been filled, the shovel (concave side down) is placed on the mouth, and the whole inverted and stood on the feeding stage; when there the shovel may be withdrawn, leaving the syrup at the disposal of the bees. If it be desired to remove the bottle again before it is empty, all we have to do is to slide the shovel under it and invert as before. If made strong enough, this little instrument will also be found useful as a scraper to clean floor-boards, supers, &c."

Our great aim now should be to fill our hives with bees, so as to have an army of anxious workers ready to sally forth when the orchards are gay with fruit blossoms, and to effect this object there is nothing more sure than constant and gentle feeding. In our uncertain climate we must not depend on the weather. Should a warm, genial time come, and the bees can gather any honey, they will breed; but should the honey-supply stop for a few days most surely the young brood will be mercilessly ejected, and even the mature pupæ, all the labour and honey that has been expended on them of course being lost. This may be avoided by artificial support. Put on the bottle, feed through two or, at most, three holes, without any break, until honey comes in abundantly, and the probability is the stock will repay its generous owner many-fold. A few ounces of syrup per diem will be quite enough. If too liberally supplied harm will ensue, for the bees will fill cells with syrup to the deprivation of nursery room for the use of her majesty. By careful attention in the matter of feeding the hive may be filled with brood from side to side, forcing the bees to store their honey in a super, greatly enhancing the value of the honey. There is another food besides honey that bees consume to feed their young—that is pollen, and before this is yielded by natural sources in sufficient abundance we may advantageously supply a substitute in meal, which may be of Rye, Peas, Wheat, or many other things. If a few handfuls of this, mixed with bran or sawdust, be put out in the sun on a tray, it is rare fun to see the little fellows roll themselves in it, pack their pollen-baskets full, and return home in triumph with their patent baby food. The Americans and Germans use meal for their bees much more generally than we do. I am afraid to say how much they say is consumed by their bees, but they reckon it by sacks for a single apiary! Although bees will take meal early in the season, they pay very little attention to it when the flowers yield a more natural provender.

Hitherto I have written especially for the owners of straw skeps, but much of my instructions will be equally applicable to frame hives, with the additional satisfaction that they gave many more facilities for good management. When we have a plurality of frame hives it will be often found that by the exchange of combs one stock can help another either in honey or brood; in the former case it is very advantageous early in the year before the bees will take in food. Should the happy case occur that a frame hive has yet, after the winter's consumption, some sealed honey, this should be, one comb at a time, unsealed with a sharp knife; the comb being returned to the hive wet with the running honey stimulates the bees to activity, brings them into industrious habits, and induces the queen to lay her eggs—all elements of future prosperity. After the first spring-like days there is no excuse for the owner of frame hives if his bees should die of hunger, and a little kindly and thoughtful attention will keep all safe till the swarms may be expected, before which time I shall have pleasure in writing a supplement to this article treating of swarming management. *John Hunter, Eaton Rise, Ealing.*

Florists' Flowers.

NEW VARIETIES OF CARNATIONS AND PICOTEES.—The following notes, transcribed in answer to various inquiries, may possibly be of interest to a wider circle than my immediate correspondents, and if you think them worthy a place in your columns I shall be obliged.

Commencing with scarlet bizarres, Campanini, raised by Mr. Turner, is a very large flower and full, with a good-shaped petal, but with me the colours were sadly deficient. This may have been owing to the season, which in my neighbourhood was very dull and wet.

Mars, a seedling raised by Mr. Hextall in the latter years of his long and much respected life, is no doubt a seedling from Admiral Curzon, which it much resembles in its habit. It has not quite so good a petal as that old favourite, and here again I was disappointed, as with me the white was very dingy.

Mercury, another seedling of the same raiser, though sent out as secondary to Mars, will, or I am much mistaken, take a leading place in this class. The bizarre is broad and well defined, whilst in other respects the flower has been all I could desire.

Other varieties, as Guardsman, John Burnett, I have seen, but not sufficiently to offer a definite opinion upon them. Admiral Curzon and Dreadnought (so much alike that I grow them together), with Sir Joseph Paxton, yet remain, and seem likely to remain, far the best in this class.

In crimson bizarres I have seen one only of the new ones, J. D. Hextall, a variety raised by Mr. B. Simonite, of Sheffield (than whom no florist has done more in raising new varieties of late years). This will take a leading place in its class, having a fine petal with plenty of colour.

In pink bizarres my notes are also limited, having seen two varieties only, both raised by Mr. Bower, of Dirkhill, Bradford, and at present unnamed. Of these I consider No. 2 far the best, for although somewhat smaller than No. 1, the petal is everything that can be desired, broad, thick in substance, gently cupped with the clearest white I ever remember to have seen; the bizarre is a deep scarlet, with a pale pink flake, a most telling flower, and one that is sure to please, more particularly when placed alongside some of the higher-coloured varieties.

In purple flakes I can recommend Ajax (Hextall), a large full flower, smooth, well-marked, and of strong growth. It is a telling variety for the home stage.

Lord Derby (Fletcher), a very large flower, heavily flaked, with deep purple petal, smooth, and large, early and a strong grower. It must not be overgrown, as it is much given to spindle.

In scarlet flakes I grew Wm. Harland (Harland), Lass of Richmond Hill (Fullerton), and Clipper (Fletcher). Wm. Harland appears to be a seedling from Sportsman, but of a much more delicate constitution, so delicate, indeed, that I may dismiss it in the words of a friend of mine, who like myself grew it, and who said it was "too delicate to live."

Lass of Richmond Hill is a large flower of good colour, and very distinct. It had one serious fault with me, that was, the edge of the petal curled up from each side to the middle, giving the petals a pointed appearance. Still it is not improbable that in a warmer climate than ours it may lose this curl.

Clipper, raised by Mr. John Fletcher, of North Bierley, near Bradford, is one of the best scarlet flakes I have seen. It is a seedling from John Bayley, and follows that variety in the grass. I have grown it for two years, and have found it constant. The flake is very highly coloured (an intense scarlet) and broad, with a pearly white ground, pod good, and flower large; the edge free from serrature. It keeps a long time in flower without changing its colour. It should not be highly stimulated, as, being so high-coloured, it is very liable to run.

Of rose flakes I have seen two varieties, one named Mary Anne, also raised by Mr. John Fletcher. This in its period of bloom is a second early, and is very large. The petals are very broad; colour a deep rose; the petals are very stiff and leathery in texture and require to be arranged as the flower expands. The flake is very broad, running the whole length of the petal, with a smooth edge. The growth is very strong, and the grower may always count on having a pot full of grass. The other variety is one raised, and exhibited at Manchester, by Mr. Bower, and since named E. S. Dodwell; something in the style of a good Lovely Ann, undoubtedly a splendid flower, and one that may be expected to hold a foremost place in its class for a long time to come.

In Picotees I saw John Harrison, Robert Scott, and Thomas Jivens—three varieties raised by Mr. Thomas Flowdy, of Gateshead. John Harrison is a heavy red, with a large, broad petal and smooth edge. A good flower, but late. Robert Scott: heavy red, fine petal and full flower; may be described as an enlarged edition of John Smith. Thomas Jivens, light red, is a very large flower, with a fine edge. This variety, in my opinion, is a seedling from Amy Robsart (Dodwell), which it very much resembles.

In other seedlings I saw Mrs. Bower (Bower), light red edge; an immense flower, hardly so good in the white as is desirable; but still I consider it a sort which is indispensable to the raiser of new varieties. I incline to think the dull, damp weather we had during blooming time had a prejudicial effect upon it; as, when in company with the late Mr. George Edward, of York, I saw it for the first time, I well remember our mutual opinion was that it was the finest Picotee we had ever seen. There was then no sign of that creaminess which, unhappily, has been perceptible this season; had there been, my old friend would have been the first to remark upon it. Another light edge, by the same raiser, is Clara, a grand flower, with large petals and a fine edge. This variety is not yet sent out. Mr. Bower tells me that he has a sport from this to a light purple. I have seen the flowers of both, and am satisfied that were it not for the difference of colour in the flowers no one could distinguish the one from the other.

At the National Show at Manchester a light red, raised by Mr. Simonite, which took the first place in the class, and was also in his stand, is a grand flower, very much to my taste, and, when accessible, certain to be in great demand.

In purples I have notes of Ann Lord (Lord), Clara, before mentioned, and No. 24 (Lord). Ann Lord is a variety raised and sent out by Mr. Lord, of Todmorden; it is a splendid sort, wire-edged, with a clean petal, and of good substance. No. 24 (Lord), since named "Alice," is one of the finest medium-edged we have, and will no doubt take a leading place in its class. It is pure and clean; in fact, it possesses in perfection the characteristics which prevail in all Mr. Lord's flowers, viz., purity and freedom from bars or spots.

In rose edges I only saw two—No. 14 (Lord), and a seedling exhibited by Mr. B. Simonite. No. 14 (Lord) is a very promising flower, and one I expect to see take a leading place next year. It is a bright rose, heavily edged; possesses a fine broad petal. The seedling exhibited by Mr. Simonite must have been a beautiful flower a few days before the exhibition. As seen it was faded in colour, no doubt from age. It is a medium rose, with a beautiful wax-like ground.

In conclusion, I must say that I look forward with much expectation to the recurrence of our next national show, and trust that the gatherings may go on increasing from year to year in strength of members. At the same time I would recommend that the show should be made movable, though I do not think anything will be done in that direction for two or three years, as the principal Northern growers are within easy distance of Manchester. *George Rudd, Undercliffe, Bradford.*

CLASSIFICATION OF PLANTS.

[THE following is an abstract of Mr. W. T. Thiselton Dyer's second lecture at the Royal Institution. See *ante*, p. 236.]

The important physiological differences which are to be found in the extremely diverse modes of nutrition of Fungi and Algæ are not without their parallel in other parts of the vegetable kingdom. In the case of flowering plants we have many cases, such as the Bird's-nest Orchis (Neottia nidus-avis) where the plant derives its nutriment from the products of the decay of other plants. The species which exhibit this singular divergence from the normal mode of life of chlorophyll-containing plants are spoken of by physiologists as Saprophytes. In such plants the function of chlorophyll is completely in abeyance, and this peculiar pigment is consequently undeveloped.

But no one has ever dreamed of separating flowering plants into two groups, the one containing chlorophyll and decomposing carbonic acid with the evolution of oxygen, the other absorbing oxygen and evolving carbonic acid. The obvious affinity which subsists amongst flowering plants as a whole, and the fact that Saprophytes are more nearly related to different green plants than they are to each other, has prevented any forcible divorce of the kind ever being introduced into a system of classification.

It may be urged, that what is thus shown to be clearly reasonable in the case of flowering plants, ought equally to hold true in the case of Thallophytes. Hence we are led to conclude, as was suggested in the last lecture, that Fungi do not form an independent group, and that there is much less reason to suppose that they have been derived from one another in a continuous series, starting from the very simplest, than that they are the representatives of a number of lateral offshoots from the main stream of descent of Algæ, which have from time to time lost their chlorophyll and taken to a predatory mode of life. Instead, then, of imagining that from the starting point of the vegetable kingdom two stems broke away, one belonging to Algæ and the other to Fungi, it seems probable that there has only been one such stem, upon the innumerable branches of which the existing groups of Algæ and Fungi find their places.

Now the details of this branching we are at present far from being in a position to more than guess at. But it has been found that roughly we are able to

arrange Fungi in the same four classes with regard to increasing complexity of organisation in which on the same principle we were able to arrange Algæ. If we knew the family tree of the Thallophytes we should doubtless find forms of the same grade of organisation, whether Fungi or Algæ, on the same level, and the simpler forms will of course be lower down than the more complicated. We divide Fungi therefore into

Protophyta	.. ..	Primitive Thread-plants.
Zygosporeæ	.. ..	Conjugating Thread-plants.
Oosporeæ	.. ..	Egg-bearing Thread-plants.
Carposporeæ	.. ..	Fruit-bearing Thread-plants.

The Protophyta multiply entirely by cell-division. They include the two groups of Schizomycetes and Saccharomyces. The former are the active agents in all kinds of putrefaction, while the latter play a similar part in fermentation. The researches of Dr. Klein seem to afford good ground for the belief that small-pox and many other contagious diseases are due to the presence in the tissues of minute organisms belonging to this group of plants.

In Zygosporeæ we meet with the simplest form of sexual reproduction—conjugation. Many of the Moulds exhibit this process, in which a spore is formed by the junction of two branches of the thread-like cells (hence the name Thread-plants) which form these plants.

Amongst the Oosporeæ reproduction is effected by a modified form of conjugation. The two structures which take part in it are different instead of similar. Peronospora is a type of this group.

In the Carposporeæ fertilisation does not simply give rise to an oospore, but sets up complicated processes of growth, producing structures of considerable size, and often containing myriads of spores. Each of these, therefore, by no means represents the whole product of fertilisation, but only a minute fragment of it. In this group we place all the larger Fungi except the Myxomycetes.

Amongst the Carposporeæ, and in the subordinate group of Ascomycetes, modern researches require us also to place Lichens. These organisms appear to be really an aggregate of a Fungus and an Alga; the latter earns the nutriment (by decomposing atmospheric carbonic acid) necessary for itself and for the Fungus which it supports. This remarkable theory is due to Professor Schwendener, of Basle, but it has been confirmed by Bornet in France and Treub in Holland. The chief arguments in favour of the view are:—

1. The green structures found in Lichens (gonidia) appear to be identical with others capable of independent existence, which are universally recognised as Algæ.

2. It is possible by sowing the spores of a Lichen on the appropriate Alga to obtain the same kind of attachment of the threads of the Fungus to the cells of the Alga which is met with in Lichens.

3. It is also possible to extract the gonidia from a Lichen and to cultivate them. They then exhibit the modes of reproduction characteristic of Algæ.

As then, on the one hand, we can separate the gonidia from a Lichen and prove them to be in no respect different from an Alga, and we can invert the process and reconstruct—at least in its essential features—the structure of the Lichen, it is difficult to resist the conclusion that Lichens must cease to be regarded as a division of Thallophytes equivalent to Fungi and Algæ.

The Villa Garden.

MOSS ON LAWNS.—We find much difference of opinion as to the growth of moss on lawns; one Villa gardener likes it on the ground that it makes a nice soft yielding carpet to walk on, while another detests it, and would be willing to adopt any method to get rid of it. One thing is pretty certain, that where there is a surface growth of moss there will be a want of vigour in the grass.

How to Get Rid of Moss.—The cause of the growth of moss is invariably a poor soil and want of drainage; if water is present near the surface in poor grass land a coating of moss is pretty certain to result, and the same holds good of grass plats. Several remedies have been prescribed, but two of them are most commonly applied. One of these remedies is a dressing of rich soil, or thoroughly decomposed manure that will crumble to pieces, and before it is applied it is well to scratch the grass with a rake, and give it a dressing of common salt, at the rate of half a pound or so to a square yard of ground, and following the dressing of salt with that of rich soil or manure half an inch in depth. The first heavy rain will wash the dressing about the roots of the grass, and it will soon begin to make a quick growth, and while it is doing this the lawn should be well rolled when the weather is favourable. Another mode is to dress with lime instead of salt, following with soil or manure, but putting the latter on a little coarse in regard to size, and allowing it to crumble to pieces by the action of rains, when the lawn should be raked and rolled, as previously recommended.

Some gardeners sow at the time the dressing is put on a little of a good mixture of renovating grass seeds, which is quite necessary where the grass is at all bare. Poa annua is much recommended for sowing over bare spaces under trees; and, as a gardener once remarked, "the fact of its being a troublesome weed insures its growth in any position." Nothing perhaps gives a green carpet in winter better than this grass, and we have seen it employed on some of the London squares with manifest advantage.

It cannot be too warmly insisted on that this is the time of the year to lay the foundation of a good smooth verdant grass plat. Any indentations in the surface should now be set up to a level, by taking up the grass where the depressions occur, and filling up with soil, so as to raise the level to the required height; where it is necessary to replace worn-out or bare turf, it should be done while the weather is moist, and before dry weather sets in and the ordinary work of the garden makes pressing demands on valuable time.

It is in the hot summer time when we appreciate at its full value a cool, pleasant grass plat; and thus it is that we recommend the adoption of certain simple measures at this season of the year, which do so much to ensure a perfect lawn.

GRAVEL WALKS.—The condition of these requires oversight at this season of the year, if we would have them in good condition during summer. Asphalte and other walks are certainly to be commended on the score of smoothness and perennial order; at the same time a nice gravelled walk, when well kept, appears to be more in harmony with one's conception of a well-ordered garden, and a little attention and care will keep them constantly in nice condition.

During autumn and winter walks, especially if in confined spaces, become dirty on the surface, and when dirt accumulates in this manner a growth of moss and weeds is inevitable. The question, therefore, arises, What can be done to improve their appearance? The best thing to commence with would be to sweep the walks rather hard with a scrubby birch broom, taking care to carry away the dirt thus brushed from them, and then to break up the surface to the depth of 2 or 3 inches, and turn it over, adding a little fresh and good binding gravel at the same time. If this is beaten nicely down with the back of a spade and made level, and then kept well rolled, a good walk can be obtained that will last pretty well through the summer.

Any weeds in the walks should be carefully pulled out by the hand before the turning is done, and the best way to get rid of weeds on walks is to pull them up by the roots when the paths are moist and yielding. Some apply a dressing of salt to clear walks of weeds, to the amount of about 3 lb. to the square yard, but this is not a good season of the year to dress with salt, as it is apt to make the surface so wet and clammy. Our advice is to treat the walks as we have recommended above, then, if weeds make their appearance during the summer, to apply a good dressing of salt should they make a rapid increase.

HOW TO SOW SEEDS.—Under this heading one or two cautions may be appropriately given. It is injudicious to draw drills and sow seeds in soil that has just been visited with heavy rain, unless the soil be very open and porous; for besides the evil of the seeds being put into a cold, wet, clammy soil, there is the additional evil of having to tread the soil while carrying out the process of sowing, which only aggravates the mischief. It would be much better to wait a day or two, so that the surface could dry, and then it should be lightly forked over to render it fine and loose. Light soils soon dry on the surface; wet, clayey soils are longer in drying, and there is the additional disadvantage that they are apt to become much caked and hardened on the surface. It may be observed that a clay soil is always a cold and late one, and seeds do not germinate so readily in it as in a black or brown friable loam, especially when on a gravel bottom, for they are then always warm and early, and seeds make a quick growth in them.

Where a cold and retentive soil has to be dealt with (and it is not difficult to find such in the London clay), in addition to making the soil as favourable to the well-being of the seeds as possible the small seeds should be sown later than in the case of an early soil; and it is, perhaps, as well to sow them a little thicker. Sometimes we get fine, open, mild weather at the end of January or the beginning of February, and then many are anxious to sow. It is a mistake to sow seeds generally so early, and many failures result from undue haste. Cold, cheerless weather, unfavourable to a rapid germination, is certain to follow, and the seeds lie in the ground and rot; while the seeds sown at the end of March fare much better, and bring better crops. Unpropitious weather, and the devastation wrought by slugs and other agencies, tell much against the crops as the plants make their appearance above ground. Early sowings, unless done under the most favourable circumstances, should be made thicker than later ones, as the plants, when growing a little thickly, nurse and protect each other in the early stages of their growth. It is decidedly easier and much better for the growing crops to thin plants that are too thickly growing together than to have to transplant them to supply vacancies brought about by deficient germination.

Novices in the art of gardening are very apt indeed to sow small seeds much too deep in the soil. Especially does this remark apply to fine flower seeds. It is very important that seeds be covered by the soil, to prevent them from being exposed to the depredations of birds, or from being blown away by the wind. Vegetable seeds are mostly of a sturdier growth than flower seeds, and can therefore better force themselves up through a deep covering of soil. We might venture to lay down the general rule that the size of the seeds might be taken as a guide to the depth at which they should be covered. The very smallest seeds should, therefore, be sown thinly, and only very slightly covered with soil, the more vigorous growing a little deeper.

Natural History.

BIRDS IN SOUTH-WEST YORKSHIRE.—To readers of this journal who are versed in ornithology, a short account of the numerous varieties of the feathered tribe which are indigenous to this part of the country may be interesting. The following notes are entirely taken from the Halifax and Huddersfield districts, comprising large tracts of moorland, together with numerous valleys and woods suitable to the habits of a large number of various kinds of birds. Eighty species at least may be considered as annual breeders—the golden plover, merlin, snipe, nightjar, water-ouzel, Ray's wagtail, and the twite are amongst the rarer birds which nest every season in this locality. Nearly thirty of the birds which build and rear their young here are absent from the British Isles during the winter months, and their departure at once foretells that the annual winter migrants from foreign shores will soon appear, the dates of all arrivals being accurately noted by the various ornithological societies established in our districts. We have nearly fifty species resident throughout the year, in addition to an almost unlimited number of occasional visitors, many being of rare occurrence and including many sea-birds. The wheatear is the first herald of spring, reaching our high moors about the last week in March. April 10 is the date of the average arrival of the swallow in Calder Vale for the last ten years, the cuckoo nearly a fortnight later. In conclusion, it may be stated that owing to the Acts for the protection of wild birds now in force the feathered tribes are rapidly increasing in this part of England. *F. G. S. R.*

TAME WATER-HENS are considered a curiosity, but no farther from London than the Thorney Broad Fishery, West Drayton, on the River Colne, below Uxbridge, fully a hundred of these pretty vivacious birds may be seen close to the angling lodge of Mr. Godfrey, whose son Frank, says the *London and Provincial Illustrated Newspaper*, has induced them by kindness and protection to come in flocks at his call, while some, more tame and daring than the rest, will feed from his hand.

TITMICE.—The blue titmouse (in reply to "F. G. S.," of Feb. 12) is the species that usually eats bread with the sparrows, robins, chaffinches, and

rooks, fed every morning. (Note.—I saw one this morning seize a large lump of bread and fly away with it). But the blue titmouse greatly delights in bits of fat, or the meat on a bone. Occasionally I have the greater titmouse also. In speaking of wagtails I use popular terms—yellow, to describe its general plumage as distinguished from the more common wagtail, black, grey, and white. The thrush (black) or blackbird is "indigenous in Devonshire gardens," but not in Devonshire gardens only. *K. K.*

AËRONAUT SPIDERS.—That ever fresh and delightful book—*White's Natural History of Selborne*—contains the following passages under the date, June 8, 1775. The reverend author had in September, 1741, witnessed a remarkable and widespread fall of gossamer, and, after describing it, proceeds to make the following observations:—"The remark that I shall make on these cobweb-like appearances, called gossamer, is, that, strange and superstitious as the notions about them were formerly, nobody in these days doubts but that they are the production of small spiders, which swarm in the fields in fine weather in autumn, and have a power of shooting out webs from their tails, so as to render themselves buoyant and lighter than air. Every day in fine weather, in autumn chiefly, do I see those spiders shooting out their webs and mounting aloft; they will go off from your finger if you will take them into your hand. Last summer one alighted on my book as I was reading in the parlour; and running to the top of the page, and shooting out a web, took its departure from thence. But what I most wondered at was, that it went off with considerable velocity in a place where no air was stirring, and I am sure that I did not assist it with my breath, so that these little crawlers seem to have, while mounting, some locomotive power without the use of wings, and to move in the air faster than the air itself."

Mr. Blackwall in his *British Spiders* makes the following observations:—

"Although spiders are not provided with wings, and, consequently, are incapable of flying, in the strict sense of the word, yet, by the aid of their silken filaments, numerous species, belonging to various genera, are enabled to accomplish distant journeys through the atmosphere. Those aërial excursions, which appear to result from an instinctive desire to migrate, are undertaken when the weather is bright and serene, particularly in autumn, both by adult and immature individuals, and are effected in the following manner. After climbing to the summit of different objects, they raise themselves still higher by straightening the limbs, then, elevating the abdomen by bringing it from the usual horizontal position into one almost perpendicular, they emit from their spinners a small quantity of viscid fluid which is drawn out into fine lines by the ascending current occasioned by the rarefaction of the air contiguous to the heated ground. Against these lines the current of rarefied air impinges, till the animals, feeling themselves acted upon with sufficient force, quit their hold of the objects on which they stand, and mount aloft."

Mr. Blackwall not long since edited a new edition of his work on British spiders; in this, according to the reviewers, he has not changed his theory or noticed any late discoveries—that was not to be expected, perhaps; but the above explanation cannot be accepted by naturalists as settling the question, because it is not stated to be made on personal observation, and does not meet the case of a flight through the air at a greater rate than its current. The little spiders on their webs do not always float on the air like Thistle down, but at times accelerate their flight, sometimes even to swiftness, proving that they exercise a motive power. Mr. Darwin, Mr. Mott, and other naturalists, besides Gilbert White, have noticed this, but have failed to explain it. Mr. J. E. Waters, writing in Hardwicke's *Science Gossip* (1868, p. 143), suggests, "respecting the velocity with which small spiders sail from one place to another, as stated, at a much greater speed than the current of air, is it not probable that the speed is regulated by the force of ejecting the thread from its body, the recoil propelling the spider in the opposite direction, the wind being its guide?" This highly probable explanation has been confirmed by careful microscopical investigation. Spiders generally draw out their webs from exquisitely fine tubular hairs on the summit of the spinnerets, having first attached them by pressure. The aëronaut spider has tubes like open gun-barrels on the spinners, and a strong muscular bag underneath, by which syringe-like apparatus, of which each spider has four, it can at will project a flocculent web against the air, and so gain a propelling power. The sky-rocket is driven upwards with force and swiftness by the rush of gases against the air, and gas is finer even than spider-web. Mr. Cox and the aëronauts might perhaps not unprofitably study the ways of this little spider, which instinctively solves the problem now, after years of trial, in great degree mastered by them. They would object, of course, to being carried up on an enormous rocket, when they know how rapidly the stick falls; but might not rockets or some similar invention, such as the fire annihilator, be used for occasional purposes to gain additional elevation, to check a too rapid or immediate descent, and so avoid dangerous obstacles? Let experience suggest and judge. *S. S., Sevenoaks.*

Law Notes.

ACTION BY A SALESMAN AGAINST THE LONDON PARCELS DELIVERY COMPANY.—*Alport* v. *The Company.*—In the Clerkenwell County Court on Thursday last this case was heard before Mr. Judge Whitbread, in which the plaintiff, a salesman in Covent Garden Market, and residing at 8, Tenby Place, Caledonian Road, sued the defendants to recover the sum of £1 for the detention of a parcel. The plaintiff said that the parcel was sent to his wife on January 1, and was not delivered to him till the 4th of the present month, after he had made several written and personal applications for it. He was well-known as the occupier of three houses, and his carts were always passing to and fro.—Mr. Popham, the defendants' solicitor, urged that the parcel was directed to Tenber Place, and that the driver of the Company's van was unable to find the plaintiff's correct address, and took the parcel back again to the office.—The learned Judge, looking at the summons, said it was dated from 8, Timber Place.—The plaintiff said it was taken out by a "gentleman" in the Court.—The Judge said no official of the Court could have done it, and cautioned the plaintiff as to employing persons outside the Court in these cases.—Mr. Popham urged that the Company were not liable, as the parcel, which was now in Court, was not correctly addressed.

The learned Judge, in giving judgment in favour of the plaintiff, said he considered that the Company had not used sufficient diligence in endeavouring to find out the plaintiff; and therefore, upon the Company delivering up the parcel, he should allow the plaintiff the expenses and costs he had incurred.

Variorum.

PARIS GREEN AS AN INSECT DESTROYER.—Professor R. C. Kedzie of the Michigan Agricultural College has been carrying on a series of interesting experiments during the summer, and while visiting the college last August I had the pleasure of witnessing and making notes of the Professor's operations. As he has since given these results to the American Public Health Association, and published an abstract of them in the *Detroit Free Press*, I take the liberty of giving them wider circulation. First, as to the use of the mineral for the Doryphora. Does Paris green poison the tuber? Tubers taken from vines that had been repeatedly dosed with the ordinary mixture—as much Paris green, in fact, as they would bear—gave no trace of arsenic. Regarding the idea, which has been suggested, that the use of the poison rendered the tubers watery and waxy, the conclusion is, that such condition is brought about by the stunted growth and destruction of the vines caused by the insect, which thereby prevents maturity of the tuber. Does Paris green poison the land? This is meant, of course, in the sense of rendering the land unfit for the growth of crops; and Professor Kedzie justly considers not only its immediate, but its remote effect. Theoretically, one would naturally infer that Paris green is converted into an insoluble precipitate or salt with the hydrated oxide of iron which exists in most soils; but not resting the matter on theoretical or abstract reasoning, Professor Kedzie made careful tests and experiments. He passed a solution of arsenious trioxide through common garden soil, and filtered Paris green in a solution of hydrochloric acid through dry earth. In neither case could any poison be detected in the filtrate by the severest tests. Soil taken from a field of Wheat that had been sown with Paris green at the rate of 5 lb. to the acre showed no trace of the poison when submitted to any or all of the tests which the soil would get by natural solvents in the field, but distinctly showed the arsenic when treated with dilute sulphuric acid. The Paris green was sown on the ground early in spring, and was thick enough to give a very distinct green tint to the surface. The grain and the straw were submitted to careful chemical examination, as were also Cabbages grown in soil that had the year before been in Potatos, and received a heavy sprinkling of green. No trace of the poison was found in either, and it was observed that the chipmunks ate large quantities of the grain without injury. The more practical conclusions from Professor Kedzie's experiments may be thus summed up:—1. Paris green that has been four months in the soil no longer remains as such, but has passed into some less soluble state, and is unaffected by the ordinary solvents of the soil. 2. When applied in small quantities, such as alone are necessary in destroying injurious insects, it does not affect the health of the plant. 3. The power of the soil to hold arsenious acids and arsenites in insoluble form will prevent water from becoming poisoned, unless the green is used in excess of any requirement as an insecticide. *Professor Riley, in the "New York Tribune."*

MUSA ENSETE.—The first time we came on this plant was in the forest, while on the march, near a Waganda village. I remained so long wondering at its form and size that my companions got out of sight. The trunk was as if one huge drum was placed upon another. From the top handsome broad leaves radiated in every direction, some hanging down to the ground. It was wild, and not in fruit or flower in May; but I afterwards heard that its seeds are called "m'seegwah" (Kis.), and "m'tembeh" (Kin.). The Waganda wear them as necklaces and anklets. They are black, irregular shaped, and glossy. This plant was the only monster specimen met with, and it may be a distinct species, for all the fine specimens of Musa Ensete seen in Algiers, in the Jardin d'Essai, and in Europe, differ in form from this monster. They have long, tall, but stout stems in proportion to their leaves. At 4° N. lat. we found the regular Ensete amongst the rocks. The leaves were more coarsely ribbed than the ordinary Plantain, and the midrib was brick-red. They were young plants, a foot high, and goats seemed to have eaten their leaves. *J. A. G., in Transactions of the Linnean Society*, 1875: "*Botany of the Speke and Grant Expedition.*"

HOP GROWING IN TASMANIA.—Near Norfolk, and on the banks of the Derwent and Lachlan, are large alluvial, low-lying tracts, irrigated by dams in the rivers. The water of the Derwent is lifted by steam-pumps in order to gain the necessary fall. Here Hop growing has been inaugurated on a large scale by cultivators occupying from 6 to 90 acres each, the whole Hop acreage amounting to 488 acres. On the Huron and at other points the acreage has been increased, making that of the whole island about 664 acres. Last year 627 acres in bearing averaged about 1300 lb., or 11¾ cwt., per acre. During the current year it is estimated that the productive acreage will be smaller, and the average yield will be reduced to 11 cwt. per acre, but from the decline of the British crops it is thought that the Tasmanian farmers will receive a larger sum for their product than last year. Prices ranged from 1*s.* 7*d.* to 2*s.* 6*d.* per pound. The primary markets of this trade—Melbourne and Sydney—are liable to be overstocked, not having any great capacity, and hence it becomes the producers to be careful in sending their crops to market. Irrigation is generally practised, there being but few soils that can grow Hops without it. *Report of the American Department of Agriculture.*

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

FOR THE WEEK ENDING WEDNESDAY, FEB. 23, 1876.

Month and Day.	Barometer. Mean Reading reduced to 32° Fahr.	Barometer. Departure from Average of 16 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Feb.	In.	In.	°	°	°	°	°	°			In.
17	29.51	−0.30	55.9	45.1	10.8	50.3	+ 11.6	47.6	90	WSW: W.	0.15
18	29.21	−0.61	60.1	45.9	14.2	50.6	+ 11.8	44.9	81	S.W.; S.S.W.	0.10
19	29.26	−0.55	56.1	42.9	13.2	48.1	+ 9.3	40.3	75	WSW: S.W.	0.03
20	29.55	−0.26	45.0	38.5	6.5	41.2	+ 2.3	37.6	88	N.N.E.	0.15
21	29.62	−0.19	54.7	39.9	14.8	48.1	+ 9.1	46.4	94	WSW: S.W.	0.25
22	29.64	−0.17	57.2	45.2	12.0	50.0	+ 10.9	45.3	84	W.; S.W.	0.00
23	29.59	−0.22	52.3	42.1	10.2	45.8	+ 6.6	41.1	84	W.; WNW	0.00
Mean	29.48	−0.33	54.5	42.8	11.7	47.7	+ 8.8	43.3	85	S.W.	sum 0.68

Feb. 17.—A dull cloudy day. Frequent showers.
— 18.—A partially fine day; dull at intervals. Smart showers from 1 to 3 P.M.
— 19.—A fine day, partially cloudy. A little rain at night.
— 20. A dull day. Frequent rain.
— 21.—Dull and occasional rain throughout. Strong wind.
— 22.—Fine day, but very cloudy at times. Smart shower of rain at 4.15 P.M.
— 23.—A dull cloudy day. Fine at times. Slight showers of rain in afternoon.

—— During the week ending Saturday, February 19, in the neighbourhood of London, the reading of the barometer at the level of the sea decreased from 29.86 inches at the beginning of the week to 29.54 inches by the evening of the 13th, increased to 29.67 inches by the afternoon of the 14th, decreased to 29.48 inches by the afternoon of the 15th, increased to 29.75 inches by the evening of the 16th, decreased to 29.24 inches by the evening of the 18th, and increased to 29.50 inches by the end of the week. The mean reading for the week was 29.58 inches, being 0.31 inch below that of the preceding week, and 0.41 inch below the average.

The highest temperatures of the air observed by day varied from 60° on the 18th to 37° on the 13th; the mean for the week was 52°. The lowest temperatures of the air observed by night ranged from 25½° on the 13th, to 46° on the 18th; the mean value for the week was 38½°. The mean daily range of temperature in the week was 13½° the greatest range in the day was 20½°, on the 14th; and the least 10¾°, on the 17th. The mean daily temperatures of the air and the departures from their respective averages were as follows:—13th, 30°.5 — 8°.4; 14th, 38°.4 — 0°.4; 15th, 46°.4 + 7°.7; 16th, 46°.9 + 8.2; 17th, 50°.3 + 11°.6; 18th, 50°.6 + 18°.8; 19th, 48°.1, + 9°.3. The mean temperature of the air for the week was 44°.4, being 5.7 above the average of sixty years' observations.

The highest reading of a thermometer with blackened bulb in vacuo, placed in sun's rays, was 103¾° on the 19th; on the 17th the reading did not rise above 60°; the mean for the week was 80¼°. The lowest reading of a thermometer on grass, with its bulb exposed to the sky, was 17° on the 13th; on the 17th 43½° was the lowest reading; the mean for the week was 36°.

The direction of the winter was S.W., and its strength brisk. The weather during the week was generally fine, and very mild.

Snow fell heavily during the evening of the 13th inst.

Rain fell on every day in the week, the amount collected was 0.73 inch.

In England the highest temperature of the air observed by day was 60° at about London; at Brighton the highest temperature in the week was 50¼°; the mean value from all stations was 55½°. The lowest temperature of the air observed by night was 21½° at Wolverhampton; at Plymouth the lowest temperature in the week was 38½°, and at Truro, 33°; the general mean from all stations was 27°. The range of temperature in the week was the greatest at about London and Norwich, 35°; and the least at Plymouth, 20°; the mean range of temperature in the week from all stations was 28¼°.

The mean of the seven high day temperatures was the highest at Truro, 53°, and the smallest at Nottingham and Newcastle-on-Tyne, both 44½°; the mean from all stations was 48½°. The mean of the seven low night temperatures was the smallest at Sunderland, 35½°, and the largest at Truro, 42¾°; the mean value from all stations was 37¾°. The mean daily range of temperature of the air was the greatest at about London, 13½°, and the least at Plymouth, 7½°; the mean daily range from all stations was 10¾°. The mean temperature of the air for the week was 42¾, being 4½° higher than the value for the corresponding week in 1875. The highest was at Truro, 47½°, and the lowest at Nottingham, 39¾°.

Rain fell on five or six days in the week at most stations; the fall at Bristol was 2½ inches, at Truro it was 2 inches, and at Plymouth 1¾ inch, but at Sunderland half an inch only fell; the average amount over the country was 1¼ inch nearly.

The weather during the week was very mild and somewhat fine, but with frequent showers of rain. Heavy snow fell on the evening of Sunday the 13th inst., generally all over the country, and was 5 inches deep in some places.

In Scotland the highest temperatures of the air ranged from 54° at Edinburgh to 45½° at Glasgow. The mean from all stations was 48¾°. The lowest temperatures of the air varied from 21° at Edinburgh to 26½° at Glasgow and Greenock. The mean value from all stations was 24¾°. The mean range of temperature in the week was 24°. The mean temperature of the air for the week was 37¾°, being 5° lower than that of England, and 2¼° lower than the value for the corresponding week in 1875. The highest in the week was 38¾°, at Leith, and lowest 36°, at Greenock.

The amounts of rain measured at the several stations were generally large, except at Leith. The falls, however, ranged from 2½ inches at Paisley, 2¼ inches at Greenock, to half an inch at Leith. The average fall over the country was 1½ inch.

At Dublin the highest temperature of the air was 59¼°, the lowest 26°, the range 33¼°, the mean 44°, and the fall of rain 0.96 inch.

JAMES GLAISHER.

Enquiries.

He that questioneth much shall learn much.—BACON.

101. LILY OF THE VALLEY.—How do the Continental growers grow the clumps of Lily of the Valley that are imported here every autumn? Some of them seem to have been grown in sand. *Old Subscriber.*

102. PILOCEREUS SENILIS.—Can any of your readers refer me to an authentic record of this plant having flowered in this country? *W. B.*

Answers to Correspondents.

*** We must beg the indulgence of numerous correspondents, whose communications are necessarily delayed by the great accumulation of correspondence.

ARUM LILY: *Old Subscriber.* Richardia æthiopica.

BANANA AND BREAD FRUIT: *Enquirer.* The Banana is Musa sapientum, and the Breadfruit Artocarpus incisa: two totally distinct things.

FUMIGATION: *C. D. S.* We are unable to draw any other conclusion from the information before us. There is no smell of sulphur after burning in the sample of the material sent; but if you are sure the latter has been properly handled, and suspect it to contain something injurious, you had better try its effects again on some plants of little value, using every care to make the experiment conclusive.

INSECTS: *W. F.* The caterpillar you speak of is well known. A fungus grows out of the body of the insect. At p. 314 of our first volume for 1875 you will find a figure and description of this parasite.

LILY OF THE VALLEY FORCING: *Old Subscriber.* No; the game would not be worth the candle.

NAMES OF FRUIT: *A. E. Graves.* Your Apple is the Winter Greening.—*R. Muckellar.* Your Pear is Josephine de Malines.—*A Subscriber.* Next week.

NAMES OF PLANTS: *A. W.* Alchemilla arvensis.—*W. Temple.* We cannot undertake to name florists' flowers.—*B. R. Davis.* A fine form of Adiantum Capillus-Veneris incisum.—*E. Straker.* 1, Teucrium scordium (rare); 2, Hypericum elodes; 3, Euphorbia Paralias; 4, Eurodium cicutarium; 5, Bartsia odontites; 6, Chenopodium Bonus Henricus.—*P. B.* 1, We do not recognise; please send a leaf and pseudobulb if it can be spared; also state native country and habit, and we will try again. 2, Phaius grandiflorus; 3, Dendrobium hellyosmum; Goodyera discolor.—*M. A. G.* Of the wretched scraps you send we can only identify (4) Acacia armata, var. hybrida, and (5) Acacia armata. Send better specimens of the others.

PRIMULAS, DOUBLE WHITE: *An Amateur.* Put the old plants, as soon as they have done flowering, in a temperature of 55° to 60° for three weeks or a month. Take the cuttings off with a piece of the old wood, and insert them singly in 60 pots. Soil: loam and leaf-mould equal parts, quarter sand. Drop a pinch of sand into the hole before inserting the cutting, and plunge them at the bottom of a Cucumber frame, and do no not give any water as long as the young leaves in the centre look fresh.

VARIOUS: *J. M.* The "white Cape flowers," everlastings, are probably those of a species of Gnaphalium, though they may belong to the genus Helichrysum, we cannot say which without specimens. Japan Flax we know nothing about; if you are thinking of New Zealand Flax, it is Phormium tenax. Cuba bast is the inner bark of Paritium elatum. Manilla Hemp is obtained from Musa textilis.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "Editors," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. *Letters relating to Advertisements, or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

CATALOGUES RECEIVED.—Messrs. Haage & Schmidt (Kunst-und-Handels-gartner, Erfurt), Priced Illustrated Catalogue of Plants; also Catalogue of Seeds, &c.—Messrs. Toole & Co. (22, D'Olier Street, Dublin), Select Spring Catalogue and Amateur's Guide.—Mr. Francis Findlay (60, King Street, Kilmarnock), Catalogue of Seeds, Plants, Florists' Flowers, &c.—Mr. E. B. Spence (17, Tubwell Row, Darlington), Catalogue of Garden, Agricultural, and Flower Seeds, &c.—Messrs. Felton & Sons (56, Harborne Road, Edgbaston, Birmingham), Seed Catalogue for 1876.—Mr. R. H. Vertegans (131 and 137, Market Hall, Birmingham), Catalogue of Seeds, &c.—Mr. David G. McKay (Market Hill, Sudbury, Suffolk), Spring Catalogue of Flower, Kitchen Garden, and Agricultural Seeds.—Messrs. Stuart & Mein (Wood Market, Kelso), General Catalogue of Vegetable and Flower Seeds; also Catalogue of Select Gladioli, &c.—Messrs. S. Dixon & Co. (48 A, Moorgate Street, London), Select List of Vegetable and Flower Seeds, Potatos, &c.—Messrs. E. G. Henderson & Son (Wellington Road, St. John's Wood, London), Illustrated Descriptive Catalogue of Flower, Vegetable, and Agricultural Seeds, &c.—Messrs. Wood & Ingram (Huntingdon), Select List of Garden and Agricultural Seeds, &c.—Messrs. Clark Brothers & Co. (65, Scotch Street, Carlisle), General Seed Catalogue for 1876.—Mr. R. Buist (922 and 924, Market Street, Philadelphia, U.S.A.), Almanac and Garden Manual, Seed Catalogue, &c., for 1876.—Messrs. Laird & Sinclair (73, Nethergate, Dundee), Catalogue of Vegetable and Flower Seeds, Potatos, Garden Implements, &c.; also List of French Hybrid Gladioli.—Messrs. E. Y. Teas & Co. (255, Pearl Street, Richmond, Ind., U.S.A.), Catalogue of Roses, Greenhouse and Bedding Plants, Vines, Shrubs, &c.—Mr. S. Brown (Weston-super-Mare, Somerset), Illustrated Seed Catalogue, including Bulbs, &c.—Messrs. Fergus Farrell & Son (119 and 120, Capel Street, Dublin), Descriptive Catalogue of Seeds, &c.—Messrs. Vilmorin, Andrieux & Co. (4, Quai de la Megisserie, Paris), Catalogue of Seeds, Plants, &c.—Messrs. Kelway & Son's (Royal Somersetshire Seed Establishment, Langport), Spring Catalogue and Amateur's Guide.—Messrs. Howeroft & Watkins, 14, Tavistock Row, Covent Garden, London, W.C.), List of Garden, Agricultural, Flower, and Tree Seeds, also Descriptive Catalogue of Flowering Bulbs, &c.—Messrs. Harrison & Sons (Royal Midland Seed Warehouse, Leicester), Catalogue of Choice Seeds for the Garden and Farm.—Mr. H. Cannell (Swanley Junction, Kent), Illustrated Floral Guide, and General Catalogue for 1876.—Messrs. Briggs & Brothers (Rochester, New York, and Chicago, Ill., U.S.A.), Quarterly Illustrated Floral Work, and General Catalogue for 1876.—Mr. W. Ford (Pamber, Basingstoke, Hants), Descriptive Catalogue of New English and American Seed Potatos.—Messrs. C. Sharpe & Co. (Sleaford), Descriptive Catalogue of Farm Seeds.

COMMUNICATIONS RECEIVED.—Amateur, Windsor—Mrs. R. R. M.—R. Dalrymple.—M. A. H. R.—A Voice from an English Belfry.—J. O.—J. K.—L. T.—Aberdeenshire.—E. Lees.—W. Swan.—J. T.

DIED.—On the 14th inst., aged 53, Mr. THOMAS DOWELL, of the York Nursery, Stamford Hill.

*** IMPORTANT NOTICE.—*The* AGRICULTURAL GAZETTE *is now* PUBLISHED *on* MONDAYS, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, February 24.

A better tone now pervades the market for all kinds of goods, and prices are consequently on the advance. Good samples of hothouse Grapes are getting somewhat short, but Pines are still well represented, some very handsome fruit from St. Michael having been landed during the past week, ranging from 4 lb. to 9 lb. in weight. Kent Cobs maintain their price. *Jas. Webber, Wholesale Apple Market.*

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	4 0	12 0	Mignonette, 12 bun.	6 0	9 0
Azaleas, 12 sprays ..	0 6	2 0	Narcissus, per dozen	1 6	4 0
Camellias	1 6	9 0	Pelargoniums, 12 spr.	2 0	4 0
Carnations, 12 blooms	2 0	4 0	— Zonal do. ..	1 0	3 0
Cineraria, per bunch	1 0	2 0	Primula, dbl., p. bun.	1 0	1 6
Cyclamen, 12 blooms	0 3	0 6	Rhododend., 12 hds.	4 0	12 0
Epiphyllum, p. doz.	1 0	3 0	Roman Hyacinths,		
Eucharis, per doz. ..	6 0	13 0	12 sprays	1 0	3 0
Euphorbia, 12 spr. ..	4 0	9 0	Roses, indoor, p doz.	3 0	12 0
Gardenia, per doz. ..	12 0	18 0	Spiræa, 12 sprays ..	2 0	4 0
Heliotropes, 12 spr.	0 6	1 0	Stephanotis, 12 sprays	9 0	18 0
Lily of Valley, 12 spr.	1 6	6 0	Violets, 12 bunches..	1 6	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per doz. ..	30 0	60 0	Heaths, in var., doz.	12 0	30 0
Begonias, per doz. ..	6 0	12 0	Hyacinths, per doz.	9 0	18 0
Bouvardias, do. ..	12 0	18 0	Lily of Valley, doz.	18 0	36 0
Cineraria, per doz. ..	12 0	18 0	Mignonette, do. ..	6 0	9 0
Cyclamen, do. ..	12 0	24 0	Myrtles, do.	3 0	9 0
Cyperus, do.	6 0	12 0	Pelargoniums, scarlet,		
Dracæna terminalis	30 0	60 0	per doz.	6 0	9 0
— viridis, per doz.	18 0	24 0	Primula sinensis, do.	6 0	12 0
Euphorbia jacquini-			Solanums, do. ..	6 0	24 0
folia, per doz. ..	9 0	18 0	Tulips, do.	8 0	12 0
Ficus elastica ..	2 6	15 0	Veronica, do. ..	4 0	12 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz	6 0	..	Lettuces, per score..	2 0	..
— Jerusalem, p. lb.	0 3	..	Mint, green, bunch	1 6	..
Asparagus (English),			Mushrooms, per pott	1 0	2 0
per bundle ..	8 0	12 0	Onions, young, bun.	0 4	0 6
Beans, French, p. 100	3 6	..	Parsley, per bunch..	0 4	..
Beet, per doz. ..	1 0	2 0	Peas, green, per lb..	1 6	..
Brussels Sprouts, lb.	0 4	..	Potatos (new), baskt.	1 0	..
Cabbages, per doz. ..	1 0	2 0	— new Jersey, p. lb.	1 6	2 0
Carrots, per bunch..	0 6	..	— Sweet, per lb.	0 6	..
Cauliflowers, p. doz.	2 0	4 0	Radishes, per bunch.	0 2	0 4
Celery, per bundle..	1 6	2 0	— Spanish, doz. ..	1 0	..
Cucumbers, each ..	2 0	3 6	— French	0 6	..
Endive, per doz. ..	1 0	2 0	Rhubarb, per bundle	0 6	1 0
— Batavian, p. doz.	2 0	3 0	Salsafy, per bundle..	0 9	..
Herbs, per bunch ..	0 2	0 4	Seakale, per punnet	1 0	2 0
Horse Radish, p. bun.	3 0	5 0	Shallots, per lb. ..	0 3	..
Leeks, per bunch ..	0 2	0 4	Turnips, per bundle	0 4	..

Potatos—Rocks, 105s. to 110s.; Regents, 120s. to 170s.; Myatt's, 100s. per ton.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1 0	2 6	Melons, each ..	0 0	0 0
Cobs and Filbts., lb.	0 6	0 0	Oranges, per 100 ..	6 0	12 0
Grapes, per lb. ..	3 0	8 0	Pears, per doz. ..	2 0	8 0
Lemons, per 100 ..	6 0	19 0	Pine-apples, p. lb. ..	1 6	4

SEEDS.

LONDON: *Feb.* 23.—With the near approach of spring there is a daily increasing demand for agricultural seeds, the market generally being characterised by extreme firmness, whilst several descriptions realise a considerable advance. Of red Clover the supply both of home grown and imported continues restricted, and currencies in consequence tend decidedly upwards. A good quantity of seed is now being sent into the provinces, the country buyers having apparently quite abandoned the hope that by deferring their purchases they would be able to buy on better terms later on. For white Clover there is a brisk inquiry, and all qualities must be noted £3 to £4 per ton dearer. Alsike also experiences a lively demand, and, with stocks almost exhausted, is held for a strong advance. In Trefoil the high level of values of the present remarkable season is firmly maintained. For foreign Italian 3*s.* to 4*s.* per bale more money is demanded, the quantity remaining in France available for export being described as very limited. Perennial grasses, although quiet, are steady. Lucerne and Sanfoin, being both scarce and much wanted, show a marked improvement in price. As regards spring Tares, the upward movement of the past few weeks exhibits no abatement, to-day's quotations being fully 2*s.* or 3*s.* per quarter above those of last Wednesday. Scotch Gores are 1*s.* per bushel dearer. Hemp and Canary seed continue neglected. For Mustard and Rape seed holders are obtaining increased rates. Feeding Linseed is dull. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, E.C.*

CORN.

At Mark Lane on Monday trade was dull, and prices had a downward tendency. Fine dry English Wheat was as dear as on Monday last, so also were the best descriptions of foreign; but damp and inferior produce was scarcely saleable, even on much lower terms. For Barley offers of less money were invariably accepted. Malt was nominally the same in value. Oats were from 3*d.* to 6*d.* per quarter cheaper. In Maize sales were not easily closed. Beans and Peas were offered at somewhat lower prices, and flour was inactive and flat.—Thursday's market was very quiet. Fine dry English Wheat was scarce, and rather firmly held, as also were the better qualities of foreign Wheat; but inferior parcels were flat. Barley had a downward tendency, and malt was cheaper when offered. Oats were dull, and slightly easier. Maize, Beans, Peas, and flour dropped in price, but business was much too small to establish any decided reduction. Average prices of corn during the week ending Feb. 19:—Wheat, 42*s.* 8*d.*; Barley, 32*s.* 10*d.*; Oats, 24*s.* 5*d.* For the corresponding week last year:—Wheat, 41*s.* 6*d.*; Barley, 43*s.* 3*d.*; Oats, 29*s.* 9*d.*

CATTLE.

At Copenhagen Fields on Monday trade in beasts was very dull, and only for choicest qualities was any advance of price obtained. In sheep trade was by no means brisk, and it was difficult to effect a clearance, with scarcely a quotable advance. Calves were scarce and dear. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.* and 5*s.* 6*d.* to 6*s.*; calves, 5*s.* 6*d.* to 7*s.*; sheep, 5*s.* 6*d.* to 6*s.*, and 6*s.* 6*d.* to 7*s.* 2*d.*—The trade in beasts on Thursday was not brisk, but a pretty good clearance was effected at nearly Monday's quotations. For sheep there was a demand, at fully late rates. Choice calves were again dear, but the high price was not easily obtained. Trade was dull for milch cows.

HAY.

At Whitechapel on Tuesday there was a full supply, trade was fairly active, and prices were maintained. Prime Clover, 100*s.* to 147*s.*; interior ditto, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 132*s.*; inferior ditto, 55*s.* to 75*s.*; and straw, 35*s.* to 44*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 130*s.* to 140*s.*; inferior, 84*s.* to 115*s.*; superior Clover, 140*s.* to 150*s.*; inferior, 105*s.* to 120*s.*; and straw, 44*s.* to 50*s.* per load.

POTATOS.

At the Borough and Spitalfields markets the supplies offering were moderately large and in excess of the demand. Sound Potatos were worth as much money, but inferior sorts were weak and irregular. Kent Regents, 110*s.* to 130*s.* per ton; Essex ditto, 100*s.* to 125*s.*; Scotch ditto, 100*s.* to 150*s.*; rocks, 80*s.* to 95*s.*; kidneys, 120*s.* to 140*s.*; Victorias, 115*s.* to 140*s.*; flukes, 130*s.* to 165*s.*—Last week's imports of foreign Potatos into London contained 856 tons from Rouen, 80 tons from Paris, 66 tons from Barfleur, 165 tons from L'Orient, 200 tons from St. Valery, 321 sacks from St. Nazaire, 852 tons 278 sacks from Dunkirk, 270 sacks from Boulogne, 187 bags from Harlingen, 586 bags from Hamburg, 1481 bags from Antwerp, and 248 bags from Rotterdam.

COALS.

The market on Monday was steady for best house coals, but "seconds" declined 6*d.* per ton. Business was steady for house coals on Thursday, at previous rates. Quotations:—East Wylam, 17*s.*; Holywell Main, 17*s.*; Wails Ends—Thrislington, 18*s.*; Elliot, 16*s.* 3*d.*; Hetton, 21*s.* 6*d.*; Hetton Lyons, 16*s.* 3*d.*; Hawthorn, 16*s.* 3*d.*; Lambton, 21*s.* 6*d.*; Original Hartlepool, 21*s.* 6*d.*; South Hetton, 21*s.* 6*d.*; Caradoc, 21*s.*; Hartlepool, 21*s.*; Kelloe, 16*s.* 6*d.*; East Hartlepool, 21*s.* 3*d.*; South Kelloe, 13*s.*; Tees, 21*s.* 3*d.*

Grape Vines.

THOMAS METHVEN AND SONS have at present a large and very fine Stock of GRAPE VINES, thoroughly ripened, which they beg to offer at the following prices:—First size, 7*s.* 6*d.*; second size, 5*s.* each.

T. M. & Sons had the honour of supplying to the Gardens at Glamis Castle the Vines which have succeeded so admirably under the management of Mr. Johnston; and their present Stock is raised from eyes taken from these famous Vines.

Leith Walk Nurseries, Edinburgh.

Bulbous or Tuberous Begonia Seed.

L. PAILLET, NURSERYMAN, Chatenay, near Paris, offers for the present season, from his own growth, and cropped on the very best varieties known, seeds of the said BEGONIAS at the following rates:—Per packet containing 1 gramme, 6*s.*; per packet containing 5 grammes, £1 5*s.*

Seeds of CLEMATIS, cropped on the best varieties known, such as Helena, Sophia, Jackmanni, lanuginosa, Lady Bovell, magnifica, and others:—Per packet containing 30 grammes, 8*s.*; per packet containing 100 grammes, £1 4*s.* (One gramme represents 1-28th of an ounce.) CLEMATIS from Seed, fine mixed varieties of all kinds, 3 to 4 years old, £2 per 100.

N.B.—Orders may be addressed directly to L. PAILLET, or his Agents, Messrs. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C., where CATALOGUE and List may be had on application.

Genuine Seeds.

JOHN AND CHARLES LEE, Seedsmen to the Queen, invite attention to their new and extensive CATALOGUE of SEEDS for 1876. This Catalogue has been prepared with their usual care, and contains every novelty, whether home-grown or foreign, with the most minute and useful descriptions of both Vegetable and Flower Seeds. The prices of every article are the very lowest, considering the first-rate quality of the various stocks offered. The long standing of the house of LEE (125 years) is a sure guarantee of the excellence of their seeds and the soundness of their trading. Catalogues may be had post-free on application.

Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

To Purchasers of Large Quantities, Market Gardeners, and Others.

SUTTON & SONS,

Can supply the following PEAS in quantity at very moderate Prices:—

Sutton's Improved Early Champion Pea,

The best and most productive Market Gardener's Pea in cultivation.

Ten days earlier than Daniel O'Rourke.

SANGSTERS' No. 1,	MACLEAN'S LITTLE GEM
SUTTON'S LONG-PODDED TOM THUMB,	BEST OF ALL,
	YORKSHIRE HERO,
SUTTON'S IMPROVED PRINCESS ROYAL,	BRITISH QUEEN,
	VICTORIA MARROW.

APPLY, STATING QUANTITY REQUIRED,

SUTTON & SONS,

THE QUEEN'S SEEDSMEN, READING.

Surplus Stock.

H. LANE AND SON can offer the following at greatly reduced prices, all fine, well-grown trees:—

CUPRESSUS LAWSONIANA, 3 to 15 feet.
THUJOPSIS BOREALIS, 3 to 15 feet.
THUJA LOBBII, 3 to 15 feet.
,, GIGANTEA, 4 to 9 feet.
WELLINGTONIA GIGANTEA, 5 to 10 feet.
PICEA GRANDIS, 8 to 15 feet
,, NORDMANNIANA, 2 to 12 feet.
,, NOBILIS, 2 to 8 feet.
YEWS, Irish, 4 to 8 feet.
LAURELS, Portugal, 2 to 5 feet.
CEDRUS DEODARA, 3 to 5 feet.
ARBOR-VITÆ, Siberian, 4 to 6 feet.
HOLLIES, Variegated, 2 to 7 feet.

RHODODENDRONS, named, Seedling Hybrids and Ponticums, blooming plants; Standard WALNUTS, PRUNE DAMSONS, CHERRIES, and THORNS; Dwarf-trained APPLES, PEARS, and PLUMS; Horizontal-trained APPLES and PEARS; Pyramidal APPLES, PEARS, PLUMS, and CHERRIES.

CATALOGUE and price on application.

The Nurseries, Great Berkhamsted, Herts.

NEW LILIES.

LILIUM KRAMERI.—This hitherto scarce and charmingly beautiful Japanese species can now be supplied at 5*s.* and 7*s.* 6*d.* each.
,, BLOOMERIANUM OCELLATUM, 5*s.* and 7*s.* 6*d.* ea.
,, TIGRINUM JUCUNDUM, 5*s.* and 7*s.* 6*d.* each.
,, NEILGHERRENSE, 7*s.* 6*d.* each.
,, CALIFORNICUM, 3*s.* 6*d.* and 5*s.* each.
,, ELEGANS SPLENDIDA, 3*s.* 6*d.* and 5*s.* each.
,, HUMBOLDTII, 3*s.* 6*d.* and 5*s.* each.
,, PARVUM, 3*s.* 6*d.* and 5*s.* each.
,, PURPUREUM, 5*s.* and 7*s.* 6*d.* each.
,, TIGRINUM FLORE-PLENO, 3*s.* 6*d.* and 5*s.* each.

For descriptions of the above and other choice Lilies, *vide* Mr. WILLIAM BULL'S CATALOGUE.

WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Special Offer.

G. FARNSWORTH has to offer large quantities of the following, at per 1000; also other NURSERY STOCK, at low prices, which may be had on application at the Nurseries, Matlock:—ASH, Mountain, 3 to 5 feet, 17*s.* 6*d.* ALDER, 3 to 5 feet, 30*s.* CHESTNUT, Horse, 6 to 8 feet, 80*s.* FIR, Austrian, 20 to 30 inches, 90*s.* HOLLY, Common, 12 to 18 inches, 180*s.* LARCH, 12 to 20 inches, 15*s.*; 1½ to 2½ feet, 25*s.* LIME LAYERS, 2-yr., Red-twigged, 2 to 4 feet, 80*s.* PRIVET, 1½ to 2½ feet, 12*s.*; 2 to 3½ feet, 15*s.*; 3 to 4½ feet, 17*s.* 6*d.* RHODODENDRON, Hybrid and Pontica mixed, 3-yr. seedling, fine, 5*s.*; extra, transplanted, 6 to 10 inches, 6*s.*; 8 to 12 inches, 8*s.*; 12 to 18 inches, bushy, 14*s.*

Trees and Shrubs on Sale.—Special Offer.

BENJAMIN WHITHAM,

The Nurseries, Reddish, near Stockport,

Has a large quantity of the following, fine healthy plants—must be cleared, the land being required for other purposes:—

FRUIT TREES.

APPLES, Pyramids, 3-yr., heads, 3 to 4 feet, 6*s.* per dozen, 40*s.* per 100.
,, half standards, stems 2 to 4 feet, 4 to 5 feet high, 7*s.* per dozen, 50*s.* per 100; 5 to 6 ft., 8*s.* per doz., 60*s.* per 100.
CURRANTS, Black, fine, 10*s.* per 100.
,, Red, fine, 10*s.* per 100.
,, White, extra fine, 16*s.* per 100.
STRAWBERRIES, Yates' Seedling, very fine sort, abundant bearers, extra, 3*s.* per 100
GOOSEBERRIES, large show and dessert sorts, extra strong, 15*s.* to 20*s.* per 100.

FOREST TREES.

AREA THEOPHRASTA (Service tree), grafted sorts, 3 to 4 feet, 5*s.* per dozen, 30*s.* per 100; 4 to 5 feet, 6*s.* per dozen, 40*s.* per 100; 5 to 6 feet, 8*s.* per dozen, 60*s.* per 100; 6 to 8 feet, 9*s.* per dozen, 70*s.* per 100.
BEECH, all fine, stout, extra transplanted, 1½ to 2 feet, 3*s.* 6*d.* per 100, 25*s.* per 1000; 2 to 3 feet, 4*s.* per 100, 33*s.* per 1000; 3 to 4 feet, 6*s.* per 100, 40*s.* per 1000; 4 to 5 feet, 10*s.* per 100, 65*s.* per 1000; 5 to 6 feet, 20*s.* per 100; 6 to 8 feet, 30*s.* per 100; 8 to 10 feet, 50*s.* per 100.
CHESTNUT, Horse, 2 to 3 feet, 5*s.* per 100; 3 to 4 feet, 6*s.* per 100; 4 to 5 feet, 7*s.* per 100; 5 to 6 feet, 10*s.* per 100; 6 to 8 feet, 20*s.* per 100
,, ,, fine single specimens for avenues, very stout, straight stems, 12*s.* per dozen.
,, ,, Scarlet, 5 to 6 feet, 10*s.* per dozen; 6 to 8 feet, 12*s.* per dozen.
LIME, fine stock, 2 to 3 feet, 7*s* per 100; 3 to 4 feet, 10*s.* per 100; 4 to 5 feet, 15*s.* per 100; 5 to 6 feet, 20*s* per 100; 6 to 8 feet, 30*s* per 100; 8 to 10 feet, 70*s.* per 100.
PINUS AUSTRIACA, 1½ to 2 feet, 7*s* per 100; 2 to 3 feet, 12*s.* per 100; 3 to 4 feet, 25*s* per 100.
POPLAR, Lombardy, 2 to 3 feet, 4*s.* per 100, 35*s* per 1000; 3 to 4 feet, 5*s.* per 100, 40*s.* per 1000; 4 to 6 feet, 8*s.* per 100, 75*s.* per 1000; 6 to 8 feet, 15*s.* per 100; 8 to 10 feet, 25*s.* per 100
,, Ontario, 4 to 6 feet, 8*s.* per 100; 6 to 8 feet, 12*s.* per 100; 8 to 10 feet, 25*s.* per 100.
,, Balsam, 4 to 6 feet, 10*s.* per 100; 6 to 8 feet, 20*s.* per 100.
PRIVET, Evergreen, 1½ to 2 feet, 15*s.* per 1000; 2 to 3 feet, 20*s.* per 1000; 3 to 4 feet, 25*s.* per 1000; 4 to 5 feet, 30*s* per 1000.
SYCAMORE, 2 to 3 feet, 2*s.* 6*d.* per 100, 20*s.* per 1000; 3 to 4 feet, 3*s.* per 100, 25*s.* per 1000; 4 to 5 feet, 4*s.* per 100, 35*s.* per 1000; 5 to 6 feet, 6*s.* per 100, 50*s.* per 1000.
,, fine, 6 to 8 feet, 18*s.* per 120; extra strong, 8 to 10 feet, 45*s* per 100.

EVERGREENS, ORNAMENTAL TREES AND SHRUBS.

AZALEA PONTICA, bedded, 4 to 6 inches, 6*s.* per 100, 50*s.* per 1000.
,, ,, bushy, transplanted, 1½ to 2 feet, 6*s.* per dozen, 45*s.* per 100; 2 to 2½ feet, 9*s.* per dozen, 65*s.* per 100.
BOX, Green, 1 to 1½ foot, 3*s.* per dozen, 16*s.* per 100.
,, 1½ to 2 feet, 4*s.* per dozen, 25*s.* per 100; 2 to 3 feet, 4*s.* 6*d.* per dozen, 30*s.* per 100.
LAUREL, Portugal, 1½ to 2 feet, 4*s.* per dozen, 30*s.* per 100.
,, ,, very fine, 2 to 3 feet, 8*s.* per dozen, 60*s* per 100.
,, ,, extra fine round bushes, 3 to 4 feet diameter, 2½ to 3 feet, 12*s.* per dozen, 90*s.* per 100.
LEDUM LATIFOLIUM, bedded, 3 to 6 inches, 50*s.* per 1000; 12 to 18 inches, 6*s.* per dozen, 40*s.* per 100.
MAHONIA (Berberis) AQUIFOLIA, 1½ to 2 feet, 10*s* per 100; 2 to 3 feet, 15*s.* per 100.
RHODODENDRON, best hybrid, bedded, 3 to 6 inches, 8*s.* per 100, 60*s.* per 1000; 6 to 9 inches, 10*s.* per 100, 90*s.* per 1000; 9 to 12 inches, 14*s.* per 100.
,, Ponticum, fine dwarf, round bushes, 1 to 1½ foot, 25*s.* per 100, £10 per 1000; 1½ to 2 feet, 5*s.* per dozen, 30*s.* per 100; 2 to 3 feet diameter, 2 to 2½ feet, 6*s* per dozen, 45*s.* per 100; 3 to 4 feet diameter, 3 to 4 feet, 18*s.* per dozen, 150*s.* per 100.
,, Cunningham's White, very bushy, 1¼ to 1½ foot, 50*s.* per 100; 1½ to 2 feet, 65*s.* per 100.
,, best named sorts, bushy, 18*s.* to 30*s.* per dozen.
THORN, new double scarlet (Paul's), 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100; 6 to 8 feet, 7*s.* per dozen, 55*s* per 100.
,, Double Pink, 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100; 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.
,, ,, White, 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100; 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.
,, Single Scarlet, 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100; 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.
Cockspur, 4 to 5 feet, 5*s.* per dozen, 35*s.* per 100; 5 to 6 feet, 6*s.* per dozen, 40*s.* per 100; 6 to 8 feet, 7*s.* per dozen, 55*s.* per 100.
YEW, English, fine, large stock, 9 to 12 inches, 12*s.* per 100; 1¼ to 1½ foot, 20*s.* per 100; 1 to 2 feet, 5*s.* per dozen, 25*s.* per 100; 2 to 3 feet, 7*s.* per dozen, 45*s.* per 100; 3 to 4 feet, 12*s.* per dozen, 80*s.* per 100.
Irish, 2 to 3 feet, 8*s.* per dozen; 3 to 4 feet, 12*s.* per dozen.

Seeds, Seeds, Seeds.

THE HEATHERSIDE NURSERIES COMPANY'S noted GUINEA COLLECTION of VEGETABLE SEEDS,

Packing and Carriage Free, contains as under:—

Peas in variety	.. 7 *qts.*	Cucumber	.. .. 1 *pkt.*
Beans	.. 3 *pts.*	Endive	.. .. 1 ,,
French Beans	.. 1 *pt.*	Leek	.. .. 1 ,,
Scarlet Runners	.. 1 ,,	Lettuce	.. .. 3 ,,
Beet	.. 1 *pkt.*	Mustard	.. .. 4 *oz.*
Borecole	.. 3 ,,	Melon	.. .. 1 *pkt.*
Brussels Sprouts	.. 1 ,,	Onion	.. .. 2 *oz.*
Albert Sprouts	.. 1 ,,	Parsley	.. .. 1 *pkt.*
Broccoli	.. 4 ,,	Parsnip	.. .. 1 *oz.*
Cabbage	.. 4 ,,	Radish	.. .. 6 ,,
Savoy	.. 1 ,,	Spinach	.. .. 1 *pkt.*
Carrot	.. 3 *oz.*	Turnip	.. .. 3 *oz.*
Capsicum	.. 1 *pkt.*	Tomato	.. .. 1 *pkt.*
Cauliflower	.. 1 ,,	Vegetable Marrow	.. 1 ,,
Celery	.. 2 ,,	Sage	.. .. 1 ,,
Cress	.. 5 *oz.*	Thyme	.. .. 1 ,,

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GRAPE VINES.—Fine Planting Canes of Black Hamburgh, 40s. per dozen.
Gold-edged POLYANTHUS, Show PANSY, and VERBENA SEED (Eckford's choice strains), 1s. 6d., 2s 6d, and 5s. per packet. Price to the Trade on application.
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DAVID LLOYD AND CO. (LIMITED).
CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.
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SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
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AGENTS WANTED.

Special Offer to the Trade.
FRUIT TREE STOCKS FOR SALE in IMMENSE QUANTITIES.
L. PAILLET, NURSERYMAN, Chatenay, near Paris, informs his Customers that he can supply for the present season any orders with which he may be entrusted, at the following prices:
QUINCE STOCKS, extra fine, £1 8s. per 1000, £13 per 10,000; No. 1, £1 per 1000, £9 per 10,000.
PEAR STOCKS, 1 or 2-yr. old, extra, 1 to 2 feet, £13 per 10,0000; do. No. 1, 8 and inches up to 1 foot, £8 per 10,000.
" " transplanted, good, £15 per 10,000. [10,000.
APPLE STOCKS, 1-yr., splendid, extra, 2 to 3 feet, £13 per
" " Doucin, splendid, extra, from layers, 2 to 3 feet, £13 per 10,000.
" " Paradis, splendid, extra, from layers, 1½ to 3 feet, £13 per 10,000.
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L. PAILLET offers also a splendid lot of
PEACH TREES, 1-yr. old, grafted, best sorts, at £22 per 100; the trees are from 5 to 6 feet high.
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WELLINGTONIA GIGANTEA PENDULA, new; and
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Fibrous Peat for Orchids, &c.
BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per truck.
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Manufactured by the NITRO-PHOSPHATE and ODAMS' CHEMICAL MANURE COMPANY (LIMITED), consisting of Tenant-Farmers occupying upwards of 150,000 Acres of Land.
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BELL'S MILDEW COMPOSITION, as used by them for the last twenty-five years at their "HORTICULTURAL ESTABLISHMENT, BRACONDALE," their "NURSERIES, LAKENHAM," and "VINERIES, THORPE HAMLET," consisting of over 30,000 feet of glass. Retail, 1s. 6d. and 2s. 6d. per bottle, of the Sole Manufacturers,
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SIMPSON'S RED SPIDER, THRIPS, &c., ANTIDOTE. Testimonials of the highest order on application. Per quart, condensed, 6s.; per pint, 3s. 6d. Supplied to Seedsmen and Chemists.
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Manufacture the highest quality of
ARTIFICIAL MANURES
For ROOT, CORN, and GRASS CROPS.
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E. T. ARCHER'S "FRIGI DOMO."—Patronised by Her Majesty the Queen for Windsor Castle and Frogmore Gardens, the late Sir Joseph Paxton, and the late Professor Lindley, &c.
MADE of PREPARED HAIR and WOOL.
A perfect non-conductor of heat or cold, keeping a fixed temperature where it is applied. A good covering for Pits and Forcing Frames.
PROTECTION from COLD WINDS and MORNING FROSTS.
"FRIGI DOMO" NETTING, 2 yards wide, 1s. 4d. and 1s 10d. per yard.
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2 yards wide .. .. 1s. 10d. per yard run.
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ELISHA T. ARCHER, only Maker of "Frigi Domo,' Stanstead and Brockley Roads, Forest Hill, London, S E; and of all Florists and Seedsmen. All goods carriage paid to London.
NOTICE.—REMOVED from 3, CANNON STREET, CITY.

RALPH WALLER AND CO., 45, Dale Street, Manchester, Manufacturers of all kinds of GARDEN NETTING, &c., for protecting Fruit Trees from Frost; also FRIGI DOMO, 2 yards, 4 yards, and 3 yards wide.
HOT-HOUSE SHADINGS of various thicknesses, superior to any other yet discovered for lightness, strength, and durability, standing, as they do, all weathers.
TIFFANY of various kinds always on hand. Netting and Shading in pieces 30 yards long by 1½ yard wide. Tiffany in pieces 20 yards long, 38 inches wide. Also Tiffany in mineralised state.
For prices, &c., apply to the above address—
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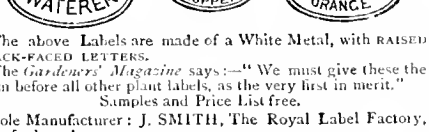
PRUSSIAN WOOD GARDEN STICKS and TALLIES, commended by the Royal Horticultural Society. The above can be had, of all sizes, wholesale, of
CHARLES J. BLACKITH AND CO.,
Cox's Quay, Lower Thames Street, London, E.C.
Retail of the principal Seedsmen. Prices on application.

Under the Patronage of the Queen.

J. SMITH'S IMPERISHABLE STRATFORD LABELS.



The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.
The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
Samples and Price List free.
Sole Manufacturer: J. SMITH, The Royal Label Factory, Stratford-on-Avon

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PARCHMENT or CLOTH LABELS, TREE or PLANT LABELS. Punched Parchment, 4 inches long, 3s. 6d. per 1000, or 30s. per 10,000; if eyeleted, 4s. per 1000. Vellum Cartridge, 4 inches long, 3s. per 1000 for 10,000. Sample Labels sent on receipt of postage stamp. Orders delivered free in London.
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Indestructible Terra-Cotta Plant Markers.
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SHAW'S TIFFANY, ELASTIC NETTING, CANVAS, &c, for Shading, Protecting, and other Horticultural Purposes. For Samples and Prices apply to JOHN SHAW AND CO., 29, Oxford Street, Manchester.

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MR. GEORGE GRANT, the owner of the Victoria Estate, Kansas, will be glad to give personal information as to STOCK FARMS, &c., to be SOLD on this Estate. May be seen personally at the office of ROBERT W. EDIS, Esq., F.S.A., the Architect of the Estate, 14, Fitzroy Square, London, W., between the hours of 10 and 12 in the morning, from MONDAY, February 21, to SATURDAY, March 4, inclusive. Pamphlets containing full information can be obtained at the above address.

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SYDNEY, NEW SOUTH WALES.—Passages are provided for Married Couples not exceeding 40 years of age, with or without children; and Single Men and Women not exceeding 35 years of age; being FARMERS, MECHANICS, MINERS, LABOURERS, and FEMALE DOMESTIC SERVANTS, on payment of the following rates: 12 years and not exceeding 40, £3 10s.; 1 year and under 12, £2 15s.
The "*Star of India*" will be despatched with Emigrants from Plymouth on the 6th of March.
For passages and all further information, apply to the AGENT-GENERAL, at 3, Westminster Chambers, Victoria Street, London, S.W

Rosher's Garden Edging Tiles.

THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.

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Agents for LOOKER'S PATENT "ACME FRAMES," PLANT COVERS and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.
Illustrated Price Lists free by post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3s. per square yard upwards. Pattern Sheets, of plain or more elaborate designs, with prices, sent for selection.
WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds, Roofing Tiles in great variety, Slates, Cements, &c.
F. ROSHER AND CO., Brick and Tile Merchants.
See addresses above.

SILVER SAND, fine or coarse grain as desired. Prices by Post per Ton or Truck Load, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.
FLINTS and BRICK BURRS for Rockeries or Ferneries.
KENT PEATS or LOAM supplied at lowest rates in any quantities.
F. ROSHER AND CO.—Addresses see above.
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A liberal Discount to the Trade.

BELGIAN GLASS for GREENHOUSES, &c.,
Can be obtained in all sizes and qualities, of
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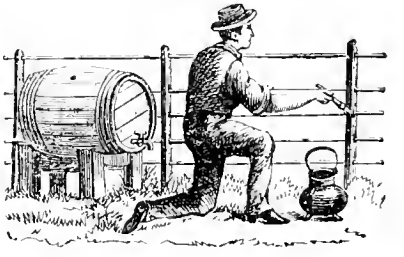
B. & S. have always a large Stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., in 16 oz. and 21-oz.

Oil Paint No Longer Necessary.



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Sold in casks of about 30 gallons each, at 1s 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon carriage paid to any Station in the Kingdom
UNSOLICITED TESTIMONIAL.
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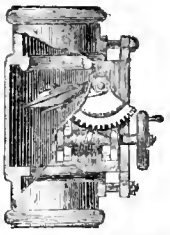
Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley; and 118, Queen Victoria Street, London, E.C., from whom only it can be obtained.
CAUTION. It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would specially draw attention to the fact that every cask of their Varnish is legibly marked with their name and address, without which none is genuine



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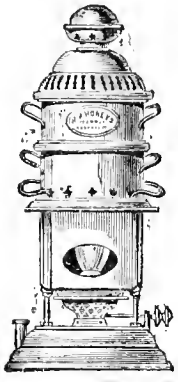
ESTABLISHED 1856.

KEEP OUT THE FROST.



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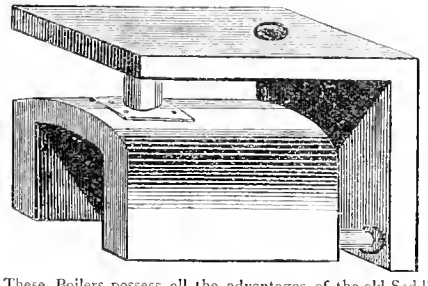
VAPORISING STOVES,
To Burn Kerosene or any Mineral Oil

They will burn for twenty-four hours at a cost of one penny for three hours.
They require no attention beyond replenishing the Oil.
Suitable for Greenhouses, Conservatories, Halls, Bed-rooms, &c.
They will not injure the most tender Exotics, nor are they in any way injurious to the health.
Prices, in block tin, 30s.; in copper, 50s. Copper, with glass, to give light and heat, 55s. Either will be sent on receipt of Post-office Order.

To be seen in operation at
WILLIAM H. HONEY,
263, REGENT STREET, W.
Catalogue free. No agents appointed.

JONES'S PATENT "DOUBLE L"
SADDLE BOILER.



These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements—viz., the water space at back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel; the cost of setting is also considerably reduced, and likewise the space occupied; at the same time these Boilers are simple in construction, and being made of wrought iron are not liable to crack. They are made of the following sizes:—

Sizes.			To heat of 4-in. Pipe.	Price.		
High.	Wide.	Long.	Feet.	£	s.	d.
20 in.	18 in.	18 in.	300	7	0	0
20 ,,	18 ,,	24 ,,	400	8	0	0
20 ,,	18 ,,	30 ,,	500	9	0	0
24 ,,	24 ,,	24 ,,	700	12	0	0
24 ,,	24 ,,	30 ,,	850	14	0	0
24 ,,	24 ,,	36 ,,	1,000	16	0	0
24 ,,	24 ,,	48 ,,	1,400	20	0	0
28 ,,	28 ,,	60 ,,	1,800	25	0	0

Larger sizes if required.

From Mr. CHARLES YOUNG, *Nurseries, Balham Hill, S.W., May 29, 1873.*

"Having given your Patent 'Double L' Boilers a fair trial at my Nurseries, I beg to say that they are most satisfactory. I consider them the best in use, and without doubt the most economical of all boilers; they will burn the refuse of other tubular boilers I have in work."

PRICE LISTS of HOT-WATER PIPES and CONNECTIONS, with Boilers, of all sizes and shapes; or ESTIMATES for HOT-WATER APPARATUS, erected complete, will be sent on application.

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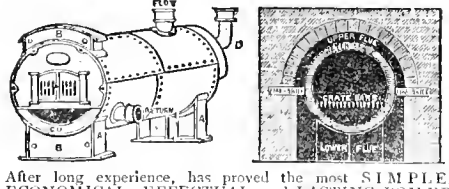
When ordering Boilers please refer to the above advertisement.

STEVENS'
TRENTHAM GREENHOUSE BOILER,



After long experience, has proved the most SIMPLE, ECONOMICAL, EFFECTUAL, and LASTING BOILER extant; recently much improved. For Illustrations, with full particulars, apply to the Sole Makers,

F. & J. SILYESTER,
Castle Hill Foundry, Engineering and Boiler Works,
Newcastle, Staffordshire.

☞ Our Boilers are the ONLY ones made with the sanction and under the inspection of the inventor, Mr. Stevens—all others being base imitations.

JOSEPH HAYWOOD & CO.,
MANUFACTURERS OF

CELEBRATED PRUNING AND BUDDING KNIVES,

PROTECTED BY THE CUTLERS' COMPANY CORPORATE MARK.

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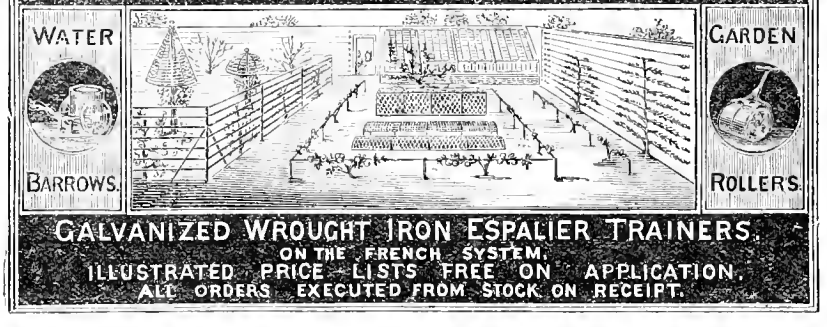
NORFOLK IRON WORKS, NORWICH.



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ON THE FRENCH SYSTEM.
ILLUSTRATED PRICE-LISTS FREE ON APPLICATION.
ALL ORDERS EXECUTED FROM STOCK ON RECEIPT.

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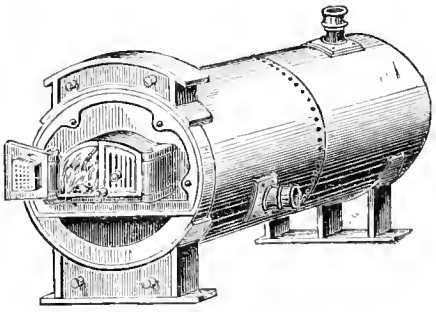
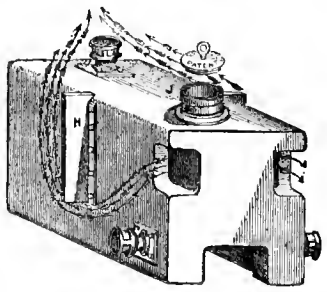
(Successors to LYNCH WHITE),
Old Barge Wharf, Upper Ground Street, London,
SURREY SIDE, BLACKFRIARS BRIDGE.

HOT-WATER BOILERS, PIPES, CONNECTIONS



("TRENTHAM IMPROVED" BOILER.)



("CLIMAX" BOILER.)

NEW PATENT "CLIMAX" BOILER (1874). See p. 666, 1874, *Gardeners' Chronicle.*
"GOLD MEDAL" BOILER (Birmingham, 1872).
PATENT "EXCELSIOR" BOILER (1871).
☞ *The largest and most complete Stock in the Trade; upwards of Twenty Thousand Pounds' worth to choose from.*

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"TRENTHAM IMPROVED" BOILER, with Waterway End and Smoke Consumer.
"TUBULAR," and every other Boiler of known merit or excellence.
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MILL'S PATENT AUXILIARY FUEL ECONOMISER,
Which can be attached to any ordinary Boiler. These Tubes are the greatest Economisers of Fuel and Preservatives of Boilers, Fire Bars, and Furnace Fronts ever yet introduced to the public.

HOT-WATER APPARATUS ERECTED COMPLETE.
PRICE LIST on application; or, Six Stamps for DESCRIPTIVE CATALOGUE, 4th Edition.

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Hothouses, Hot-water Apparatus, &c.

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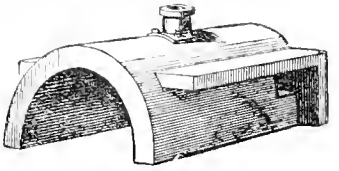

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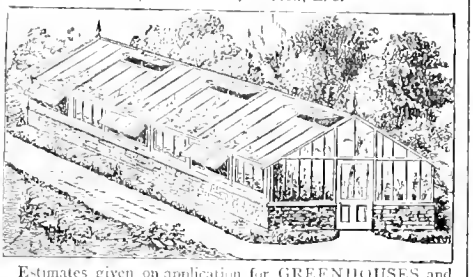

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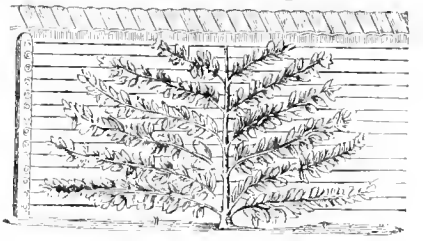

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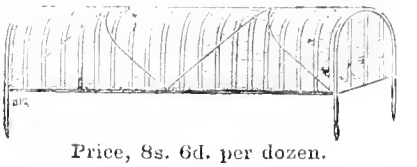

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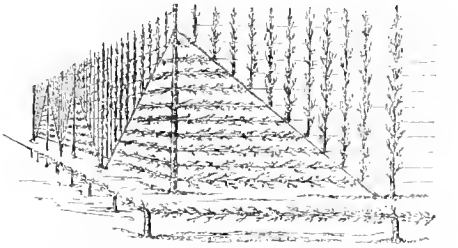

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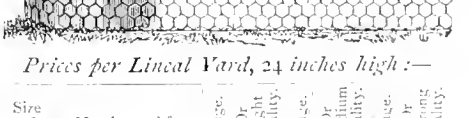

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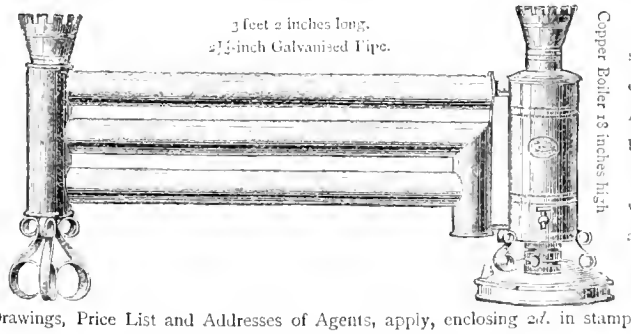

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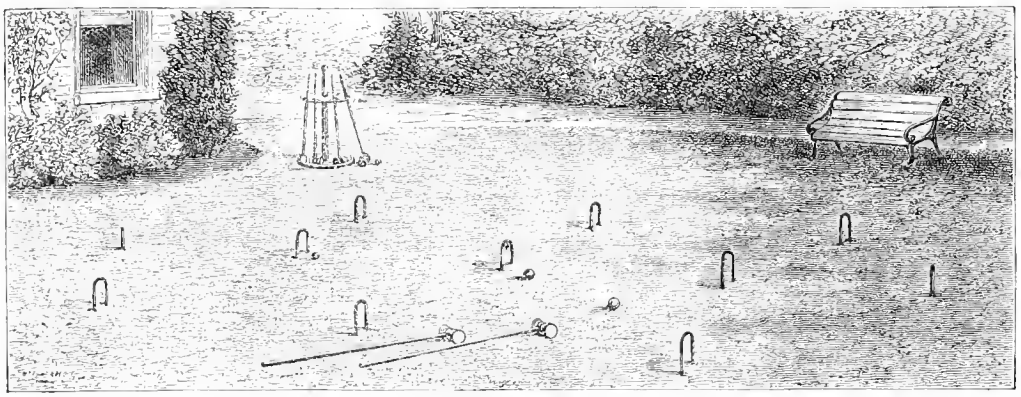

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THE

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Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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GEORGE STANTON, Park Place, Henley-on-Thames.

Rhododendron Stocks.—To the Trade.

PAUL and SON, having completed their American orders, have a few thousands still to offer, at £5 per 1000.
The "Old" Nurseries, Cheshunt, N.

FOR SALE, TWO very handsome well-grown RHODODENDRONS, in tubs, full of Flower-buds (pale pink). Height, 5 feet. Can be seen at
17, Tavistock Crescent, Westbourne Park, London, W.

Transit Agency for Plants, Seeds, &c.

C. J. BLACKITH and CO., late BETHAM & BLACKITH, Cox's and Hammond's Quays, Lower Thames Street, London, S.E.—Forwarders to all parts of the World.

The Oxford Roses, on Cultivated Seedling Brier.

GEORGE PRINCE'S Priced and Descriptive CATALOGUE now ready. All Roses are grown exclusively on the above stock at this establishment.
14, Market Street, Oxford.

New Roses for 1876

H. BENNETT offers a careful selection of the above, in plants not to be equalled; unusually fine this season; ready in March. DESCRIPTIVE LISTS post free. Manor Farm Nursery, Stapleford, Salisbury.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy.
The Ottershaw Nursery, Chertsey.

Standard and Dwarf Roses.
WHOLESALE and RETAIL.

H. LANE and SON have a large stock to Dispose of. Special offer for quantities.
The Nurseries, Great Berkhamsted, Herts.

Notice.—To the Trade.

ROSES, Maréchal Niel—2000, strong healthy plants, in 5-inch pots, 60s. per 100. Also fine Dwarf ROSES, on the Manetti, all the leading varieties, 25s. per 100.
BELL and SON, Nurserymen and Seed Merchants, 10 and 11, Exchange Street, Norwich.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD and SON, 5, Harp Lane, Great Tower Street, London, E.C.

Hardy Florists' Flowers.

THOMAS S. WARE has much pleasure in announcing that his CATALOGUE for 1876 of the above will be forwarded in a few days to each of his patrons, also post free on application.
Hale Farm Nursery, Tottenham, London, N.

VERBENAS, VERBENAS, VERBENAS.—White, Purple, Scarlet, and Pink; also twelve extra choice named varieties, strong, healthy-rooted cuttings, perfectly free from disease, 6s. per 100, 50s. per 1000, for cash.
H. BLANDFORD, The Dorset Nurseries, Blandford.

Verbenas, Verbenas, Verbenas.

WILLIAM BADMAN offers good healthy Plants. Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

A New Pea.

YOUNG'S NONSUCH.—The most perpetual bearing of all Peas. Of all Seedsmen, and of CHARLES YOUNG, The Nursery, Balham Hill, London, S.W.

NOTICE.—Large AZALEAS for Sale, Cheap.
CHARLES YOUNG, The Nursery, Balham Hill, London, S.W.

CUT CAMELLIAS, Cheap, of
CHARLES YOUNG, The Nursery, Balham Hill, London, S.W.

FOR SALE, 8000 CARTER'S PROLIFIC RASPBERRY CANES (true), at 25s. per 1000.
JAMES BURKIN, Cudham, near Chislehurst, Kent.

Special Offer, to Clear the Ground.

PEARS.—A superb lot of extra tall and strong Standards. Prices low. Apply to
BENJAMIN R. CANT, Nurseryman, Colchester.

Special Offer, to Clear the Ground.

MULBERRIES.—The finest lot of Standards in England; also a quantity of 1-yr. and 2-yr. old Plants. Prices low. Apply to
BENJAMIN R. CANT, Nurseryman, Colchester.

ASPARAGUS PLANTS, sufficient to plant 15 acres—from Connover's Colossal Seed, 10 acres, and from English Seed, the produce of fine plants, 5 acres.
Mr. R. FORMBY, Formby, near Liverpool.

To the Trade.

ASPARAGUS, 1-yr., 2-yr., and 3-yr. TROPÆOLUM CANARIENSE.
JAMES BIRD, American Nurseries, Downham.

CABBAGE PLANTS.—100,000 Robinson's Drumhead Cow Cabbage Plants, extra strong, at 3s. 6d. per 1000. Apply to
G. WINFIELD, Sandhurst Road, Gloucester.

SALES BY AUCTION.

Five Hundred Odontoglossum crispum.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, March 6, at half-past 12 o'Clock precisely, 500 imported plants of ODONTOGLOSSUM CRISPUM (Alexandræ), and 400 ODONTOGLOSSUMS of various sorts, imported without names from the mountainous districts of the United States of Colombia.

On view the morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Saccolabium præmorsum.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, March 6, at half-past 12 o'Clock precisely, some imported plants of the exceedingly rare and true SACCOLABIUM PRÆMORSUM, and some imported plants of SACCOLABIUM GUTTATUM. Also a small Collection of ESTABLISHED ORCHIDS, including many rare kinds.

On view the morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Sarracenia Drummondii.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, March 6, a large quantity of this extremely rare plant, which has just arrived in the best possible condition, also an importation in good condition of SARRACENIA PURPUREA.

On view the morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Specimen Palms.

MR. J. C. STEVENS will include in his Sale at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, March 8, at half-past 12 o'Clock precisely, a Consignment of Specimen PALMS, DRACÆNAS, MUSAS, and other GREENHOUSE PLANTS. Also ROSES and FRUIT TREES, just arrived from a well-known nursery in France.

On view the morning of Sale, and Catalogues had.

Plants and Bulbs.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, March 8, at half-past 12 o'Clock precisely, a Consignment of PALMS, MUSAS, YUCCAS, ROSES, FRUIT TREES, and other HARDY and GREENHOUSE PLANTS, just arrived from France; STANDARD and DWARF ROSES, ORNAMENTAL TREES and SHRUBS, HERBACEOUS PLANTS, GLADIOLI, RANUNCULI, LILIES, RUSTIC GARDEN WORK, &c.

On view the morning of Sale, and Catalogues had.

Handsome Ornamental Plants.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, March 9, at half-past 12 o'Clock precisely, a Collection of Handsome ORNAMENTAL PLANTS, such as Palms, Dracænas, Ferns, Cycas, &c., some suitable for giving effect in Plant-houses and Conservatories, others elegant and handsome for Table Decoration; a small collection of English-grown CAMELLIAS, and some ORCHIDS and LILIES of various choice sorts.

On view the morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Prize Amaryllis.

MR. J. STEVENS has been favoured with instructions from Charles Kieser, Esq., of Broxbourne, to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, March 9, at half-past 12 o'Clock precisely, his entire, extensive, and unique COLLECTION of AMARYLLIS SEEDLINGS, raised by him, which always gained the First Prizes at the Shows of the Royal Horticultural Society and Royal Botanic Society, and a number of First Class Certificates, and were so favourably noticed by all Floral Magazines.

May be viewed the morning of Sale, and Catalogues had shortly.

Pine-apple Nursery, Edgware Road, W.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions from Mr J. Weeks to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., almost without reserve, about the MIDDLE of APRIL, the Valuable PREMISES and GOODWILL of the PINE-APPLE NURSERY, Maida Vale, Edgware Road, W., together with Dwelling-house, Seed Shop, and Offices, and all the extensive ranges of Horticultural Buildings and Sheds.

Held:—As to part, for a term which will expire in 1909, at a Ground-rent of £45; and, as to the remainder, for a term which will expire in 1923, at a Ground-rent of £89. The Nursery has, within the last three or four years, been very greatly enlarged and improved, upwards of £10,000 having been expended in additions, improvements, and repairs; and it is considered in the Trade to be the most important Establishment of the kind in the World. It possesses an extensive connection both in the Nursery and Seed Trade, amongst the Nobility and Gentry and their Gardeners. Part of the purchase-money may remain on Mortgage.

Nurseries in the immediate neighbourhood of London are seldom valued by the acre; but this is an exception, as the Horticultural Buildings and Show-grounds cover about 2½ Acres, and form a most valuable property, and well adapted for a Skating Rink (permission for which can no doubt readily be obtained), as well as a Nursery Business.

For further particulars apply to Messrs. KEARSEY, SON, AND HAWES, 35, Old Jewry, London, E.C.; and Mr. J. C. STEVENS Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

The Pine-apple Nursery, Maida Vale, W.

PROPOSED PARTNERSHIP.—The Advertiser, a Gentleman in the Trade, who believes that the above Nursery possesses great facilities for doing an extensive First-class Business, would be happy to meet with a thorough practical Horticulturist, with Capital at command, to join him on equal terms in the purchase of the Business, and for carrying it on in Partnership. For an introduction, apply to Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

Important Sale of Cattleya gigas and ODONTOGLOSSUM VEXILLARIUM.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, March 13, at half-past 12 o'Clock precisely, imported Plants of the rare and most lovely Odontoglossum vexillarium, Cattleya gigas, Uropedium Lindeni, just received by R.M.S.S. "Nile;" also splendid Established Plants, many of them in flower, of Phalænopsis amabilis, P. Schilleriana, P. roseus, P. Luddemanniana, P. grandiflora, P. leucorrhoda, Dendrobium Wardianum, D. crassinode, D. Falconeri, Cymbidiums, Vandas, &c.

The Cattleya gigas and Odontoglossum vexillarium are worthy of special attention, the plants of this grand Odontoglossum being by far the finest hitherto offered, and in the best possible condition, the leaves and young breaks being fresh and green.

On view the morning of Sale, and Catalogues had.

Important Sale of Stove and Greenhouse Plants.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, March 22, at half-past 12 o'Clock precisely, the Valuable Collection of STOVE and GREENHOUSE PLANTS, RARE PALMS, FERNS, FOLIAGE PLANTS, HEATHS, AZALEAS, and EXHIBITION PLANTS, the property of Mr. Carr, of Fyfleet, and sold in consequence of the death of Mr. Hinds.

On view the morning of Sale, and Catalogues had.

Important Notice

To the NOBILITY, GENTRY, PLANT AMATEURS, and the TRADE.

MESSRS. PROTHEROE AND MORRIS, who for many years past have been obliged to refuse numberless Sales in consequence of their not being able to obtain a suitable room in which to conduct them, are now in a position to undertake a limited number of First-class Sales, having made arrangements with the authorities of the Auction Mart, Tokenhouse Yard, near the Bank of England, to have the use of the large Estate Room on the ground floor for the purpose. Its position in the very heart of the City, its close proximity to all the great centres of the monetary world, its easy access, large dimensions, and admirable proportions, render it the most attractive Auction Room in London.

Messrs. PROTHEROE AND MORRIS are desirous of directing the attention of those who wish to avail themselves of these facilities for disposing of their Collections of Choice Plants to the advisability of their giving as early an intimation as possible of probable Sales, as the pre-arrangement and the classification of the Auctions are always made with a view to insure the attendance of numerous buyers

Hendon, Middlesex.

Dissolution of Partnership of the Firm of Messrs. J. and A. Wright.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, without reserve, on the Premises, Church End Nurseries, Hendon, about three-quarters of a mile from two railway stations, on TUESDAY, March 7, and THREE FOLLOWING DAYS, at 11 for 12 o'Clock each day, the whole of the thriving NURSERY STOCK, comprising thousands of Ornamental and Forest Trees, including 2000 Limes, Planes, &c.; also great quantities of Aucubas, Rhododendrons, Cupressus, Green and Variegated Hollies, Thujas, thousands of Berberis, Standard Roses, Fruit Trees, Guelder Roses, Virginian Creepers in pots, and a miscellaneous assortment of other shrubs; also some Greenhouse Plants. SIX GREENHOUSES, FOUR BOILERS, and a quantity of HOT-WATER PIPING, &c.; also the VALUABLE LEASE of this Nursery, which will be offered on the first day, at 12 o'Clock precisely.

May be viewed prior to Sale. Catalogues of Stock and Particulars of Sale may be had on the Premises; of Messrs. ALLEN AND SON, Solicitors, 17, Carlisle Street, Soho, W.; and of the Auctioneers.

N.B. The sales of the remaining Leases and Stock will take place in the following order:—

March 14 and 15, at the Nursery, Mill-hill, Hendon, Middlesex.

March 17, at the Nursery, Edgware.

Auction Mart, Tokenhouse Yard, E.C.

IMPORTANT SALE of 100 Lots of choice established ORCHIDS, mostly in flower, including Dendrobium crassinode, D. Falconeri, D. Wardianum, Phalænopsis Schilleriana, P. grandiflora, P. amabilis, Cymbidium eburneum, C. Parishii, Cyrtopodium Andersonianum, Lælia grandis, Vanda tricolor, Cypripedium Harrisianum, Oncidium splacelatum, &c. Also 5000 LILIUM AURATUM from Japan, seventy TREE FERNS, with handsome trunks from 2 to 7 feet high, nearly all in growing condition, consisting of Cyathea dealbata and Smithii, and Dicksonia squarrosa. Also thirty large CAMELLIAS in flower, from 3 to 6 feet high; forty fine GARDENIA INTERMEDIA coming into flower, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above on MONDAY, March 13, at 11 for half-past 11 o'Clock to the minute.

On view the morning of Sale, and Catalogues had of the Auctioneers and Valuers, 98, Gracechurch Street, E.C.

Clarendon Nursery, Maida Vale, St. John's Wood, and WILLESDEN, MIDDLESEX.

Highly Important to NURSERYMEN, FLORISTS, SEEDSMEN, and OTHERS desirous of securing a most valuable LEASEHOLD PROPERTY at the West End of London, universally renowned as one of the first Floral Establishments in the United Kingdom, patronised by the Nobility and the leading Gentry.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. F. Videon to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on MONDAY, March 13, at 1 for 2 o'Clock precisely, the valuable LEASES and GOODWILL of the old-established NURSERY GROUNDS, known as Clarendon Nursery, occupying the choicest position in the centre of the most aristocratic and *elite* of London Society, possessing 341 feet frontage, or thereabouts, to the Maida Vale and St. John's Wood Roads, London, N.W., and containing an area of about three-quarters of an acre of very Choice Land, with the following glass erections and other offices standing thereon:—An elegant modern Circular and Iron Roof Conservatory, communicating with Shop and Office; the extensive Range of Greenhouses and Forcing Pits, fitted up with modern appliances. There is likewise a convenient Twelve-roomed Detached Family Residence, excellent Stabling and Coach-houses. The whole is held under leases of the average term of forty years unexpired, at the exceedingly low ground rent of £42 per annum. Also the LEASE of the BRANCH NURSERY at WILLESDEN, with several newly-erected Greenhouses and other Buildings standing thereon.

Particulars of Sale may be had, when ready, of J. A. BERTRAM, Esq., 22, Chancery Lane, W.C.; and of the Auctioneers and Valuers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Stamford Hill, N.

CLEARANCE SALE of NURSERY STOCK.

Thomas Dowell, deceased.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, York Nursery, St. Anne's Road, late Hanger Lane, Stamford Hill, London, N., on THURSDAY, March 16, at 11 for 12 o'Clock precisely, by order of the Executrix, without reserve, the whole of the valuable NURSERY STOCK, consisting of Evergreens, Coniferæ, and Deciduous Shrubs, Herbaceous Plants, Hardy Ferns, and numerous other effects.

N.B.—The Land, about 1¼ acre in extent, and which is immediately available for building purposes, will be offered at the Auction Mart, Tokenhouse Yard, E.C., on the 27th inst.

Catalogues had on the Premises, and of the Auctioneers as above.

Leatherhead.

SALE of Valuable NURSERY STOCK in consequence of the expiration of Lease.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. D. Christie to SELL by AUCTION, on the Premises, The Nurseries, Leatherhead, on WEDNESDAY, March 22, at 12 for 1 o'Clock precisely, a large quantity of Valuable NURSERY STOCK, consisting of a considerable number of large and effective Coniferæ; also many thousands of smaller Evergreens, including 5000 English Yews, 4000 Common Laurels, 4000 Box, Laurustinus, Cupressus, Thujas, Irish Yews, Rhododendrons, Arbutus, &c.; 2000 Lilacs, a quantity of Deciduous Shrubs and large Ornamental Trees, Fruit Trees, &c.

May be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers.

To Florists, Hothouse Fruit Growers, Market GARDENERS, and OTHERS.

MR. BRADSHAW BROWN is instructed to SELL, by PRIVATE TREATY, the FREEHOLD DWELLING, with about half an acre of Land attached, and three large Hothouses, known as "Avondale Villa," Queen's Road, Hampton Hill. The Hothouses are well fitted with Apparatus, and the Dwelling is attractive and conveniently built. No stock to take to, and immediate possession may be obtained. Ill-health of late occupier sole cause for leaving.

For full particulars and price, apply to Mr. BRADSHAW BROWN, Auction and Estate Offices, Mill Wall, London, E.

Preliminary.—Sale of a very Valuable Collection of Specimen and Half-specimen STOVE and GREENHOUSE PLANTS, the whole of which have been exhibited.

ARTINGSTALL AND HIND (the surviving Partners of the late Firm of CAPES, DUNN & Co.) beg to announce that they have received instructions from Messrs. E. Cole & Sons to SELL by AUCTION, about the MIDDLE of APRIL, at their Nurseries, Withington, near Manchester, the valuable Collection of EXHIBITION PLANTS.

Catalogues will be prepared in due course, and further information may be had by applying to the Auctioneers, 5, Princess Street, Manchester.

To Nurserymen, Florists, and Others.

WANTED TO RENT, a SMALL NURSERY and Six-roomed COTTAGE. Country preferred. Near rail. Not to exceed £30 rental, nor £50 valuation. A Partnership might be entertained.

G. B., Cold Ashton, Chippenham, Wilts.

Isle of Wight.

TO BE LET, FURNISHED, from the commencement of May to the end of October, a CHARMING COUNTRY RESIDENCE, standing in its own well-arranged grounds of 3 acres, situate midway between Carisbrooke and Newport, and within a quarter of an hour's walk of Newport Station. The Residence, which is approached by a Carriage Drive, contains Drawing and Dining-rooms, Ante-room opening into a large Conservatory, eight Bedrooms, Kitchen, and complete Domestic Offices. The Grounds, which are carefully kept, comprise nearly 3 acres of Pleasure Garden, tastefully laid out in Walks and Parterres, with three distinct Croquet Lawns, Summer House, &c., a well-stocked Orchard, good Kitchen Garden, and small Paddock, with Greenhouses, Hothouse, &c., Stabling for three Horses, with separate entrance. The whole forms a most enjoyable resort for any one taking an interest in Floricultural pursuits. Rent, 12 guineas per week or 15 guineas if the Proprietor pays the Gardeners. For particulars and orders to view, apply to

Mr. HENRY VULLIAMY, Surveyor, 17, Alchurch Lane, London, E.C.; or to Messrs. PITTIS AND SON, Auctioneers, Newport, Isle of Wight.

N.B. Railway communication is now open from Newport to Cowes, Ryde (direct), Sandown, Shanklin, and Ventnor.

TO NURSERYMEN and MARKET GARDENERS.—Within 12 miles of London, near two Railways. Very choice LAND, particularly adapted for Nursery purposes. Any quantity, from 20 Acres upwards.

Apply to Messrs. GLASIER AND SONS, 11, Charing Cross, London, S.W.

FOR SALE, 500 MAIDENHAIR FERNS, in 32-sized pots. For price, &c., apply to L. J. WALKER, The Nurseries, Wood Green, Waltham Abbey, Essex.

POTATO SEED, warranted true.—An offer wanted for 2 tons of RIVERS' ROYAL ASHLEAF, by letter to JAS. SMITH, Eynsham, Oxon.

G. CHORLEY, Midhurst, has to offer:—LARCH, 20,000, 2 to 3 feet, 30s.; 30,000, 18 inches to 2 feet, 21s. CHESTNUT, Spanish, 50,000, 2 to 3 feet, 40s.; 50,000, 18 inches to 2 feet, 30s; Seedling do., 200,000. ASH, stout, transplanted, 100,000, 2 to 3 feet, 25s.

EAST LOTHIAN INTERMEDIATE STOCKS.—Carefully saved seed of the above magnificent Stocks, in separate packets of White, Purple, Scarlet, and White Wall-leaved, at 1s., 2s. 6d., and 5s. each colour. The Trade supplied.

THOMAS METHVEN AND SONS, Edinburgh.

RHODODENDRON MULTIFLORUM, with from 100 to 200 Flower-buds, 2s. 6d. each. Price per dozen or hundred on application to

ISAAC DAVIES, Nurseryman, Ormskirk.

EUCHARIS AMAZONICA.—Strong bulbs, shaken out of pots, 40s. per 100.

BURGESS, KENT AND SONS, Penkhull Nursery, Stoke-n-Trent

YEWS.—For Sale 2000 Yews, from 3½ to 4½ feet, well adapted for Hedges or Ornamental Trees, well-rooted and grown, in prime condition for planting now, at 90s. per 100. JOSEPH SPOONER, Goldworth, Woking.

Vines, Vines, Vines.

B. S. WILLIAMS begs to announce that his stock of VINES is now in fine condition, and ready for sending out. It comprises all the leading kinds, strong Canes of Pearson's Golden Queen.

For prices and description see BULB CATALOGUE.

Victoria and Paradise Nurseries, Upper Holloway, London, N

To the Trade.

VINES.—A fine lot of well-ripened Canes of BLACK HAMBURGH and other varieties. Price on application.

CARTER'S, 237 and 238, High Holborn, London, W.C.

Notice.—Seeds, Seeds.

WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds.

CATALOGUES now ready, which contain every requisite, at fair prices, post-free on application.

Highgate, London, N.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Figs, Apricots, Cherries, Mulberries, and Oranges.

RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

Orchard-House Trees in Pots.

H. LANE AND SON have a very fine lot of PEACHES, NECTARINES, and APRICOTS, well set with fruit-buds, at 5s. each.

The Nurseries, Great Berkhamsted, Herts.

VEITCH'S IMPROVED ASHLEAF KIDNEY POTATOS, warranted true. Cash price, 6s. per bushel.

G. STEVENS, St. John's Nursery, Putney, S.W.

SEED POTATOS for Sale—a great variety. List of prices sent post-free on application.

JOHN BATH, Potato Salesman, 31, Wellington Street, Covent Garden, W.C.

SEED POTATOS.—Late Rose, Oxfordshire Kidney, Bresee's Climax, Rector of Woodstock, Carter's Vermont Beauty, President, &c. Prices on application to

HY. MINCHIN, The Nurseries, Hook Norton, Oxon

Mangel and Swede.

JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself.

Bardney Manor, Lincoln.

PARSNIP SEED.—True Guernsey Hollow Crown, 6d. per oz., free by post on receipt of stamps.

J. H. PARSONS, Market Place, Guernsey.

CALCEOLARIA AUREA FLORIBUNDA and GOLDEN GEM, autumn-struck, clean, healthy, and vigorous, 5s. per 100, 40s. per 1000, package free. "Cash," Post-office Order on Chester.

FIELD BROTHERS, Tarvin Road Nursery, Chester.

Fruiting and Planting Vines.

THE COWAN PATENTS COMPANY (late Meredith) have still on hand a good selection of the above. Catalogues and prices on application. They can also offer good Fruiting and Succession PINES.

The Vineyard, Garston, near Liverpool.

POLYANTHUS, choice mixed, 1s. 6d. per packet; also extra choice mixed (from fine laced flowers), 2s. 6d. per packet, post free. Flower Seeds of every description of the choicest quality.

JAMES DICKSON AND SONS, Seed Growers, 108, Eastgate Street, Chester.

To the Trade.

RASPBERRIES, Fastolf.—A few thousands of the above still for disposal, price low.

Also CARNATIONS, PICOTEES, and PINKS, in quantity, on application to

BRUNNING AND CO., Great Yarmouth Nurseries.

Thorns, Thorns, Thorns.

PARKER AND BUSH offer extra strong THORN QUICK, 2 to 3 feet, three times transplanted. Price and samples on application.

St. Michael's Hill Nursery, Bristol.

To the Trade.

DWARF-TRAINED PEARS.—Five to seven branched Trees, extra fine, £5 per 100, the following varieties:—Beurré Diel, Jargonelle, Louise Bonne of Jersey, Marie Louise, Williams' Bon Chretien, Winter Nelis

JAS. GARAWAY AND CO., Durdham Down Nurseries, Bristol.

Lilium auratum.—Orchids.

W. F. BOFF offers magnificent Bulbs of LILIUM AURATUM, at 6s., 9s., and 12s. per dozen; one of each size post-free for 36 stamps. W. F. B. also offers ORCHIDS, good sorts, nice plants, at 21s., 30s., and 42s. per dozen.

203, Upper Street, Islington, N.

Campanula Smithii.

W. SMITH begs to inform those interested in the Culture of Hardy Flowers that he intends to send out the above-mentioned beautiful Campanula in April next. Strong Flowering Plants, 5s. each. Price to the trade on application. Wilmot Road, Leyton, Essex.

Johnstone's St. Martin's Rhubarb.

EARLIEST and BEST in CULTIVATION for Open Ground; has a splendid colour, and excellent for Forcing. Strong roots, 9s. per dozen. Trade price on application.

W. P. LAIRD AND SINCLAIR, Nurserymen, Dundee, N.B.

Hardy Perennials Illustrated.

THOMAS S. WARE has pleasure in announcing that his CATALOGUE for 1876 of the above will be distributed in a few days to each of his patrons, also post-free on application.

Hale Farm Nursery, Tottenham, London, N.

The Best Lawn Mixture.

JAMES DICKSON & SONS' FINEST LAWN MIXTURE, for Forming New or Renovating Old Lawns, is VERY SUPERIOR to all others.

108, EASTGATE STREET, CHESTER.

EXCELLENT GARDEN SEEDS.
CHOICE FLOWER SEEDS.
SUPERIOR FARM SEEDS.

See Illustrated and Priced LIST, to be had free on application.

The superiority of these Seeds is proved by the numerous testimonies constantly received, and those who wish for a superior article should order at once of

HARRISON AND SONS, Seed Growers, Leicester.

To the Trade.

JACS. JURRISSEN AND SON beg to call particular attention to their large stock of FRUIT TREES, Dwarf-trained PEACHES and APRICOTS, Standard ORNAMENTAL TREES and SHRUBS, HOLLIES, ROSES, CONIFERÆ, and FOREST TREES.

Wholesale TRADE LIST now ready, free on application.

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NEW AND GENUINE GARDEN AND AGRICULTURAL SEEDS.—Special prices and advantageous offers of above on application. Urgent orders, or orders by telegraph will be promptly attended to.

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Covert Plants.

PETER S. ROBERTSON AND CO., NURSERYMEN, Edinburgh, offer, at cheap rates, BLACK THORN, ENGLISH MAPLE, BROOM, FURZE, 1 to 2 feet high.

SPECIAL OFFER of SEEDLING RHODODENDRONS, 2-yr. and 3-yr., £7 10s. and £12 10s. per 100,000; 4-yr. and 5-yr., 7s. 6d. and 10s. per 1000.

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GIANT ASPARAGUS PLANTS, the best that money can procure, all certain to grow, 2s. 6d. per 100. This delicious vegetable does not require half the expense usually incurred in planting it. See RICHARD SMITH'S SEED LIST for 1876.

Extra strong SEAKALE, 2s. per dozen.

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SEED POTATOS.—We can still offer fine samples of Mona's Pride, Myatt's Prolific, Sutton's Racehorse, American Early Rose, Rivers' Royal Ashleaf. Prices moderate, and will be quoted on application.

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VICTORIA PLUMS, dwarf-trained, by the 100, and other leading sorts—the finest trees in the trade, having five to fifteen strong vigorous branches each, 120s. to 150s. per 100; also Maiden Victoria, 5 feet high, fine, 40s. per 100.

EWING AND CO., Norwich.

Maiden Nectarine and Peach Trees.

JAS. GARAWAY AND CO. offer the undermentioned varieties, clean, well-grown stuff, at 60s. per 100:—Elruge, Pine-apple, and Pitmaston Orange NECTARINES; Late Admirable, Noblesse, Royal George, and Walburton Admirable PEACHES.

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ANDRÉ LEROY'S Nurseries, Angers, France—the largest in Europe.—NEW CATALOGUE of Fruit and Ornamental Trees, Shrubs, Camellias, Roses, Stocks, Seedlings, &c., sent on application.

Freight from Angers to London, *viâ* steamers from St Nazaire, about 2s. per 100 lb., except for packages below 500 lb.

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CENTAUREA RAGUSINA, established in single pots, can be supplied at 20s. per 100. Package, 3s. 6d. per 100, 2s. per 50; no less number than which will be supplied at this rate.

THYMUS CITRIODORUS AUREUS MARGINATUS, will be supplied in established plants (not rooted cuttings), at 3s. for 50, 5s. per 100, 21s. per 500, 40s. per 1000.

J. J. MARRIOTT, Highfield Nursery, Matlock.

ELACK, The Nurseries, Wellingborough, Notts, offers fine well-rooted trees as under:—FIR, Spruce, 2 feet and 3 to 3½ feet, bushy; do. Scotch, 2 to 3 feet and 3 to 4 feet; PINE, Austrian, 2 feet and 3 to 4 feet; YEWS, English, 2 feet and 3 to 3½ feet; LIMES, stunt, straight stems, 8 to 10 feet, good heads; POPLARS, 10 to 14 feet. Prices, low, on application

120,000 Vesuvius Geraniums for Sale.

F. C. WOOLVEN, Langhedge Nurseries, Church Road, Upper Edmonton, London, N., has strong AUTUMN STRUCK PLANTS of the above to Dispose of, at 8s. per 100. Packed and forwarded to any London railway station gratis on receipt of Post-office Order for number required, payable at the Upper Edmonton Post Office, London, N. Also several thousands of CHRISTINE and DOUBLE GERANIUMS, at the same price.

Lilium polyphyllum.

THE NEW PLANT AND BULB COMPANY have much pleasure in announcing to their Lily friends, that since the publication of their Special List, they have received an excellent consignment of this exceedingly rare and valuable Indian Lily. Prices on application.

Lion Walk, Colchester.

Cupressus Lawsoniana.

R. AND G. NEAL have the above to offer, 12 to 18 inches high, twice transplanted, bushy and well-rooted plants, at 20s. per 1000, delivered on rail in London

The Nurseries, Wandsworth Common, S.W.

Pelargoniums. Pelargoniums.

JAMES HOLDER'S unrivalled Collection—strong healthy Plants, Show, French, and Fancy varieties, at 35s. per 100, cash, Hamper and Packing included. Extra strong plants, in 48's and 32's, at 9s. and 12s. per dozen, Basket and Packing extra.

Crown Nursery, Reading.

The Most Beautiful new Pelargonium is

BEAUTY OF OXTON.

Price, 1 guinea each.

A pretty and charming novelty is the new double flowering IVY-LEAVED PELARGONIUM, "KONIG ALBERT." Price 7s. 6d. each.

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PRIMULA CORTUSOIDES AMŒNA.—This is the most lovely Flower for Spring Gardening or Indoor Decoration; 35s. per 100, £15 per 1000, in pots.

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FRUIT and ORNAMENTAL TREES and SHRUBS Roses, Camellias, Rhododendrons, Azaleas, Gardenias, Magnolias. Specialty for Nursery Stocks, Pear Seedlings, Quinces, Plum Seedlings, Mahaleb Cherries, Paradise, Doucin, and other Stocks. CATALOGUES sent on demand.

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CHARLES BURGESS begs to offer the following:—Strong Standard, Pyramid and Dwarf-trained FRUIT TREES, ROSES, Evergreen and Deciduous FLOWERING SHRUBS, English OAKS, ELMS, and LIMES, up to 10 feet; Larch, Spruce, and Scotch FIRS, and a general Nursery Stock. Prices on application.

The Nurseries, London Road, Cheltenham.

Cheap Surplus Stock.

HORSE CHESTNUTS, 4 to 6 feet, 60s. per 1000. ENGLISH OAKS, 4 to 6 feet, 50s. per 1000. SPRUCE FIR, 1½ to 2 feet, 60s. per 1000; 2 to 3 feet, 100s. per 1000. LAURELS, 1½ to 2 feet, 60s. per 1000; 2 to 3 feet, 100s. per 1000, all well transplanted and bushy.

R. TUCKER, The Nurseries, Faringdon, Berks.

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H. LANE AND SON have still some fine Fruiting Canes to offer, of their usual excellent quality. H. L. AND SON have always taken the First Prize for Vines in Pots at all the leading exhibitions. The Vine eyes, being taken from our own Vineries, may be depended on as true to name.

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Home-grown GARDEN and AGRICULTURAL SEEDS.

H. AND F. SHARPE'S Wholesale Special Priced LIST of the above Seeds of 1875 growth is now ready; it comprises all the best sorts in cultivation. The quality is very fine, and the prices will compare favourably with those of other growers.

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CUCUMBER PLANTS—"TELEGRAPH," strong plants, now ready. Price, including box and packing, 12s. per dozen.

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NEW DOUBLE IVY-LEAF PELARGONIUM, "KONIG ALBERT;" good plants, 3s. each, 30s. per dozen.

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TO THE TRADE.—LARCH, strong, 2 to 2½ and 2½ to 3½ feet, clean grown and well-rooted PEAR STOCKS, twice transplanted; 2-yr. seedling PEARS, ASH, 1½ to 3½ feet, and 1-yr. seedlings. GEANS, 1-yr. seedlings. VIOLAS and PANSIES, bedding; and Show and Fancy do. PHLOXES, early and late.

DICKSONS AND CO., 1, Waterloo Place, Edinburgh.

RHODODENDRONS.

2-yr. seedlings. | 4 to 8 inches, transplanted.
3-yr. seedlings. | 6 to 10 inches, transplanted.

8 to 12 inches, transplanted

For Prices and Samples apply to

HENRY FARNSWORTH, Matlock Bank, Derbyshire

To the Trade.—Seed Potatos.

H. AND F. SHARPE are prepared to make Special Offers of SEED POTATOS grown on their own Farms from the finest selected stocks. Their List this season comprises all the English and American varieties worthy of cultivation. The prices will be found very moderate.

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RICHARD SMITH'S FRUIT LIST contains a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c. Free by post for one stamp

RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

PANSIES, Show and Fancy, the leading sorts, per 100 or 1000.

Bedding Pansy, "Royal Blue," awarded "Best Blue Pansy," Scottish Pansy Show, Edinburgh, June, 1875. Prices on application.

WM. PAUL, Crossflat and Greenhaw Nurseries, Paisley.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.

Mr WEBB, Calcot, Reading.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

CABBAGE PLANTS for Sale.—Good strong well-rooted Plants of Early Battersea, Enfield Market, Improved Nonpareil, and Robinson's Champion Cattle Cabbage, delivered free on rail at 3s. per 1000, package included. Cash to accompany all orders.

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RHODODENDRON DALHOUSIANUM.—Strong Plants, in 5-inch Pots, 15 inches to 2 feet high: 15s. per dozen, £5 per 100.

BURGESS, KENT AND SONS, Penkhull Nursery, Stoke-on-Trent.

NEW LILIES.

LILIUM KRAMERI.—This hitherto scarce and charmingly beautiful Japanese species can now be supplied at 5s. and 7s. 6d. each.
" BLOOMERIANUM OCELLATUM, 5s. and 7s. 6d. ea.
" TIGRINUM JUCUNDUM, 5s. and 7s. 6d. each.
" NEILGHERRENSE, 7s. 6d. each.
" CALIFORNICUM, 3s. 6d. and 5s. each.
" ELEGANS SPLENDIDA, 3s. 6d. and 5s. each.
" HUMBOLDTII, 3s. 6d. and 5s. each.
" PARVUM, 3s. 6d. and 5s. each.
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For descriptions of the above and other choice Lilies, *vide* Mr. WILLIAM BULL'S CATALOGUE.

WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Bulbous or Tuberous Begonia Seed.

L. PAILLET, NURSERYMAN, Chatenay, near Paris, offers for the present season, from his own growth, and cropped on the very best varieties known, seeds of the said BEGONIAS at the following rates:—Per packet containing 1 gramme, 6s.; per packet containing 5 grammes, £1 5s.

Seeds of CLEMATIS, cropped on the best varieties known, such as Helena, Sophia, Jackmanni, lanuginosa, Lady Bovill, magnifica, and others:—Per packet containing 30 grammes, 8s.; per packet containing 100 grammes, £1 4s. (One gramme represents 1-28th of an ounce.) CLEMATIS from Seed, fine mixed varieties of all kinds, 3 to 4 years old, £2 per 100.

N.B.—Orders may be addressed directly to L. PAILLET, or his Agents, Messrs. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C., where CATALOGUE and List may be had on application.

DAVID LLOYD AND CO. (LIMITED).

CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.

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HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
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AGENTS WANTED.

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THOMAS METHVEN AND SONS have at present a large and very fine Stock of GRAPE VINES, thoroughly ripened, which they beg to offer at the following prices:—First size, 7s. 6d.; second size, 5s. each.

T. M. & Sons had the honour of supplying to the Gardens at Glamis Castle the Vines which have succeeded so admirably under the management of Mr. Johnston; and their present Stock is raised from eyes taken from these famous Vines.

Leith Walk Nurseries, Edinburgh.

CHOICE SEEDS, &c.—

CUCUMBER, Beauty of St. Albans, the best of the Telegraph section, 1s. 6d. per packet
" Telegraph, true stock, 1s. per packet.
" Duke of Edinburgh (Daniels), 1s. per packet.
SOLANUM CAPSICASTRUM, hybrids, from plants selected from the three best stocks in Covent Garden, 6d. and 1s. per packet.
LOBELIA PUMILA MAGNIFICA, 1s. per packet.
CELOSIA PYRAMIDALIS, saved from Mr. R. S. Yates' fine strain, 6d and 1s. per packet.
LOBELIA PUMILA MAGNIFICA, seedling plants, 5s. per 100; plants from cuttings, 12s. 6d. per 100.

All orders prepaid.

J. BESTER, White Hart Lane, Tottenham, N.

Special Offer to the Trade.

FRUIT TREE STOCKS FOR SALE in IMMENSE QUANTITIES.

L. PAILLET, NURSERYMAN, Chatenay, near Paris, informs his Customers that he can supply for the present season any orders with which he may be entrusted, at the following prices:—

QUINCE STOCKS, extra fine, £1 8s. per 1000, £13 per 10,000; No. 1, £1 per 1000, £9 per 10,000.
PEAR STOCKS, 1 or 2-yr. old, extra, 1 to 2 feet, £13 per 10,0000; do. No. 1, 8 and inches up to 1 foot, £8 per 10,000.
" " transplanted, good, £15 per 10,000. [10,000.
APPLE STOCKS, 1-yr., splendid, extra, 2 to 3 feet, £13 per " " Doucin, splendid, extra, from layers, 2 to 3 feet, £13 per 10,000.
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PLUM STOCKS, real St. Julien, 1-yr., extra, 1 to 2 feet, £14 per 10,000; do. No. 1, 8 and 9 inches up to 1 foot, £10 per £10,000. (N.B. St. Julien is the best Stock for grafting Peaches and Apricots.)
" " real St. Julien, from layers, extra transplanted, £20 per 10,000; do. No. 1, do., £12 per 10,000. (N.B. St. Julien, real, from layers, is the best Stock to make fine and clean standards.)
" Myrobolant, extra, £10 per £10,000. No. 1, £4 per 10,000.
MAHALEB STOCKS, St. Lucie, extra fine, 1½ to 2 feet, £5 per 10,000; No. 1, 8 and 9 inches to 1½ foot, £4 per 10,000.
CERASUS AVIUM (common Cherries for Stocks), fine, extra, and strong, 1 to 2 feet, £10 per 10,000; No. 1, 8 and 9 inches to 1 foot, £6 per 10,000.

L. PAILLET offers also a splendid lot of
PEACH TREES, 1-yr. old, grafted, best sorts, at £22 per 1000; the trees are from 5 to 6 feet high.
PLUM TREES, Standards, very fine and clean, very straight, grafted, all 5 feet 2 inches high, with fine heads, £5 10s. per 100; stronger size, £7 to £10 per 100.
FRUIT TREES of kinds, 1-yr. and 2-yr., grafted, large assortment of Pears, Peaches, and Apricots—all trees formed or trained on French system for wall culture, or *contre-espalier*.
ROSES, assortment of immense quantities of fine Standards, £34 per 1000; own roots, Souvenir de Malmaison and others, £14 per 1000.
WELLINGTONIA GIGANTEA PENDULA, new; and
" " AUREA VARIEGATA, new. (For Prices see Catalogue and List.)
POTATOS, French and American.

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FIRST PRIZE ROSES,

FROM

CRANSTON'S NURSERIES, HEREFORD.

Try our One Guinea, Two Guinea, and Three Guinea Collections.

ONE GUINEA COLLECTION contains Thirty Selected First-class Show Roses.

TWO GUINEA COLLECTION contains Sixty Selected, Distinct, and all First-class Show Roses.

THREE GUINEA COLLECTION contains One Hundred of the Finest Roses, New or Old, in cultivation, Selected from upwards of 600 Varieties.

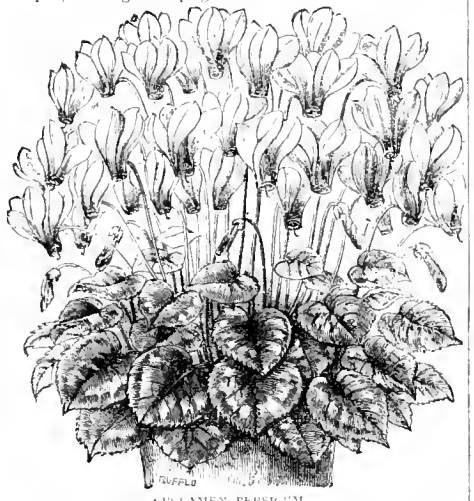
Either of the above Collections will be carefully packed and forwarded, on receipt of Cheque or Post-office Order payable to

CRANSTON & MAYOS, HEREFORD.

N.B. Upwards of Fifty First Prizes, including the 25 Guinea Silver Challenge, open to all England, were awarded to us in 1875.

B. S. WILLIAMS' Choice FLOWER and VEGETABLE SEEDS for 1876:—

	Per Packet.—s.	d.
BEANS, Williams' Early Prolific Dwarf French, in sealed half-pints	1	6
BRUSSELS SPROUTS, Welch's Giant, one of the finest in cultivation	1	0
CUCUMBER, Tender and True	2	6
" Osmaston Manor (new), one of the Finest Varieties, either for Summer or Winter use; 26 to 32 inches long, very prolific	2	6
MELON, Osmaston Manor Hybrid (new), a splendid Green-fleshed Variety, beautifully netted, globular in form, and of delicious flavour	2	6
ONION, Williams' Magnum Bonum, the heaviest cropping and longest keeping Onion in cultivation ..	1	6



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CHOICE FLOWER SEEDS.

	Per Packet.—s.	d.
BALSAM, Williams' Superb Strain .. .. 2s. 6d. and	1	6
BEGONIA FRŒBELII (new).—This is a new and distinct species	2	6
CYCLAMEN PERSICUM, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
CELOSIA PYRAMIDALIS PLUMOSA	1	6
CALCEOLARIA, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
CINERARIA, Weatherill's Extra Choice Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
GLOXINIA, Finest Drooping Varieties	1	6
" Finest Erect Varieties	1	6
PRIMULA, Williams' Superb Strain, Red, White, or Mixed .. .. .. 5s., 3s. 6d., 2s. 6d., and	1	6
PYRETHRUM GOLDEN GEM	1	0
STOCK, Williams' Improved Giant Scarlet Brompton ..	1	6
WALLFLOWER, Harbinger, Autumn and Winter Flowering	1	0

Illustrated SEED CATALOGUE gratis and post-free on application.

Packets of Flower Seeds, excepting heavy kinds, Free by Post.

FREE DELIVERY.—All Orders for Seeds, amounting to £1 and upwards, will be delivered, Free of Carriage, to any Railway Station in ENGLAND; and all Orders of £2 or more in value, to any Railway Station in SCOTLAND or WALES, and any Steam Port in IRELAND.

VICTORIA AND PARADISE NURSERIES, Upper Holloway, London, N.

RHODODENDRONS.

FINE NAMED LEADING KINDS, 1½ to 3½ feet, from £7 10s. to £10 10s. per 100.
HYBRID SEEDLINGS, leading kinds, 1½ to 3½ feet, from 50s. to 75s. per 100.
ANDROMEDA FLORIBUNDA, 1 to 2 feet, from 50s. to 60s. per 100.
KALMIA LATIFOLIA, 1 to 2 feet, from 50s. to 60s. per 100.
AZALEA PONTICA, 1 to 2 feet, from 60s. to 75s. per 100.

All the above are very fine bushy, well grown plants, and are offered very cheap to effect a clearance.

CHARLES NOBLE, BAGSHOT.

Ex. Ex. Choice Prize Flower Seeds.

Each 1s. per packet, post-free.

JOHN SCOTT, The Seed Stores, Yeovil, has to offer:—ASTER, French Perfection, 18 vars., do. Dwarf Bouquet, 8 vars.; STOCKS, Giant, Dwarf Ten-Weeks; HOLLYHOCK, 8 vars.; PETUNIA, 12 vars.; PHLOX DRUMMONDII, 12 vars; WALLFLOWER, double; ZINNIA, double; CALCEOLARIA, dwarf, 20 vars.; CINERARIA; PRIMULA SINENSIS, 8 vars.; POLYANTHUS; DOUBLE SWEET WILLIAM; DOUBLE CONVOLVULUS MINOR.

The above are not to be surpassed.

SELECT GERANIUMS.

12 Choice GOLDEN TRICOLORS,
6 SILVER TRICOLORS.
The 18 varieties for 8s.
12 GOLD and BRONZE, good, 4s.
12 Good ZONALS (Pearson's).
6 Good ZONALS (Denny's).
The 18 varieties for 6s.

The above, strong plants, post-free.

WM. POTTEN, Camden Nursery, Sissinghurst, Staplehurst, Kent.

SNOWFLAKE POTATO—Having grown and imported largely of this splendid new variety, we can offer FINE ENGLISH-GROWN SEED, price 6d. per lb.; 6s. per peck of 14 lb.; 21s. per bushel of 56 lb. Much cheaper by the sack or ton.

FINE IMPORTED TUBERS, same price. Orders of 21s. and upwards carriage paid.

P. M'Kinlay, Esq., Beckenham, a well-known authority, writing of this Potato in the *Gardeners' Magazine*, Jan. 15 last, says:—"My experience with American varieties has been somewhat extensive, and I find that they generally improve as they become acclimatised. . . . . I have no doubt Snowflake will improve in quality, and will become one of the best in cultivation"

DANIELS BROTHERS, Seed Growers, Norwich.

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SANDY AND SON beg to offer the following articles, of which they hold large stocks: all are well grown and finely rooted:—

LAURELS, Common, 3 to 4 feet, very bushy and fine, £1 per 100; £7 10s. per 1000.
PRIVET, Box-leaved, 1½ to 2 feet, very bushy and fine, £1 10s. per 1000.
MAHONIA (Berberis) AQUIFOLIA, 1 to 1½ foot, very bushy and fine, £2 per 1000.
COTONEASTER SIMONSII, 3 to 4 feet, transplanted, very bushy and fine, 10s. per 100, £4 per 1000. A splendid plant for coverts.
POPLAR, Lombardy, transplanted spring, 1875, 6 to 8 feet, 12s. per 100.
" Black Italian, transplanted spring, 1875, 6 to 8 feet, 12s. per 100.
HOLLYHOCKS, fine, in pots, £2 10s. per 100.
ADIANTUM CONCINNUM LATUM, 3-inch pots, £2 per 100
" DECORUM, 3-inch pots, £2 per 100.
STATICE HOLFORDII, strong, 4 inch pots, 36s. per dozen.

The Nurseries, Stafford.

HANDSOME LAWN TREES and EVERGREENS.

PICEA MAGNIFICA, true, 2 to 5 ft., 21s. each and upwards.
P. AMABILIS, true, 2 to 3 feet, 10s. 6d. each and upwards;
P. NOBILIS, 1 to 6 feet, 2s. each and upwards; P. NORDMANNIANA, selected varieties, 5 feet, 7s. 6d. each and upwards; P. PARSONSI, 4 to 10 feet, 12s. each and upwards;
P. NOBILIS GLAUCA, 2 to 5 ft. 7s. 6d. each and upwards.
CUPRESSUS LAWSONIANA, in fine selected variegated and other varieties.
RETINOSPORA, in great variety, variegated and others.
THUJA, CUPRESSUS, CEDRUS, and ABIES, in many varieties, and nearly every variety of CONIFERÆ, offered at very low prices, to effect a clearance.

Some of the above, being selected seminal varieties, are very magnificent specimens. They have been carefully transplanted and grown for Sale. Application, either personally or by letter, at The Gardens, Whitchurch Rectory, Edgware, N.W., will receive every attention.

CERASUS LAURO-CERASUS CAMELLIÆFOLIA (the Camellia-leaved Laurel).—

This extraordinary and elegant Laurel was raised by Mr. Wood, of Woodbridge, in Suffolk, on whose behalf we are now offering it for the first time to the public. The leaves are light green, like the common Laurel, but differ from it in shape in being elegantly curled, like a Camellia leaf, or more closely resembling in form the beautiful Croton volutum.

The effect of the plant, grown as a pyramid and well pruned, is peculiarly striking, and if planted close as an edging plant, and pinched well back, it produces a very neat and pleasing appearance.

We propose to distribute this well-known variety at the following low prices, being desirous of seeing it largely used, as it deserves to be, for the purposes above-mentioned:—Per plant, 5s.; per dozen, 42s. Special offer to the Trade.

J. AND C. LEE, Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

Tagetes plena aurea—the Finest Bedder, Battersea.

GEORGE SMITH, FLORIST, &c., 61, Penrose Street, Walworth, S.E., having saved fine Seed of the above, can supply it at 1s. per packet; fine strain of PETUNIA, 6d.; PYRETHRUM, Golden Gem, 6d. per pkt.; WALLFLOWER, very dark, 6d.; CLOVES, fine, 3s. per dozen; PERPETUAL CAMPANULA, double white, 3s. per dozen; FUCHSIAS, fit for specimens, strong, named, single pots, 2s. per dozen. Cash.

GAME COVERTS.

If you want plenty of Pheasants and a grand Covert plant the following:—

1000	EVERGREEN PRIVETS, best kinds for Game..	
1000	SNOWBERRY, 4 feet, the Pheasant's favourite ..	
1000	BEECH, bushy, 2 to 3 feet	
500	MAHONIAS, of sorts, 2 feet	
250	COMMON LAURELS, 2 to 3 feet	
250	PORTUGAL LAURELS, 2 to 3 feet	
250	YEW TREES, strong and bushy	
250	TREE BOX, strong and bushy	
250	COTONEASTER SIMONSII, bushy	
250	SPRUCE FIRS, strong and bushy	

} for £25, packing free.

Apply to W. JACKSON AND CO., Nurseries, Bedale, Yorkshire.

Mulberries.

March and April are the two best months for Transplanting.

KINMONT AND KIDD have a large and very fine stock of these to offer, with fine clean stems and excellent heads, which they are prepared to Dispose of to the Trade and others on very liberal terms. Particulars on application. Also a few hundred YUCCA RECURVA, cheap.

Exotic Nursery, Canterbury.

For the Farm or Garden

CABBAGE PLANTS, superior Bedfordshire-grown :- Early Enfield, York, and Nonpareil, at 3s. per 1000; Robinson's Champion Drumheads, at 4s. per 1000; Red Dutch Pickling, at 5s. per 1000 (supplied in any quantities) Early Longpod BEANS, at 8s. 6d. per bushel; common Windsors, at 10s. per bushel. Forcing and Planting ASPARAGUS PLANTS, at 2s. 6d. to 7s. 6d. per 100. Double Scarlet DAISIES, at 2s. 6d. per 100; splendid large Crown Daisies, 5s. per 100. Terms, cash with orders. SEED POTATOS, and all other Seeds of best quality, at lowest prices. CATALOGUES, &c., on application to FREDERICK GEE, Seed Grower, &c., Biggleswade, Beds.

Extraordinarily Cheap Forest Trees, Fruit Trees, And QUICKWOOD

WITTY AND SON, The Nurseries, Cottingham, Hull, offer as under :—

LARCH, 18 inches to 2½ feet, 20s. per 1000.
APPLES, strong Maidens, 20s. per 100.
PEARS, strong Maidens, 20s. per 100.
PLUMS, strong Maidens, 25s. per 100.
QUICKWOOD, strong, 12s. 6d. per 1000.
ASPARAGUS, 1 yr., fine, 10s. 6d. per 1000.

The above are all in fine condition, and must be sold on account of the ground having to be cleared.

Begonia octopetala

W. THOMPSON, SEEDSMAN, Tavern Street, Ipswich, begs to offer Seed of the above handsome tuberous-rooted species of Begonia, producing large white flowers. Price, 1s. 6d. per packet.

His SEED CATALOGUE for the present season will be found to contain many exclusive rarities, and will be sent free on application.

LARCH, 1½ to 2½ feet, 20s.; SPRUCE, 1½ foot, 12s.; SCOTCH, 1½ foot, 12s. OAK, 3 to 4 feet, 15s. per 1000. All very good.

J. JACKSON, Nursery, Kidderminster.

TO THE TRADE.—STANDARD ROSES, fine heads, best sorts, 65s. per 100.

J. JACKSON, Nursery, Kidderminster.

FOR SALE, 100 GUINEA COLLECTIONS of CHOICE FLOWER SEEDS, especially prepared for this spring. Price 5s., each if the lot are taken. A splendid chance for any one purchasing to sell again. Each Collection contains 100 packets. List of contents sent on application, or specimen Collection on receipt of 3s. in stamps. Address,

P. K. T., High Wycombe.

RICHARD SMITH'S SEED LIST

CONTAINS

THE BEST KINDS

OF

VEGETABLE

AND

FLOWER SEEDS,

and forwarded Free on application.

SMITH'S No. 1 COLLECTION	£3 3 0
SMITH'S No. 2 COLLECTION	2 2 0
SMITH'S No. 3 COLLECTION	1 11 6
SMITH'S No. 4 COLLECTION	1 1 0
SMITH'S No. 5 COLLECTION	0 15 0
SMITH'S No. 6 COLLECTION	0 12 6
EXTRA LARGE COLLECTIONS from	£5 5s. to 10 10 0

The above are liberally and judiciously selected, and forwarded carriage free, excepting Nos. 5 and 6.

	Per packet.—s. d.
CUCUMBER, Smith's Fine Long Frame	1 0
,, Monro's Duke of Edinburgh	1 6
CAULIFLOWER, Veitch's Autumn Giant	1 6
CELERY, Sandringham Dwarf White	1 0
CABBAGE LETTUCE, Worcester Champion	1 0
COS LETTUCE, Worcester White	1 0
MELON, Eastnor Castle Green-flesh	1 6
,, Queen Emma	1 0
ONION, The Banbury	1 0
CYCLAMEN PERSICUM, splendid large flowering	1 0
POLYANTHUS, choice gold-laced	1 0
ASTER, Truffaut's French, 12 splendid colours	1 0
,, Victoria, 10 splendid colours	1 0
,, Betteridge's Globe Quilled, 12 splendid colours	1 0
GERMAN STOCK, large flowering, 12 splendid colours	1 0
PHLOX DRUMMONDII, 12 colours	1 0
PRIMULA, finest fringed	1s. 6d. and 2 6
CINERARIA, saved from finest flowers	1s. 6d. and 2 6
CALCEOLARIA, finest rich spotted	1s. 6d. and 2 6
CENTAUREA CANDIDISSIMA	1 0
PYRETHRUM, Golden Feather	0 6
ZINNIA, double, 8 colours mixed	0 6

The above Free by Post.

RICHARD SMITH, Seed Merchant, Worcester.

FIVE HUNDRED ODONTOGLOSSUM CRISPUM (ALEXANDRÆ).

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, March 6, at half-past 12 o'Clock precisely, 500 imported Plants of ODONTOGLOSSUM CRISPUM (ALEXANDRÆ), and 400 ODONTOGLOSSUMS of VARIOUS SORTS, imported, without names, from the mountainous districts of the United States of Colombia.

On view the morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

Important Sale of Cattleya gigas and Odontoglossum vexillarium.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, March 13, at half-past 12 o'Clock precisely, imported Plants of the rare and most lovely Odontoglossum vexillarium, Cattleya gigas, Uropedium Lindeni, just received by R.M.S.S. *Nile*; also splendid Established Plants, many of them in Flower, of Phalænopsis amabilis, P. Schilleriana, P. roseus, P. Luddemanniana, P. grandiflora, P. leucorrhoda, Dendrobium Wardianum, D. crassinode, D. Falconeri, Cymbidiums, Vandas, &c.

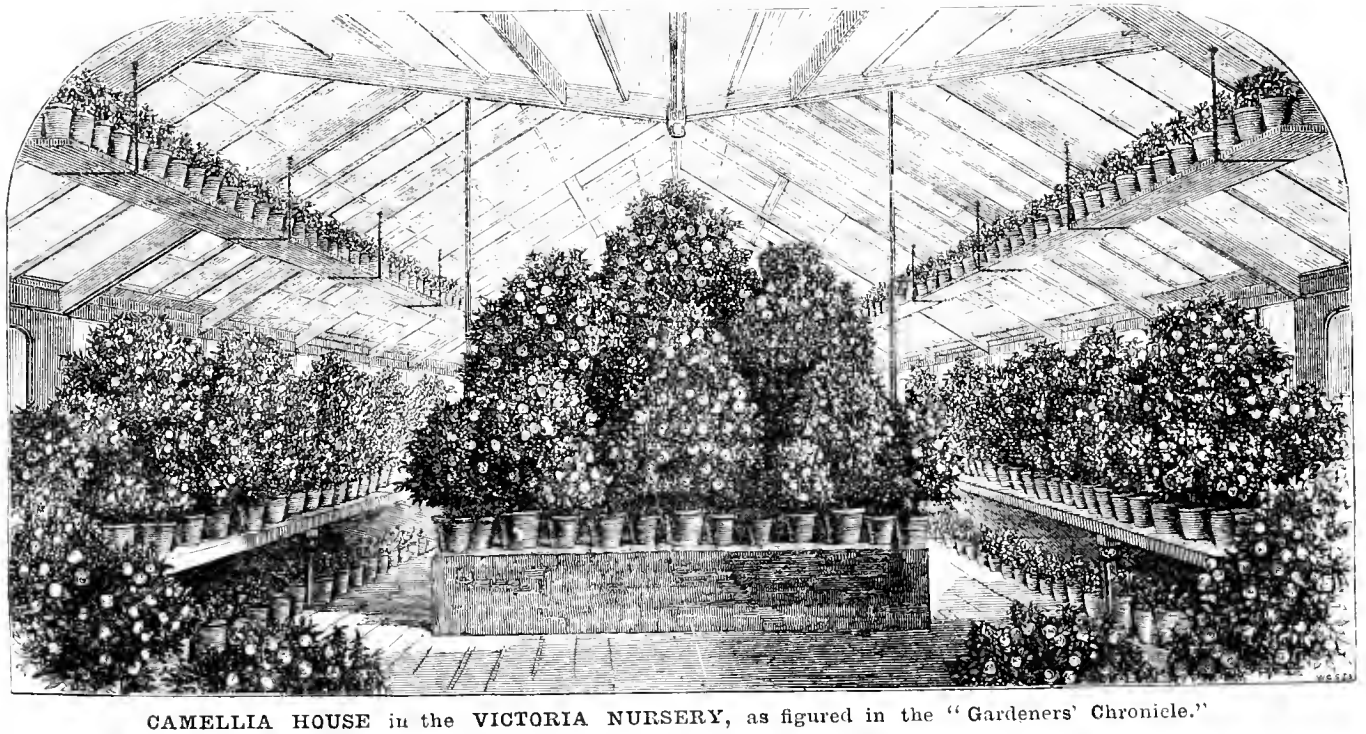
The CATTLEYA GIGAS and ODONTOGLOSSUM VEXILLARIUM are worthy of special attention, the Plants of this grand Odontoglossum being by far the finest hitherto offered, and in the best possible condition, the leaves and young breaks being fresh and green.

On view the morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

B. S. WILLIAMS

Respectfully invites his Patrons and the General Public to an inspection of his splendid stock of CAMELLIAS, now coming into bloom, which includes all the best leading varieties.



CAMELLIA HOUSE in the **VICTORIA NURSERY**, as figured in the "Gardeners' Chronicle."

Cyclamen, Primulas, Cinerarias, and other Spring-flowering Plants are now in full bloom.

VICTORIA and PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N.

Centaurea candidissima, or Ragusina.
WHOLESALE PRICE.

WOOD AND INGRAM offer fine summer sown plants of the above, thoroughly established in thumb pots, at 20s. per 100; package, 3s. 6d. per 100, or 2s. for 50, not less than which will be sold at the price
The Nurseries, Huntingdon.

To the Trade.

POTATOS.—Paterson's Victoria, Queen, Early Vermonts, Early Rose, Hundredfold Fluke, Paterson's Seedling Flukes, King of the Earlies, Snowflake, Redskin Flour Balls, Robson's Challenge, Brownell's Beauty, Princess of Lorne, at very low prices, by the ton or cwt. Apply to
COCKS BROS., Monk's Hall, Gosberton, Spalding.

A BARGAIN is offered in a lot of very extra strong BLACK HAMBURGH VINES, which must, on account of alterations, be moved out of a border in which they were planted to be fruited this year. They have never borne a berry, and would ripen 20 lb. to 30 lb of fruit well. Strong Canes, with splendid healthy roots, 10s. 6d. each.
L. WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

ROBERT NEAL, Jun., and GEORGE NEAL, Nurserymen, Wandsworth Common, S.W., beg respectfully to call the attention of Gentlemen and Others who are planting this Spring to their large and varied stock of HARDY SHRUBS, FRUIT, FOREST, and ORNAMENTAL TREES, &c., which are now in fine condition for transplanting. An early inspection invited.
CATALOGUES may be had on application.

A. M. C. JONGKINDT CONINCK'S MAIDEN FRUIT TREES are extra strong, and all fit for Cordons. The greatest care has been taken to have the sorts true to name.
A great quantity of ROSES can be had very cheap.
WANTED, AZALEA PONTICA, fit for grafting this autumn. Send priced samples by post.
Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving Size, Price, Popular and Botanical Names, Derivations, Description, Form, Colour, Foliage, Growth, Timber, Use in Arts, Native Country and Size there, Situation, Soil, and other information, with copious Index of their many Synonyms Free by post for six stamps.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

Cheap Gladioli from Paris—Named and Seedlings.

LÉVÊQUE AND SON, Nurserymen, Ivry-sur-Seine, near Paris, have a large and splendid stock of good and strong flowering bulbs of GLADIOLI SEEDLINGS, equal in flower to the collection, at 8s. per 100, £3 per 1000, and £26 per 10,000—mixed, white, red, and pink; per colour, 12s. to 20s. per 100; yellow, 24s. per 100; per names (100), ten sorts, 8s. per 100; 25 sorts, 14s. per 100; in 50 or 100 sorts, the best, from £1 to £6, less or more, according to the novelty of the sorts. All good flowering bulbs. English cheque on London, or Post-office Order on Paris, accepted in payment.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000; and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.
Wonersh Nursery, Guildford, Surrey.

Abies excelsa aurea (the Golden Spruce).

MESSRS. J. AND C. LEE beg to announce that they now intend to send out this magnificent tree. When planted in the full sunlight the whole tree is suffused with the richest gold. First-class Certificate from the Floral Committee of the Royal Horticultural Society. Well-established plants, 21s. each. A few of extra sizes, 31s. 6d. and 42s. each. The usual allowance to the Trade.
Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

The New Japan Apple.

PYRUS MAULEI, is now distributing, at 21s., 15s., and 10s. 6d. each. It is as hardy as the common Apple, blossoms at the same time; the flowers are of a vivid orange-scarlet, fruit of a bright transparent lemon colour, very fragrant, about the size of the Golden Pippin Apple, which is produced in the greatest profusion.
The jam of this season has been tasted by some of the best judges and connoisseurs, and pronounced exquisite, and perhaps superior to any English or foreign fruit.
W. MAULE AND SONS, The Nurseries, Bristol.

HOWCROFT AND WATKINS (late Charlwood & Cummins), Seedsmen, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of
WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

Violas.

The most fashionable and hardiest Bedding Plants of the day.

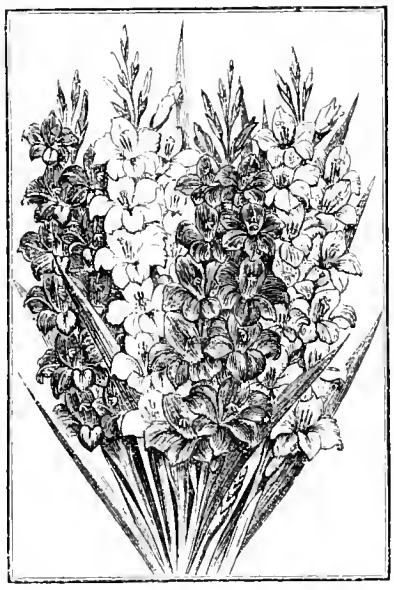
DICKSONS AND CO., Nurserymen and Seedsmen, 1, Waterloo Place, Edinburgh (established upwards of a century), are now sending out well-established Plants of the following first-class Bedding VIOLAS and PANSIES, which have been so favourably noticed in all the leading Horticultural Journals, and have received numerous First-class Certificates at the Royal Horticultural Society's Gardens, Chiswick, as well as at the principal Flower Shows throughout the country:—Alpha, Blue King, Chieftain, Dicksons' Queen, Golden Gem, Grievei, Illacina, pallida, Peach Blossom, Sovereign, stricta alba, The Tory, White Perfection, and all the best varieties in cultivation, including the new sorts to be sent out this spring. Also a full Collection of all the best SHOW and FANCY PANSIES, and of the choicest EARLY and LATE PHLOXES, including the new varieties of this season. Special Prices for large quantities.
DESCRIPTIVE CATALOGUE on application.
New Nurseries, Pilrig Park, Edinburgh.

THE ROYAL NORFOLK SEED ESTABLISHMENT
ESTD 1844.

DANIELS BROS.'

CHOICE GLADIOLI FOR 1876.

Our Collection of choice named Gladioli is one of the most varied and extensive in the United Kingdom, and comprises many thousands of the newest and best varieties in commerce. A fully descriptive list is published in our "Illustrated Guide for Amateur Gardeners," and will be forwarded gratis and post-free to all intending Purchasers.



Choice Named Gladioli,

In Collections carefully arranged to ensure a fine variety of colour.

100 in 50 choice vars.	£5	0	0	24 in 12 fine named sorts	£1	1	0
50 in 50 choice vars.	2	15	0				
50 in 25 fine sorts ..	2	10	0	24 in 12 superb exhibition vars. ..	1	0	0
25 in 25 fine vars. ..	1	10	0				
50 in 25 superb exhibition vars. ..	3	10	0	12 in 12 fine named sorts	0	12	0
25 in 25 superb exhibition vars. ..	1	17	6	12 in 12 good named vars.	0	9	0
24 in 12 superb exhibition vars. ..	1	15	0	12 in 12 popular sorts	0	6	0

Gladioli in Mixtures.

Per dozen—s. d.		Per dozen—s. d.	
White ground varieties ..	4 0	Brilliant Scarlet and Dark Red	4 0
Rose and Light Red varieties	4 0	Yellow ground	5 0

Choicest mixed, all colours, per dozen, 3s; per 100, 20s.; per 1000, 160s.

From Mr. Wm. Low, *Head Gardener to* His Grace the Duke of Grafton, *Euston Park, Thetford, Oct.* 20, 1875.

"The collection of Gladioli you supplied us with last spring I am very pleased to say, turned out to my entire satisfaction. Your selection was rich and varied and altogether excellent, not an indifferent flower amongst them. They were much admired by the family."

The Illustrated Guide for Amateur Gardeners,

Containing 100 pages of beautifully illustrated Letterpress, two superb coloured Plates, and Original Articles on the successful Management of the Flower and Kitchen Garden throughout the year. This is at once the most beautiful Seed Catalogue and the best Guide for the Amateur ever issued.

Gratis and post-free to all intending Purchasers.

DANIELS BROS.
Seed Growers
NORWICH.

CHOICE HYBRID GLADIOLI.
The Gladiolus being a special feature in our business, we respectfully invite Growers of this magnificent Autumn Flower to send for our CATALOGUE of Prize Varieties before making their annual purchases. In it all the best sorts are described, and the prices quoted are very moderate.
ROBERTSON AND GALLOWAY, Seed Merchants and Nurserymen, 157, Ingram Street, Glasgow.

FOREST TREES for SALE.
LAURELS, Common, 1 yr., 9 to 12 inches; do., 2-yr., 1½ to 2 feet.
EVERGREEN PRIVET, 2 to 2½ feet.
LAURUSTINUS, furnished, 2½ feet.
SPRUCE FIRS, 12 to 18 inches; do., 2½ to 3 feet.
LARCH, 2-yr., 1-yr. transplanted, 8 to 20 inches.
SWEET BAYS, 2½ to 4 feet, furnished; do., 2 to 3 feet.
WYCH ELM, 3 to 4 feet; do., 4 to 6 feet.
MICHAEL FLYNN, Sunningdale Nursery, Clonmel.

Australian Plants and Seeds.

EUCALYPTUS GLOBULUS, PALMS, CYCADS, FERNS, and all kinds of PLANTS and SEEDS indigenous to Australia, Fiji, &c., supplied on the most reasonable terms. Priced CATALOGUES and Special Quotations on application.
SHEPHERD AND CO., Nurserymen and Seedsmen, Darling Nursery, Sydney, New South Wales. (Established 1827.)
Agents: Messrs. C. J. BLACKITH AND CO., Cox's Quay, Lower Thames Street, London, E.C.

AVENUE TREES.

Girth 4 ft. from ground.			
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10	inches.	
PLANES, Occidental, true, 12 to 15 feet high	5 to 8	,,	
MAPLES, Norway, 12 to 16 feet high ..	5 to 8	,,	
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10	,,	
,, Scarlet, 10 to 14 feet high	8 to 10	,,	
,, Double, 10 to 14 feet high	8 to 10	,,	
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10	,,	
ELMS, 15 to 18 feet	7 to 9	,,	

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.
Knap Hill Nursery, Woking, Surrey.

New and Genuine Seeds Only.

Now ready, gratis and post-free,

BRUNNING AND CO.'S New Illustrated and DESCRIPTIVE CATALOGUE of the above for the present season, containing a selection of the choicest novelties, together with the most approved older varieties, profusely Illustrated, and contains a splendid Coloured Plate representing a group of choice Hybrid Gladioli, for the growth of which their Nurseries are noted. Forwarded post-free to all applicants.
ISAAC BRUNNING AND CO., The Yarmouth Seed Establishment, 1, Market Place, Great Yarmouth.

REDUCTION OF PRICES for Grashoff's First-class Novelties.
RHODANTHE MANGLESII, flore-pleno (Prince Bismarck), with flowers extra double. First quality, 10 grammes, 35s.; 1 gramme, 4s.; 100 seeds, 1s. Second quality, 10 grammes, 18s.; 1 gramme, 2s.; 100 seeds, 6d.
RHODANTHE MINOR COMPACTA MULTIFLORA, 10 grammes, 16s.; 1 gramme, 2s.; 100 seeds, 6d.
Prices lower for larger quantities. Carriage free.
MARTIN GRASHOFF, Seed Grower and Seed Merchant, Quedlinburg, Germany (Prussia).

HARDY AZALEAS for POTTING and FORCING.—Choice Belgic, American, and other hardy Azaleas, together with RHODODENDRON FRAGRANS and AZALEA AMŒNA are offered in nice compact plants, well set with bloom-buds, at 18s. and 21s. per dozen. Few plants are more acceptable for furnishing Cut Flowers or decorating the Conservatory throughout the early spring.
WM. MAULE AND SONS, The Nurseries, Bristol.

Vines. Vines—Dwarf Roses.

PLANTING and FRUITING CANES of Black Hamburgh, Black Alicante, Lady Downe's, Muscat of Alexandria, Madresfield Court, Gros Colman, Mrs. Pince, Trentham Black, Buckland Sweetwater, Foster's Seedling, Dr. Hogg, Muscat Hamburgh, Royal Muscadine, and West's St. Peter's, 2s. 6d. to 5s. each; Waltham Cross, 5s. to 7s. 6d. each; Pearson's Golden Queen, 21s. to 31s. 6d. each.
DWARF ROSES, extra strong, 6s. per dozen.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

AUSTIN AND MCASLAN, 16, Buchanan Street, Glasgow, beg to offer the following samples and prices on application:—
THORN QUICKS, 2½ to 3 feet.
BEECH, 2½ to 3 feet.
ENGLISH ELMS, 2½ to 3 feet.
OAKS, Common, 2½ to 3 feet.
LIMES, Red-twigged, 5 to 6 feet.
SPRUCE, 2-yr. seedlings, very fine.
TREE BOX, 1½ to 2 feet.
ENGLISH YEWS, 1½ to 2 feet.

SPECIAL OFFER.
GRAND STOCK.

FRUIT TREES.	FOREST TREES.
Kentish Cob Nuts	Catalpas
,, Filberts	Elms, four kinds
Morello Cherries, trained	Laburnums
Cluster Damsons	Limes, very stout
Grape Vines for outdoors	Mountain Ash
Mulberries	Poplars, Silver
Pears, dwarf trained	,, Lombardy
,, Standards	,, Ontario
,, 2-yr. and Maidens	,, Italian
Finely rooted and well-grown.	Thorns, of sorts
EVERGREENS.	CONIFERÆ.
Aucubas—Arbutus	Biota elegantissima
Rhododendron ponticum, bushy	Juniperus sinensis
Magnolia grandiflora	Pinus austriaca
Evergreen Oaks	,, sylvestris
	Yuccas

Private Buyers and the Trade treated with. For Prices and particulars apply to
THOS. BUNYARD AND SONS, The Old Nurseries, Maidstone, Kent.

SEEDS OF SUPERIOR QUALITY.

WM. PAUL & SON'S
ILLUSTRATED CATALOGUE OF SELECT VEGETABLE AND FLOWER SEEDS, &c.,

Is now ready, and will be forwarded, post free, on application.

Many sorts are home-grown, and all are selected with the utmost care from the most celebrated Stocks at home and abroad, in order to secure for their Customers the BEST QUALITY THAT CAN BE OBTAINED.

IMPORTANT: Observe the Christian Name,

WM. PAUL & SON,

PAUL'S NURSERIES AND SEED WAREHOUSE, WALTHAM CROSS, **LONDON, N.**

GENUINE SEEDS.

JOHN & CHARLES LEE
(Seedsmen to the Queen),

Invite attention to their new and extensive

CATALOGUE OF SEEDS FOR 1876.

This Catalogue has been prepared with their usual care, and contains every Novelty—whether home-grown or foreign, with the most minute and useful descriptions of both

VEGETABLE AND FLOWER SEEDS.

The Prices of every article are the very lowest, considering the first-rate quality of the various stocks offered.

The long standing of the House of Lee (125 years) is a sure guarantee of the excellence of their Seeds and the soundness of their trading.

CATALOGUES MAY BE HAD, POST FREE, ON APPLICATION.

ROYAL VINEYARD NURSERY AND SEED ESTABLISHMENT, HAMMERSMITH, LONDON, W.

NOW READY,
NURSERY CATALOGUES FOR 1875-76.

WILL BE SENT POST FREE UPON APPLICATION.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),
EDINBURGH,

AND

54, BISHOPSGATE STREET WITHIN, LONDON, E.C.

BUSINESS ESTABLISHED, 1770.

TWELVE ACRES OF ROSES,

Standards and Dwarfs, all the popular sorts; 80,000 choicest Tea-scented and Noisette Roses, in pots. Extra strong Hybrid Perpetual Roses, in pots for immediate forcing. Climbing Roses in great variety. *See Descriptive Price List.*

FIFTY ACRES OF FRUIT TREES.

Standard and Dwarf-trained PEACHES, NECTARINES, APRICOTS, PLUMS, CHERRIES, PEARS and APPLES, very fine trees for walls.

Standard, Pyramid, Dwarf, Bush, and Cordon APPLES, PEARS, PLUMS, and CHERRIES.

VINES, Planting Canes, 3*s.* 6*d.* to 5*s.* each; Extra Strong Fruiting Canes, 7*s.* 6*d.* to 10*s.* 6*d.* each.

All the above of superior quality, perfect in form, roots, and health, and true to name. See Descriptive Price List.

RICHARD SMITH,
NURSERYMAN and SEED MERCHANT, WORCESTER.

To the Trade.

SEAKALE, for planting, very fine, 30*s.* per 1000. 10,000 COMMON LAURELS of all sizes, from 1 foot to 5 feet, price on application.

WM. WOOD & SON, Woodlands Nurseries, Maresfield, Uckfield, Sussex.

VINES.—A superior lot of fine CANES of all the leading sorts for Planting or Fruiting, will carry several fine bunches this year, 5*s.* each. L. W.'s system of packing saves half the cost of carriage.

LEWIS WOODTHORPE, Gidea Wood Nursery, Braintree, Essex.

JOSEPH SMITH, SEN., Tansley and Scotland Nurseries, near Matlock, Derbyshire, has for Sale:—

RHODODENDRON PONTICUM, 4-yr. old seedlings, not grown on bog, but on heath soil, with fine roots; stiff healthy plants, 3 to 4 inches high, 5*s.* per 1000. Also Hybrid Catawbiense, named sorts, 7*s.* 6*d.* per 1000; with transplanted, from 1 to 1½ foot up to 3 and 4 feet, at very low prices, which can be had on application.

OAKS, large quantity, 3 to 4 and 4 to 5 feet.

With a GENERAL NURSERY STOCK. Prices on application.

Prize Seeds.

WRIGHT'S GROVE and GIANT CELERIES and CUCUMBERS.

WRIGHT'S GROVE RED and GROVE WHITE CELERIES were awarded the First Prizes at the South Kensington Show on November 10 and 11, 1875; see *Gardeners' Chronicle* (p. 627), November 13. These have been proved to possess all the good qualities required in a first-class Celery. Per ¼ oz packets, 1*s.*

WRIGHT'S GIANT WHITE CELERY has a more robust habit and stronger growth than Grove White, combined with a fine flavour. It forms very solid hearts, which blanch easily. Heads have been grown weighing from 8 lb. to 10 lb. each. Per ⅛ oz. packets, 1*s.*

The following have secured supplies for the coming season:—

Hurst & Son, London.	C. & J. Lee, Hammersmith.
Dickson, Brown & Tait, Manchester	Samuel Yates, Manchester.
Sutton & Sons, Reading.	Laird & Sinclair, Dundee.
B. Crossland, Sheffield	E. Holmes, Lichfield
S. Finney & Co., Newcastle.	W. Smith & Son, Aberdeen.

CUCUMBERS.—Wright's Wonder, fine White-spine, and Wright's Improved Black-spine. These will grow 24 to 30 inches long, without neck or handle, are very prolific and of mild good flavour; fine for exhibition. Berks Champion, Improved Sion House, Masters' Early Prolific, Munro's Duke of Edinburgh, Long Gun, Telegraph. Per packet, 1*s.*

Cash with orders will have prompt attention. Trade price on application.

WILLIAM WRIGHT, Seedsman, Retford, Notts.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham, will be glad to send their CATALOGUE for this season on application. The stock of the undernamed, in best sorts and good plants, is very large and fine:—

	Per doz. *s. d.*	P. 100. *£ s.*
Antirrhinums	3 6	1 5
Ageratums	2 0	0 12
Chrysanthemums	3 0	1 0
Carnations and Picotees, single plants	6 0	2 5
,, pairs	11 0	3 15
Clematis	15 0	5 0
Calceolarias	1 0	0 8
Coleus	3 0	1 1
Carpet Bedding plants	1 6	0 10
Daisies, various colours	1 0	0 5
Fuchsias	3 0	1 0
Geraniums, tricolor	3 6	1 5
,, bicolor	3 6	1 5
,, Zonal and Nosegay in sorts for pots	3 0	1 1
,, autumn struck for bedding, out of pots	2 0	0 12
Heliotropes	2 6	0 18
Iris germanica	3 0	1
Lantanas	3 0	
Lobelias	1 0	0 6
Succulents	6 0	
Greenhouse plants 12*s.* to	18 0	
Stove plants, 12*s.* to	18 0	
Tree Carnations	12 0	

	Per doz. *s. d.*	P. 100. *£ s.*
Pelargoniums, 6*s.* to	9 0	
Herbaceous plants	3 0	1 0
Pelargoniums: Queen Victoria and Captain		
Rules	18 0	
Pansies, show	3 6	1 5
,, bedding	2 0	0 15
Pinks	3 6	1 5
Paeonies	12 0	4 10
Pentstemons	3 6	1 5
Pyrethrums	10 0	
Salvias	3 0	1 1
Sedums	3 0	1 1
Saxifrages	3 0	1 1
Violas	1 6	0 10
Violets	2 6	0 18
Roses, in pots, H.P.'s	12 0	4 10
Hardy Climbing plants, in pots	12 0	
Dactylis elegantissima	1 0	4 6
GrapeVines 30*s.* to 60	0	
Begonias	4 0	
Achimenes	2 6	
Dracænas terminalis and Cooperi	18 0	
Caladiums	15 0	
Epiphyllums	12 0	

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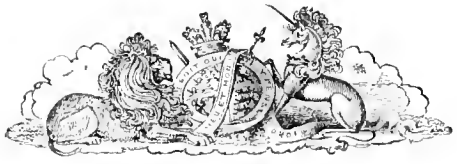

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SHEPHERDII,
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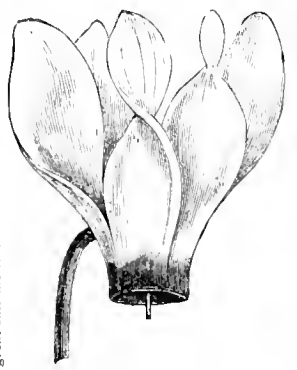

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HERBS AND HERBALISTS.

AMONG the numerous persons whose occupation is gone at the present day, the herbalist may to a great extent be included; not that there are wanting in country districts representatives of a class which was at one time a numerous and important one, but its importance is year by year becoming more and more a thing of the past, and in England, at any rate, the herb doctors are both "few and far between." Of course there are in many of our villages and country towns, as there will be to the end of time, good old women who make "Marsh-mallow tea" and other beverages of a similarly harmless if not efficacious description, just as in some of the suburbs of our large cities we still find a dirty brown window-blind bearing the words "Botanic Dispensary;" but the herb doctor may be set down as a thing of the past. Dr. Prior, in the preface to his book on popular plant names, gives us a description of one of the last of this class, who "was living some seventy or eighty years ago at Market Lavington, in Wiltshire," who, "if the weather permitted, would bring out his chairs and table, and seat his numerous patients on the hedgebank, and prescribe for them out-of-doors." His remedies were doubtless almost entirely derived from our wild plants; and Culpeper's *Herbal* would probably occupy to such a man the place of the British *Pharmacopœia*. This work, by the way, is still in great favour among the poor in country districts, and we remember, not long since, on asking a poor gardener what book we could send him from London, that Culpeper's *Herbal* was the work selected.

These reflections are brought under notice by the perusal of a paper entitled "Spanish Herbs and Herbalists" which appears in a recent number of the *Temple Bar* magazine, and from which we glean a few facts which are not without interest. The author writes "as an advocate for the herbs and the herbalists, having constantly made trial of both in times of illness, and always with a marked and unmistakable benefit."

The Lemon-plant, or sweet-scented Verbena of our English gardens (Aloysia citriodora), holds a foremost place among Spanish herbs. Every leaf of it is treasured and dried for winter use, and it is regarded as the finest cordial and stomachic in the world. It is taken in two ways—either made into a decoction with hot water and sugar, and drank cold as a *refresco* and tonic; or, better still, with the morning and evening cup of tea. "Put a sprig of Lemon Verbena, say five or six leaves, into the teacup, and pour the tea upon it; you will never suffer from flatulence, never be made nervous and old-maidish, never have cholera, diarrhœa, or loss of appetite. Besides, the flavour is simply delicious; no one who has once drank their Pekoe with, will ever again drink it without a sprig of Lemon Verbena."

Those of our readers whose gardens or fields are overrun with the troublesome "Couch" or "Twitch" grass (Triticum repens), may perhaps take a hint from the Spaniards as to turning it to some account. This is more used in Spain in decoctions or tea than any other plant, and this by both regular and irregular practitioners; it is known as *grama*, and is drunk by the patient all day in cases of fever, and is cooling and refreshing; it also promotes the proper functions of the bladder and bowels. This plant is used in such quantities that carts are laden with it; and it has the advantage of being marvellously cheap. Many drink a decoction of it, cold and sweetened with sugar, as a *refresco* during the summer.

The flowers of the Lime tree, which in some parts of France are in great request for making into a tisane, are largely employed in Spain in the manufacture of tea. With the poor women of Andalusia the tea made from them takes the place of the "dish of tea" of English wives and mothers. "The decoction is taken either hot or cold, and is said to be a sovereign cure for all slight affections of the nerves. Are you low-spirited, nervous, or suffering from a sudden shock or fright? Be sure any Spanish woman passing by will bring you two farthings' worth of *tila* from the nearest chemist's shop.

It is curious to find some of our old English superstitions flourishing on Spanish soil; but who can fail to see in the following paragraph a belief corresponding to that which our old herbals connect with the Moonwort (Botrychium Lunaria), and which gained for that plant the name of "Unshoe the Horse":—"There is an herb, the peasantry of the neighbourhood most gravely affirm, on the hills that rise near Medina Sidonia, which, if trodden upon by foot of horse or mule, causes—I presume by some corrosive juice contained in its leaf—the iron shoe to crack, and even burst. This belief is one deeply rooted in the minds even of shrewd and clever peasants, and I have found it a vain task to endeavour to combat it."

The following "curious botanical fact" is worth a note, if only as a means of ascertaining whether it is correctly stated, and if so, whether it is generally known. In some of the gardens near Rota the Cherry tree is grafted upon the red Plum tree, or *vice versâ*. The Plums and Cherries grown upon the same tree become, after a few years, well-nigh alike in size, shape, and colour; in fact, you can hardly tell the round Plum, degenerated in size, and altered to the Cherry's colour and appearance, from a large cherry. These fruits, which can be seen in the month of June from about the 6th to the 20th, are exposed for sale in the Callé San Francisco at Cadiz. They command a higher price than other fruit, and are greatly prized by the gardeners.

Space will not permit us to do more than indicate thus briefly the style and scope of the paper referred to. There is much in it, however, which will repay perusal, and a considerable amount of genuine information on the uses and properties of plants is scattered through it, and we therefore commend it to the notice of those interested in herbs and herbalists. *B. M.*

New Garden Plants.

CYPRIPEDIUM GNANTHUM, *n. hyb.**

This is a new hybrid between C. insigne × C. Harrisianum. It has dark green leaves, of rather thick texture, and of the usual shape. The peduncle is covered with dark hairs, and bears a single flower, not so large as that of a good C. Harrisianum. The upper, rather broad sepal is whitish green on base, with violet nerves, over which stand rows of blotches, just as is seen in C. insigne and its variety Maulei; the inferior sepal is whitish, with violet nerves, over which stand rows of blotches on the basilar parts of the nerves. Petals port-wine colour with a violet hue, yellowish white before the base and then with some dark blotches. Lip port-wine colour, staminode yellow-greenish. Ovary green with brown ribs. The statement of its being derived from C. insigne × Harrisianum has to be improved, inasmuch, as it is insigne Maulei × Harrisianum; yet the whole dif-

* *Cypripedium gnanthum*, n. h., Rchb. f.—C. insigne (Maulei) × Harrisianum: foliis ligulatis acutis apice minute tridentatis crassiusculis obscure viridibus; petiolo dense piloso unifloro; bractea ovarii dimidium haud æquante carinata acuta; sepalo summo oblongo limbo ciliolato postice puberulo, sepalo inferiori oblongo acutiusculo extus pilosulo; tepalis divaricatis ligulatis obtuse acutis ciliatis porrectis; labello conico saccato antice obtusangulo exciso utrinque angulato; staminodio flabellato postice exciso, antice trifido, lacinis lateralibus productis obtusangulis; lacinia media dentiformi multo breviori superficie gibberosa postice in ima basi pilosulo.

ference from Maulei is that its flower is smaller and bearing more white, which does not appear to be of great weight. It is a product of Mr. Seden's diligence; and for it I have to thank Messrs. Veitch. *H. G. Rchb. f.*

DENDROBIUM ENDOCHARIS, *n. hyb.**

This is again a hybrid of Veitchian origin. It is said by Mr. Veitch to be a very free grower. "The bulbs resemble much those of D. heterocarpum;" the flowers are in pairs, nearly as large as those of D. heterocarpum, but with broader milk-white petals; the lip is nearly that of D. moniliforme, Sw. (japonicum, Bat.), with projecting basilar lobes, and a series of short hairs interrupted by a line in the middle of the base, and a hairy surface to the disk; the side lobes are green, the hairy line ochre-colour; there are many short small purplish lines, and a great radiating purplish blotch at base and before the centre. The column is whitish green on the front side, with a middle keel as in D. heterocarpum. A proof of Mr. Seden's diligence, for which I have to thank Messrs. Veitch. *H. G. Rchb. f.*

FALLACIES IN FRUIT CULTURE.

THE importance of the subject of fruit culture will be ample apology for offering a few remarks on the paper read by Mr. Shirley Hibberd at the Society of Arts. I take the report in the *Gardeners' Chronicle* as correct, and containing the substance of the paper. I have read it over carefully several times, and I must candidly say I am disappointed with it. The paper is mainly directed to "the reconsideration of certain points wherein the cultivator, in Mr. Hibberd's opinion, puts himself into conflict with Nature, very much to his own disadvantage." Because a few writers have of late years said a great deal about the use of starving stocks for hardy fruits, he assumes that all "practical" pomologists give the preference to such stocks, and pinch and starve the trees to make them plentiful. Now this is the very contrary of the fact, for "practical" pomologists, when planting orchards of hardy fruits now-a-days, as they did before Mr. Hibberd was born, always prefer Apple, Pear, and Plum trees grafted on free stocks. Surely Mr. Hibberd must know that all the home-grown fruit that goes to Covent Garden Market is not the produce of starved dwarfed trees, and if he looks at the market gardens around London he can easily satisfy himself that all the fruit trees are not grown on starving stocks. Then, again, he must or ought to know that the quantity of Apple, Pear, and Plum trees on dwarfing stocks sent out annually by the nursery trade bears no comparison to the immense quantities sent out of trees on free stocks.

Mr. Hibberd's remarks about Oak and Beech trees are frivolous in the extreme. "Nobody," he says, "searches after a dwarfing stock for the Oak tree; nobody proposes to root-prune the Oak; nobody above the *status* of a lunatic practises pruning and pinching with a view to augment the production of Acorns." Has Mr. Hibberd ever known (or can he point out one that has) a large Oak tree that has borne a heavy crop of Acorns, for, I will say, ten years in succession? Is it not rarely that a large tree bears a heavy crop of Acorns two years successively? In the park here there are probably a greater number of large old Oaks than are in the same area of ground in any park in the country. There are also a great number of fine trees in other parts of the park, and as the kitchen garden and pleasure ground are a considerable distance apart, I, at some seasons of the year, in going from one to the other, pass sometimes four or five times a day a number of fine Oaks, and have noticed the crop of Acorns: a heavy crop is almost invariably followed by a failing one—and, be it observed, not through spring frosts, which are often made the scapegoat for many mishaps. Last year (1875) the Beech trees here were laden with extraordinary crops of mast. The trees looked as if dying; they made little growth, and the foliage was quite brown and small, owing to the quantity of mast. I do not remember ever to have seen any Beech trees look so bad. Now, I believe some of these trees will never recover the effects of the heavy crop of mast they bore last year, and it will be two or more years before many of them will bear another crop of mast. As Oak and Beech trees that send their roots deep and wide into the earth do not bear heavy crops of Acorns and mast year after year, so it is also with Apple, Pear, and Plum trees; these, when left to Nature, will not bear good crops of fruit year after year.

Mr. Hibberd seems surprised at the progress his ugly trees have made in six years in his experimental orchard. He says: "They have never been touched with the knife, and it is but fair to say that here and there a cross shoot might be cut out with advantage." If these model trees of Mr. Hibberd's are left to Nature, in the course of twenty-five years they will be great faggots of wood, laden to the ground one year with a heavy crop of fruit of inferior size and quality, scarcely worth the labour of gathering, and requiring two or three years' rest to recruit themselves for another heavy crop of worthless fruit. The great fault in the culture of hardy fruits in orchards is that too frequently the trees are left entirely to Nature. I am quite in accord with Mr. Hibberd as to the importance of planting in orchards trees on free stocks, but it is only by careful and judicious pruning that fruit trees are kept for a number of years in a bearing and satisfactory condition. Where moderate crops of fruit only are borne the trees carry regular crops year after year excepting always in very exceptional seasons.

Respecting dwarfing stocks, without subscribing to all that has been said about them, I think they are of great value to "practical" pomologists. Some of the finest Apples I have ever seen were grown on trees on the Paradise stock. Gardeners are, from necessity, sometimes obliged to grow Apples, Pears, and Plums in gardens, as it is not in all places there are orchards. In small gardens a few large trees will not only take up much space, but would also destroy all appearance of neatness and regularity in a garden; then there would be very little variety. With trees on dwarfing stock a great variety can be grown, the trees are easily kept in trim, and the fruit is almost always of first-rate excellence.

In the neighbourhood of all our great towns our merchants and tradesmen are constantly building beautiful residences; the grounds are often very limited, but there is almost always a garden, even though it be small. Trees on dwarfing stocks are most useful for all gardens of this kind, as fruit produced in one's own garden is much valued. In such gardens trees on free stocks would be altogether out of place. Then, apart altogether from the trees, there is the value of the orchard-house as a promenade during the foggy, damp weather we often have so long during the autumn and winter months. If people cannot go to Madeira, they can bring Madeira to their homes by building orchard-houses. Then there is the pleasure of watching the swelling and expansion of the buds; the pleasure and recreation, after several hours' application to business, of looking over each tree, watering it, and watching the growth of the fruit until fully matured. The growth of trees on dwarfing stocks for these purposes is a great public benefit, and in no respect interferes with the growth of trees on free stocks for orchards and other purposes where there is plenty of ground of a suitable description. Respecting Mr. Hibberd's reversible fruit walls, I have only to say that I consider them an expensive and very questionable mode of retarding fruit trees. *M. Saul, Stourton.*

CLASSIFICATION OF PLANTS.

[THE following is an abstract of Mr. W. T. Thiselton Dyer's third lecture at the Royal Institution: see *ante*, pp. 236, 278.]

Summing up what has been said with regard to the Thallophytes, we find that the differences between Algæ and Fungi are physiological, and are devoid of classificatory significance in other branches of the vegetable kingdom: while Lichens in the essential points of their structure—their fructification—are Fungi.

The ground having been so far cleared, Thallophytes, as a whole, are found to admit of being distributed into four large groups:—1, Protophyta, in which there is only a vegetative multiplication. 2, Zygosporeæ, in which there is, in addition, a process of conjugation, the conjugating structures being perfectly similar. 3, Oosporeæ, in which the reproductive structures have become dissimilar. 4, Carposporeæ, in which the dissimilarity has proceeded further, and the act of fertilisation initiates complicated processes of growth in which the structures of the female parent take part.

So far, in a general way, we have seen that the group of Thallophytes exhibit a progressive advance in morphological complexity, a plant like Pleurococcus or Palmella cruenta standing at one end of the series, and the Florideæ or Red Sea weeds at the other.

The question now arises, How has Nature effected the transition from its lower sub-kingdom in the plant world to its higher? We must not, of course, look for a connecting link in the highest Algæ, because these have gone on in their own special path after they left the point at which they diverged from the main line, which went on to Phanerogams. But though it is rash to speculate, except in the most cautious way in such matters, the gulf is not, perhaps, so wide as has been supposed.

Amongst Cormophytes we have to deal with the extremely singular phenomena to which the name of alternation of generations has been given. The production of spores must be distinguished from that of zygospores and oospores. The one is a vegetative, the other a reproductive process. In many Thallophytes the same individual bears both. In other cases a series of individuals producing spores only eventually gives rise to one which bears organs of reproduction. In the higher plants this also happens, with the further difference that the individuals bearing the two kinds of spores are extremely different in appearance; and as it is convenient to have names for these, the spore-bearing individual may be called a sporophore, and the other an oophore, since it bears the oosphere or some equivalent body.

The case of Ferns is a striking and familiar instance. The Fern as we know it—a large and leafy plant—never bears any true reproductive structures. It is only furnished with spores which are in point of fact nothing more than detached cells of the plant uninfluenced by any process of fertilisation, and it is therefore a sporophore. The spores give rise on germination to a minute membranous body—the prothallus—which bears peculiar structures known as archegonia and antheridia, and containing respectively the oosphere and the antherozoids; the prothallus is therefore the oophore. The oosphere when fertilised becomes an oospore, and this gives rise in its turn to the leafy plant. In Ferns then the oophore is very small and the sporophore is relatively very large. In Mosses this state of things is exactly reversed: the oophore bears leaves and is in fact the Moss-plant; the sporophore is a peculiar leafless body, which forms what is known as the Moss-fruit. And though the Moss-fruit and the Moss-plant always remain in conjunction and seem to be parts of one organism, yet a careful study of the way the Moss-fruit arises shows that it really belongs to a distinct generation.

Now the examination of the early stages of the development of the Moss archegonium, which is borne at the summit of a leafy stem, shows that it has some points of resemblance to the carpogonium of the Algæ. Both are terminal structures; both consist essentially of a central cell destined to be fertilised and protected by an investment of other cells and produced in a not very dissimilar way. It is quite true the mode of fertilisation is different, one being effected by non-motile, the other by motile antherozoids; the former by the intervention of a trichogyne, the other by means of a canal-cell. But perhaps after all the two methods are not so very different, as they are each a protoplasmic "means whereby" the fertilising influence is conveyed to the oosphere. Then, when this has been effected there is the further analogy that in the Florideæ as in Mosses the whole product of fertilisation does not form a single oospore, but gives rise to a multitude of secondary spores, each of which represents a fraction of the product of fertilisation.

It is worth while also remembering that we have in Characeæ some simplifications of the fertilising process characteristic of the Carposporeæ in the direction of Cormophytes. The investment of the carpogonium formed by closely applied branch, or perhaps leaf-structures grows up before instead of after fertilisation (might one not suggest its analogy to the perichætium of a Moss?). The trichogyne and trichophore are only represented by rudimentary structures, and fertilisation is effected by antherozoids.

* *Dendrobium endocharis*, n. hyb., Rchb. f. (heterocarpum × moniliforme).—"Pseudobulbo Dendrobii heterocarpi;" pedunculo bifloro; sepalo summo ligulato acuto, sepalis lateralibus ligulatis acutis in mentum obtusum postice gibberosum descendentibus; tepalis oblongis acuminatis; labello a cuneato basi dilatato trifido; lacinis lateralibus extrorsis crispulis obtusis brevibus ante basin; lacinia media triangula porrecta, linea latiuscula brevi crinita ante basin, toto disco parce pilosulo; columna media antice unijuga.—Flos lacteus. Laciniæ labelli posticæ viridæ. Macula radians purpurea ante lineam pilosam basilarem. Striolæ purpureæ numerosæ in regione basilari. Columna antice flavo-viridis striis purpureis.

The oospore does not develope into a structure like a Moss-fruit, but on germination gives rise to a filamentous body from which the future Chara plant buds off laterally as the Moss plant does from the protonema (which corresponds to the pro-thallus of a Fern.)

In classifying the Cormophyta, we obtain the best characters from the relations of the oophore and sporophore.

I. Bryophyta. Oophore a leafy structure.
II. Pteridophyta. Oophore a thalloid structure, never completely included in sporophore.
III. Phanerogamæ. Oophore completely included in sporophore.

HEATING.

To Mr. Ormson the credit is due for the introduction of many improvements into our garden structures, and the means of heating them. His latest novelty—and, we might add, certainly one of his best—is the Patent Divisional Hot-water Apparatus, which will undoubtedly meet a long-felt want, as the cant phrase goes. There are times and seasons, as every gardener knows, when but little heat is wanted, but there are times when, on the contrary, much heat is required in the same houses. Now, to meet the latter contingency, of course a liberal supply of piping has to be provided; and, indeed, it is the usual plan to put in more piping than is perhaps actually necessary, owing to the temperature maintained with a lesser degree of force under the boiler in that case being less harmful to plants than that derived from a smaller quantity of necessarily harder-worked piping. Under this system, when it is essential that the temperature should be kept low, the gardener is not always master of the situation, unless he be his own stoker, in consequence of the liability of the latter to overheat the pipes. True, there is generally a valve by which this matter can be regulated to some extent, but that is liable to be forgotten when the stoker has other duties to attend to.

Now by Ormson's patent divisional hot-water system all this is obviated, and the gardener, not the stoker, is the master of the heat; and where a number of houses are worked on the one-boiler system, the introduction of the divisional system must prove a great boon. The plan consists of an arrangement of valves at the end of the rows of pipes, and may be described in this way:—Supposing that along the front of a house there are four rows of pipes; under ordinary circumstances these are connected with the boiler by simply a flow and return, and you cannot heat one without heating the whole of them. On the new system the four pipes at the end most convenient of access are connected with an upright column or water-way, and a valve applied to each end of the pipes, which converts each pair into a flow and return, and consequently perfectly independent of each other, so that if only a little heat is required one pair of pipes only need be used, and over-heating is almost out of the question. The system can be applied to any number of pairs of pipes, and all or any can be brought into use as the necessity for so doing arises.

The advantages of such an arrangement, from a cultural point of view, are obvious, and need not be further alluded to; but we think there is another advantage, and that is the all-important one of economy. Let the form of the boiler be what it may, a certain amount of heat only can be obtained from, say, 1 lb. of fuel; and by no possible amount of fuel can you heat the water beyond the boiling point, 212°. Therefore it follows that if more fuel than is necessary to attain that end is used it is simply so much fuel wasted. All boilers, no matter what their name or form, that are quick in action and are properly set, are economical if carefully stoked, but if there is any negligence or carelessness in the stokehole these are as wasteful as any others, no matter what may be claimed for them to the contrary. Grant that this is the case, and it cannot be disputed, then it follows that with several houses fitted up with the patent divisional heating apparatus, and worked on the one-boiler system, there must be economy if the stoker regulates his supply of fuel carefully according to the amount of water he has to heat, and the gardener enjoys the further advantage of having the heat up and ready for use when he wants it. If we assume that it takes, say, an amount of fuel represented by 100, to thoroughly heat the water in 1000 feet of piping, then if 500 feet of piping only are in use the careful stoker saves nearly or quite one-half, and so on in proportion; further than that economy cannot go with any boiler in use, and where such results are obtained the credit is due to the stoker and not to the boiler.

THE SIKKIM CUCUMBER.

The first notice of this remarkable variety of the common Cucumber having fruited in England appeared in our own columns (1875, vol. iv., p. 206), where it was stated to be a hybrid between a Melon and the Telegraph Cucumber; this statement was afterwards corrected at p. 303, wherein it was shown to be a variety of the common Cucumber that is extensively cultivated in N.E. India, for although numerous trials have been made to hybridise the Melon and Cucumber they have hitherto been totally unsuccessful. We now have the pleasure of pre-enting to our readers a reduced sketch (fig. 56, p. 305) of the plant, which fruited in the Economic-house at Kew in August last.

In stem, foliage, and flowers it does not differ from the ordinary forms of Cucumber, but the fruit at once distinguishes it from all other varieties at present cultivated in Europe; this is from 12 to 15 inches long and 3 to 5 inches thick, cylindrical or obtusely trigonous, smooth or with a few tubercles scattered about the basal half; in colour it is chocolate-red, entirely covered with a network of pale yellow, resulting from the breaking up of the epidermis into irregular shaped spots, caused by the expansion of the inner tissues, thus exposing the underlying substance as a pale network; the flesh is white and firm, and the placentas vary from three to five in number. This variation in the number of placentas in the same variety is remarkable, as it rarely happens that an organ of such great importance to a plant as the fruit varies in the number of its parts except by abortion. A good coloured figure of this variety appeared in the January number of the *Bot. Mag.*, t. 6206, whence it appears that although very commonly cultivated in N.E. India it was not known to science until Dr. Hooker met with it in Sikkim, in 1848, and brought specimens and drawings to England, from which M. Naudin in the *Annales des Sciences Naturelles*, 4th ser., v. 11, p. 28, described it as a variety of Cucumus sativus under the name of Concombre du Sikkim, and states that it is the most remarkable variety known to him.

Respecting its cultivation in India, we cannot do better than quote what Dr. Hooker states concerning it in the *Botanical Magazine*. He says:—"It is grown in all parts of the Sikkim and in the Nepal Himalaya up to 5000 feet elevation, in prodigious quantities. It ripens in July and August, or earlier at lower elevations, when the fruits are sold in the markets and eaten raw by the natives of all ages, as well as cooked. So abundant were they in the year 1848 that for days together I saw gnawed fruits lying by the natives' paths by thousands, and every man, woman, and child seemed engaged throughout the day in devouring them. How far westward its cultivation extends I do not know; Mr. Hodgson informed me that it was as common in Central Nepal as in Sikkim, but curiously enough I find no notice of it in Royle's exhaustive work on the useful plants of the Western Himalaya, though he mentions the Cucumber as being commonly cultivated. The English grown specimens have three placentas, but five was as common a number in Sikkim, and I have observed a tendency in old fruits to split longitudinally into three or five fleshy pieces."

Besides the present plant there are in the Kew Herbarium drawings of two other varieties from Ceylon, equally worth cultivating for the beauty of their fruits. One of them has larger flowers and more obtuse-angled leaves than the variety here figured; the fruit is smaller but quite as beautiful, being of a red-brown colour at the base, gradually shading off into orange at the apex, and longitudinally striped with broad mottled green bands, and is sparsely tubercled; the other has much smaller flowers, acute-angled leaves, and a fruit 8 inches long by 3 inches thick, dull yellowish green mottled with darker green, and having longitudinal bands of an orange-red colour which become confluent near the apex. *M. B.*

PLANT GOSSIP.

Great difficulty in raising the seed of the Herbaceous Phlox has been felt by some, and has led to complaints that the seed had lost germinating power. The great source of failure has in all probability been the attempts made to raise the seed in heat. Nature herself suggests the best mode of doing it, for where a bed of Phloxes was grown the previous summer some self-sown seedlings will be almost certain to show themselves in the following spring. This indicates that the seed should be sown under conditions similar to the self-sown seed. On one occasion, some time since, Mr. John Laing, of the Stanstead Park Nurseries, saved some seed of herbaceous Phloxes in early spring, putting the pans into bottom-heat as usual, and but very few plants resulted. Eventually the pans were taken into the open air and the contents turned out; and being allowed to be unmolested during the summer a large number of seedlings put in an appearance. Now Mr. Laing sows his seed in autumn or early spring in pans, placing them in a cold frame, and in early summer quite a crop of young plants rewards him. Soaking in tepid water for a time, and other shifts of a similar character, have been recommended, but the secret of success lies in Mr. Laing's method, which is as simple as it is effectual.

——Can Lapagerias be struck from cuttings? is a question frequently put by gardeners who are anxious to increase their stock of these beautiful climbers. Mr. Bause, the manager of Mr. John Wills' Melbourne Nursery, Annerley Road, has been very successful in raising plants from cuttings. They are put in about the month of October, and are made from well-ripened wood, each cutting having either one or two leaves, and they are then put in 48-sized pots, about twelve in a pot. A sandy soil, made up of peat and loam, the former in good proportion, is used, and when filled the pots are put by in a shady place, and no heat is required to assist the cuttings to strike. They commence to root about the following May, and by October following they have made shoots 4 inches or so in length, and are well established. Then they are potted off, and grown on into size. The Lapageria can also be propagated by layers in the same way as Carnations; and, in the case of good plants with several shoots, a number of them can be layered at a time, and they root in about nine months. Large plants are much more quickly made by layers, but the advantage of propagating by cuttings is, that a greater number of plants can be obtained in this way. The foregoing remarks are more particularly intended to apply to Lapageria alba.

—— Self-coloured Fuchsias—that is, bearing flowers in which the tube, sepals, and corolla are of the same colour—represent an interesting class, that appears to be growing in favour. They have the advantage of being robust in habit and free of growth, and being also highly floriferous, are showy objects for decorative purposes. The best in this section are Sedan, a short, thick-set variety, blooming very freely, and of a rosy-red hue; Deutscher Kaiser, a double variety, colour rosy crimson, most elegant in appearance; and Monarch, the tube and sepals bright red, and of great length, the corolla very large and well expanded. These varieties afford a pleasing contrast when grown among parti-coloured types. Fuchsias having striped corollas deserve encouragement on the ground of variety. Of these there are two types—one in which the dark corolla is striped with lake, the other in which the carmine corolla is striped with white. Of the former the best are Bland's new striped, King of the Stripes, and Striata splendida; of the latter the best representative is Mr. B. S. Williams' Striata perfecta.

—— The Orchid House at Kew is now gay and interesting with a number of beautiful and curious kinds. Dendrobiums are in strong force. The most noteworthy are—D. heterocarpum, D. crassinode, D. Wardianum, D. Pierardi, D. infundibulum, D. superbum var. giganteum, D. nobile var. pendulum, D. linguæforme, and D. densiflorum, of which there is a very fine specimen. The beauty of Goodyera discolor is much enhanced by the contrast of its white flowers; they are also useful when cut. Next is a fine plant of Dendrochilum glumaceum, with about fifteen graceful spikes. Stenorrhynchus speciosa blooms every year at this season, and requires only slight attention. It lasts long in perfection, and holds among the terrestrials a strong claim for a more extended cultivation. The Odontoglossums always contribute more or less to the attractiveness of the collection. There are now in flower O. Rossii, two forms of O. Alexandræ, O. triumphans, forms of O. pulchellum, the rare O. læve, and O. luteo-purpureum. Ada aurantiaca is quite conspicuous among the preceding from its brilliant and distinct orange colour. Of Cattleyas there are C. Trianæ and C. Warscewiczii; of Lælias, L. anceps, and L. superbiens. To these we may add several Cypripediums and some good forms of Phalænopsis, with a host of the so-called botanical species. If we may judge from a few instances, it would seem that some people have the notion that if a plant is not handsome it must be of special botanical interest. This is a great mistake, and one to which we are perhaps indebted for the expression, "botanical Orchids."

ELECTRIC THERMOMETERS.

UNDER the careful management of Mr. Woodbridge, the gardens at Sion House, the seat of the Duke of Northumberland, are gradually regaining their diminished *prestige*. Renovation is becoming the order of the day. Some of the houses have been altered and adapted to the modern requirements of express cultivation, and others are to be similarly treated as time rolls on. Two of the large tropical houses have been converted into vineries, and fine indeed have been the crops already produced in them. The novelty attached to the culture of the Victoria regia has somewhat worn off, and its culture at Sion has for some time been abandoned, the well-known house being now devoted to Orchids. A walk through the long ranges of glass a few days ago revealed the Peaches and Nectarines all aglow. A fine plant of the Stanwick Nectarine was a sheet of pink blossoms—a glorious sight. What a pity it is that such a beauty should have any bad qualities. In other houses were Vines in flower and Figs in full leaf—what a delicate fragrance the flowers of the Vine possess; how grateful to the nose of the grower is the first whiff of the odour emitted by Figs. In other compartments Strawberries are in flower, Vine in pots swelling off, Cucumbers in full swing, French Beans—a small army of them, Asparagus in abundance; everything, in fact, that one expects to find in such an establishment, and all evincing high cultivation. At no season of the year are the houses more pleasant than now, but we must not linger amongst them, the object of our visit being more particularly to note a novelty which has lately been introduced here, and which we think will be of great interest to gardeners generally. This is "Bagot's Patent Safety Indicator," a new and improved pressure and temperature indicator and alarum apparatus, which has been designed by Mr. A. C. Bagot, Churchdale, Rugeley, to enable those in authority to ascertain or be warned of the state of temperature of the atmosphere in any place near to, or at a distance from, that whereat the indication or warning is given. In its application at Sion the *modus operandi* is as follows:—In each of the most important houses an ordinary metallic thermometer is placed in a convenient situation, and connected in the ordinary way with a "Leclanche" battery, and an electrical indicator and alarum, fixed in the under gardener's lodge. The thermometers in each house bear a different number, and the indicator is provided with "drop-cards" or movable discs, which have numbers corresponding with those in the houses printed on them. Now, assuming that those in charge do not desire the temperature in any particular house—say No. 1—to fall lower than 45°, a movable point on the face of the metallic thermometer in that house is set at 45°, and should a sudden frost set in, a ventilator slip down, a light be blown off, or the door be left open, or anything else happen to cause the temperature to go down, as soon as it gets to 45° the alarum is sounded, the indicator in connection with it tells the number of the house requiring attention; and until attended to, the alarum or bell continues its vigorous warning notes. Of course, if it is desired, this tell-tale will let you know when the temperature exceeds any given figure.

A very useful addition to the indicator is a book ruled in columns, in which is written daily the numbers of the houses and what the thermometers are set at. Then if any indication is given the time must be stated, and another column finds room for the name of the man on duty. The careful keeping of a book of this kind, in addition to being very useful to the gardener, should prove a valuable lesson to his young assistants.

The advantages claimed for the metallic instruments over the mercury thermometers are that they cannot be broken, they keep clean, they are more accurate at high temperatures, they are more easily read and observed by uneducated persons, and can be placed in hotbeds actually mixed up and covered with the manure.

What may be the cost of such an arrangement as that carried out at Sion we are unable to say, but of the usefulness of the system in places where the houses are any distance apart or the gardener's house far away there can be no doubt. It would prove a boon in many places, and save many a gardener the disagreeable necessity of turning out at unreasonable hours on the bare chance of finding something wrong, to say nothing of the comfort he would gain from the absence of that wearing element of uncertainty at night which in spring and autumn is too often inseparable from his labours.

BRITISH GARDENERS.—XXXVI.

ROBERT BOWIE.

WE give to-day the portrait of a gardener whose name has been for a very long period familiar in the gardening world—Mr. Robert Bowie, the highly respected gardener at Chillingham. His horticultural training and subsequent fields of operation are well set forth in the accompanying autobiographical notes:—

"I was born August 29, 1817, at Hepburn Bell, one of the home farms of the Earl of Tankerville, of which for several years my father was manager, previous to coming to Chillingham as bailiff. He died there, much regretted, before I was ten years of age, but a good and kind mother was spared to me for thirty years after.

"At the age of twelve years I was by his lordship ordered employment in the gardens during the summer, and in winter I was to continue at school until I was sufficiently educated. This I did the first year, but when the next summer was past my master (Mr. Guilfoyle) objected to my going to school in the winter. What education I afterwards got was at the night-school, to which I went regularly every winter until I was twenty-one. At first my work was anything but easy in the kitchen garden. When I got more strength I was sent with the men to assist at whatever was going on either in the gardens or outside grounds. At that time many alterations were being made both in the park and out of it. One thing very much in vogue then was removing large trees from one part of the place and replanting them in another, for the purpose of producing an immediate effect; also the making of roads, drives, and walks, in various directions. A new flower garden was laid out, and the grounds around the Castle very much enlarged.

"Mr. Marshall, who for a long term of years previous to Mr. Guilfoyle coming, had been gardener, and also had the management of all the woods, made a new kitchen garden further from the Castle than the old one had been; some of the houses and all the inside walls for fruit trees were built and the trees planted in Mr. Guilfoyle's time. With him I served more than five years, until he left.

"Mr. Brown succeeded him as gardener, and under him I had charge of the houses, pits, and frames, and likewise of the trees against the walls, &c., and assisted occasionally at any other work that was on hand. After being with him three years, I was engaged by a brother of Mr. Moffatt's to go to Clumber, but his lordship by some means got to know that I had done so, and objected to my leaving here; and from the kindness my mother had received at his hand from the time of my father's death I felt obliged out of gratitude to comply with his request.

"After continuing on here for some time, I at last became tired of my situation, as I was making little or no progress in learning the business of a gardener, which long ere that I had determined to follow. I wrote to his lordship, thanking him for all the kindness I had received from him, and also informing him that I now intended looking out for a situation in which I might have an opportunity of further improvement. In a few days he wrote for me to come to Walton-on-Thames, which, on the death of the Dowager Lady Tankerville (his mother), had come into his possession. I need not say how willingly I responded to his request. Here I was put by Mr. Richardson to assist in the houses. On first looking through them I was almost ashamed to acknowledge my ignorance of nearly all the plants that they contained, having previously had little or no opportunity of learning the names of anything but hardy herbaceous plants, trees and shrubs. However, by the time I had been there twelve months I not only knew the names of most of them, but had also acquired some knowledge of the treatment they required. Mr. Richardson had in his day been an excellent plantsman, but at that time his memory was very much impaired; still for his years it was the best I ever knew. I had not been many days there when I was told by one of the men that he would not tell me the name of any plant twice, and as the most of them were without labels, I was under the necessity of asking him the names of those which the foreman could not tell me. On one occasion I had forgotten a name he had told me, and after several weeks I again asked him what it was, when he very quietly said, 'I have told you that already,' and then walked away. I never more asked him the name of any plant a second time, but as soon as possible after he had told me, wrote it down, either on paper, or if I happened not to have any in my pocket, on the inside of the 'peak' of my cap.

"I had not been long there before I got the wall trees to look after; many of them were very old, but they produced large crops of good fruit, particularly of Peaches, Apricots, Pears and Grapes. Neither before nor since have I seen such good Muscadines as these were, and in such large quantities. As soon as the berries were fairly formed the bunches were thinned, and then put into bell-glasses that had been made for that purpose. One side of the glass was quite flat, with a small hole near the top, at which the bunch was introduced to the inside; it was then fastened by a string round the knob of the glass to a nail in the wall, and then a piece of fine canvas was tied over the mouth, and there the bunch remained secure against either weather or insects, until it was thoroughly ripe. Before frost set in what had not previously been cut for use were taken out and hung on wires inside cupboards in a small house with a glass front, in which was a flue for the purpose of excluding frost. Before they were all used some were a good deal shrivelled, they were, however, well flavoured, and of a golden hue.

"By far the best plants in the houses were the Palms in the large stove. They had, however, got very much too large for the space allotted them, and not wishing to enlarge the house his lordship made a present of them to the Duke of Devonshire to help furnish the large conservatory at Chatsworth. In the summer of 1840 I assisted at the taking up and packing of them, which at that time was considered rather a hazardous undertaking. Many gardeners came from a considerable distance to see the operations when we were busy with them. Mr. Paxton was most particular in having every root saved, in

order that their removal might be successful. We were a long time over the job; they were, however, well worth taking every pains with, for they were really splendid plants, and afterwards did well. Some time after they had been got safely to their destination, Mr. Paxton returned to Walton to settle accounts. After giving us young men (there were three of us) very handsome presents in money, he also presented each of us with a copy of his *Botanical Dictionary*, which at that time I valued highly, and often afterwards consulted when uncertain as to the correct spelling of names.

"Mr. Richardson was a good practical gardener and strict disciplinarian, but if a young man attended to his duty he was a kind master. When the alterations were going on at Chillingham, he was in the habit of coming down for a month or two every year, when his lordship was here, for the purpose of giving his advice when anything particular was in contemplation, and to him the credit is due for many of the improvements made at that time,

"Things went on very pleasantly with me during the time I was with him, and when he thought that he had not a chance of teaching me much more, he very kindly recommended me to Mr. Toward, manager to Her Royal Highness the Duchess of Gloucester, at Bagshot Park, and to him I went in the spring of 1841, and was employed in the kitchen garden. I had not been long there when the foreman left, and I got that situation. Bagshot was then an excellent place for a young man, gardening in every department being pretty well carried out. The demand for fruit and vegetables for the supply of Her Royal Highness' establishment, not only when at Bagshot, but also when in London, was something considerable; and the garden not being of great extent, we were under the necessity of keeping that part devoted to the production of vegetables nearly always under crop. No sooner was one variety cleared off than the ground was prepared for another. Of fruit we generally had a fair supply of all the hardy sorts, and, for the number of houses, rather more than an average quantity of forced fruits. Pines (mostly Queens, during the time I was there) were well grown; and Mr. Toward informed me, the year after I left, that my succession plants had produced heavier fruit than any he had ever had. The chances which young men there had of learning were highly favourable; not only was Mr. Toward well up in his profession, but he was also most willing to communicate what he knew to those under him. There were also the nurseries of Mr. John Waterer and Mr. Standish at Bagshot, at each of which the young men from the Park always got a kind reception. Many a "wrinkle" we picked up in them during our evening rambles. For the greater part of the time that I was there Mr. Standish's was my "home house," where, when at liberty, I generally spent the evening.

"I had only been with Mr. Toward about two years, when, in the autumn of 1842, I was requested by the Earl of Tankerville to come to Chillingham, to take charge of the gardens, &c., and accordingly I took farewell of Bagshot and the kind

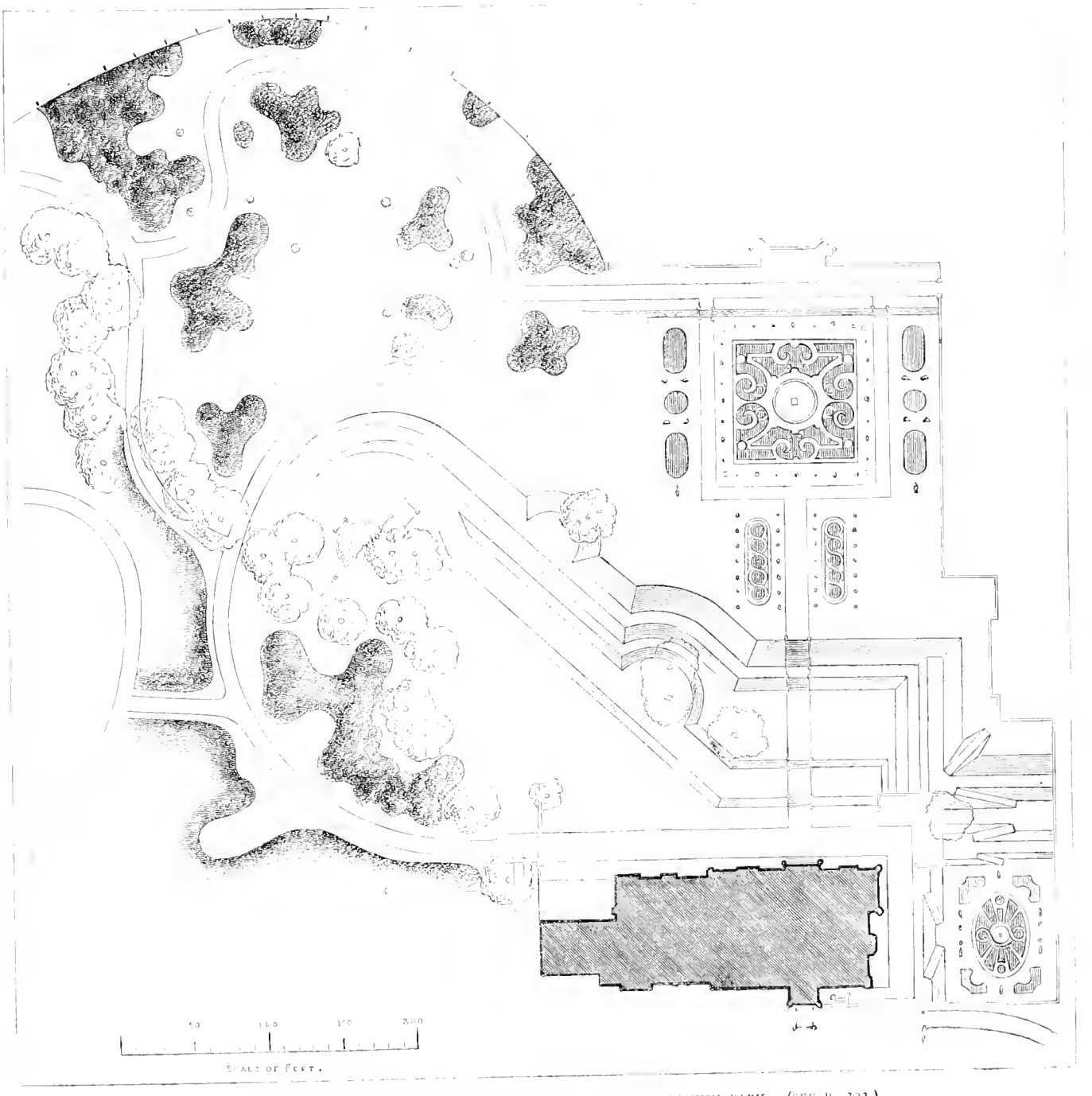

Fig. 55.—Ground plan of the flower garden, etc., at Glanusk Park. (See p. 302.)

friends I had there, and returned here—and here I have since remained. I have but little more to tell. This, however, I can say: that I have always endeavoured to do my duty not only to my employers, but also to those under me. No doubt I have made some alterations and additions in the grounds and gardens, and I wonder who would not have done so during the time that I have had the management of them. I have perhaps done more by way of ornamenting "the home of the wild cattle," the park, than in any other department. The hardier varieties of Conifers have been planted rather largely, and are now many of them fine specimens. I have also added some plantations of useful forest trees to those formerly on the estate.

"After the death of the late Earl of Taukerville I was continued in my situation by his son, the present Earl, and have invariably been treated with great kindness by my employers and all the members of their family."

GLANUSK PARK.

GLANUSK PARK, Brecknockshire, is the seat of Sir J. R. Bailey, M.P., and our illustration (fig. 55, p. 301) represents the ground plan of a new flower garden and pleasure ground which have lately been finished there. The ground shown in the plan covers about 8 acres, and was park land before the alterations were made, on the recommendation of the late Mr. Markham Nesfield, who prepared the plans, the whole having been carried out under the sole personal supervision of Sir J. Bailey himself. The ground originally sloped from the garden front of the mansion, so that the terrace nearest the house is 20 feet higher than the base of the lowest slope; and the difficulty in dealing with the place consisted in a number of fine old Oaks, which Sir Joseph Bailey would not have cut down, but which necessitated the breaking out of the terraces to save the trees, and to keep them on the same levels.

The small flower-garden in the lower right hand corner, though on the original plan, has not, we believe, been carried out. Near to it is the outline of a grand old Oak which stands about 10 feet lower than the terrace walk around the house, necessitating the erection of a strong stone bastion surmounted with a handsome pierced stone balustrade. Not the least important feature is the very fine flight of stone steps which leads from the mansion to the Dutch garden on the low level, and which were built of Forest of Dean stone, with a handsome Bath stone coping on either side, stopped at the intersections by moulded piers with elaborately carved panels, some of which are surmounted with griffins. The scroll beds on either side are edged with Box, and intended for carpet bedding. The flower garden beyond is also laid out in Box on gravel, and surrounds a fountain, the basin of which is some 30 feet across. There is no central jet, but the water spurts out of the mouths of eight or ten stone frogs into a smaller basin. The little dots around the flower garden indicate standard Hollies, Yews, &c.

At the left end of the first slope there is another bastion, a fine piece of masonry in ragstone, built up as a retaining structure for the terrace, the ground at its base on the pleasure-ground side being 8 or 10 feet lower, and so treated as to allow of the walk leading from the front of the mansion to the left being made of an easy gradient. The stonework was carried out by Mr. Forsyth, of Baker Street, the constructor of the fountain at Witley Court, figured in our columns in 1873, and which is one of the most satisfactory objects of its kind in the kingdom. We are indebted for the plan to Mr. Peter Dollar, 46A, Pall Mall, who was the principal assistant of the late Mr. Markham Nesfield, and who, since his death, has been occupied in carrying out similar works.

Natural History.

A RARE BIRD.—"A Naturalist" writes to the *Times* from Christ Church, Hampshire:—"A male specimen of the 'surf scoter' (Oidemia perspicillata)—one of the most rare of our rare British birds—was shot in the estuary at Christ Church the week before last, and was brought to me the same evening. So uncommon is the occurrence of the surf scoter on our shores that Yarrell, in his three editions, only mentions two instances of its having been killed south of the islands of Orkney and Shetland—one in the Firth of Forth and the other in Musselburgh Bay; while Mr. Bartlett records in the *Naturalist*, iii., 420, that he had received a recently shot specimen to stuff, omitting, however, to say where it came from. In neither Montagu's *Ornithological Dictionary* nor the *Supplement* is the bird included; but the editor of the edition of 1866 mentions three further instances of its appearance—viz., one shot near Weymouth (a female), another at Gristhorp, and a third taken alive at Scilly. Notwithstanding these occurrences, however, he adds, 'that the bird has but a slender claim to admission into the British list.' The bird brought to me was in a perfectly mature state of plumage; the hues of the singularly-formed bill were brilliant, the base of the upper mandible being almost crimson, shaded off to a pale pink flesh colour, with the peculiar lateral black patches beautifully defined; the legs and toes were vermilion, the webs or interdigital membranes black, the irides were white, and the whole plumage, with the exception of an angular white patch on the forehead and another on the back part of the neck, of an intense soft, glossy, ink-black. The bird has been entrusted to Mr. Edward Hart for preservation, and may be seen by any one desirous of doing so."

YELLOW WAGTAILS.—This bird is in many parts of Sussex called "the Barley bird," because it makes its appearance in spring just about the time when the spring Barley is sown, and some people term it "the quaketail." Indeed more than one writer on ornithology says that it inclines more to the pipits than it does to the true wagtails. These quaketails are known in France as the "Bergeronnettes." *Helen E. Watney.*

ROOKS AND ROOKERIES.—As several paragraphs have appeared in your columns on the habits of rooks and the formation of rookeries, I am induced to ask if any of your readers can tell me whether the small crows which may be seen hopping about amongst the tall Italian Pines (Pinus Pinea) so much admired in the grounds of Roman villas, belong to the same species as the birds called rooks in England? *L. T., Milan.*

The Villa Garden.

FRUIT TREES ON WALLS.—The mild weather is now bringing on the Apricot, Peach, Nectarine, and Plum trees on walls with marvellous rapidity, and the training of them, either by nailing them to the walls or tying them to wires, needs immediate attention. The buds on the Peach trees are swelling almost to bursting, and thus it becomes more and more difficult to handle them without rubbing off some of the incipient flowers. Nailing to brick walls is wretched work, especially in cases where the walls are old and well worn, and the system of wiring walls, either by means of strong galvanised iron wire placed horizontally along the walls at certain distances, or by employing lengths of wire netting similar to that used for fencing round fowl-houses, is far better for Villa Gardens, for then the work of training the trees becomes a pleasure, rather than a penance or a kind of martyrdom as when nailing has to be done. The shoots can be tied to the wires by means of Rofia-grass—an excellent tying material, far preferable to that obtained from the ordinary Russian bast mats. It can be pulled into thin strips, moistened, and then twisted, and a tie made in this way will last a whole season. In nailing or tying in the shoots they should be kept straight, but not necessarily in a strictly horizontal position, and too many shoots should not be allowed to remain. This is a common error with Villa gardeners; they want to get all the fruit they can, and they over-stock their trees with wood. Even in gardens managed by men of some standing in the ranks of their craft, it is not uncommon to see Peach and other wall trees with the wood very much crowded. A fine old gardener once said in our hearing that the practice of crowding trees with wood often leads to barrenness and premature decay of the trees.

The idea recently promulgated by Mr. Hibberd in his lecture on "Fallacies in Fruit Culture," of having a kind of breastwood of shoots pointing outwards, is one we have worked out for a few years past, and that for the simple reason that the sun strikes on our Peach wall very early in the morning, while the deposit of frost is on the flowers, and they suffer materially in consequence. We have found the breastwood a certain protection, and it is a very easy matter to cut the shoots away when the ripening time comes on.

PLANTS IN POTS.—All plants in pots that have been kept through the winter, such as Fuchsias, Pelargoniums, and other well-known subjects, are growing fast, and they should be cut back so as to lay the foundation of handsome plants, and be repotted without delay. Some of our plants that were repotted at the end of the summer, among them some nice bushy plants of Zonal Pelargoniums, are being simply top-dressed, not repotted, as they do not need it; and this dressing is giving a great impetus to them. In the act of top-dressing the soil is taken out to the depth of an inch and a half or so, moving it more round the sides of the pot than close to the stem of the plant. Many things not requiring repotting can be treated in this way, and with great advantage, while it is also convenient in cases where potting soil is scarce.

PEAS.—A sowing of Peas should be made at once, as they will soon germinate and come away. A dwarf growing variety, like Maclean's Advancer, James' Dwarf Prolific, or Princess Royal, will be found the best for small gardens. Tall-growing Peas, like Dickson's Favourite, Laxton's Prolific Longpod, or Champion of England, are out of place in gardens limited in size, and there is no necessity for sowing these tall varieties while there are so many dwarf sorts of such excellent quality. We find it a great assistance to the Pea crops to take out a trench 6 inches or so in depth, and place at the bottom a good layer of manure, then cover it with soil and sow the Peas in it, and afterwards draw the soil over them. This dressing of dung at the roots greatly assists the Peas, especially during a spell of dry weather, which is very trying to Peas in shallow soils. For successional and main crops we can recommend Premier, Wonderful, and Omega—a capital dwarf Pea, and an excellent cropper.

Garden Operations.

PLANT HOUSES.

GREENHOUSE HARD-WOODED PLANTS: HEATHS.—The very large quantities of winter-flowering Heaths of the hiemalis type which are annually grown and sold for decorative purposes, are rarely seen after the first season of their blooming, appearing to be simply prepared for once flowering, and then discarded, as is generally done with Hyacinth bulbs after they have bloomed. In the case of the Heaths, it may be safely said that the majority die outright before being consigned to the rubbish-heap. The treatment they have received, especially through the summer immediately previous to their being sold, in order to produce them in a condition most floriferous and taking to the eye, has no doubt an adverse influence upon their ability to maintain a healthy condition afterwards—the over-stimulating effects of manure-water most likely having something to do with it. Nevertheless, many of these plants, if not kept when in flower where they are too warm, and, consequently, excited into growth in the winter, or stood, as they frequently are, crammed closely in amongst other things where their foliage becomes in a few weeks a mass of mouldy decay, may be made to do good service in after years, especially if they are fairly treated when their flowering is over. Instead of being left after they have done blooming in comparative neglect, they should at once be well cut in, the strong free shoots which they have generally made the previous season should be shortened back two-thirds of their length, and the plants stood in a good light house or pit until they have begun to grow, when they should be potted, as the object will usually be not to grow them too large; they will usually be often more useful for a moderate size, so that a 2-inch shift will be enough. If there is any trace of mildew upon them at the time they are cut in, dust them well with sulphur. The general stock of Heaths, if not already tied, should have this work completed as early as it can be got through, in all cases removing the old dead leaves that adhere to the branches, bringing the branches down so as to furnish the base to the rim of the pot. This is particularly necessary in the case of young growing specimens, for if the strong shoots of these are not trained well down whilst they are young they cannot afterwards be brought into the right position, the result of which would be that, as the weaker bottom branches become denuded of leaves, which they will do as the plants get older, they become bare of leaves at the bottom, which detracts much from their appearance. Heaths

intended for spring and summer exhibition should have their training completed by the shoots being looped in their places with thread or bast; the former is much preferable. Any that have to be kept back should be placed in the retarding-house, but here they must have the lightest position, well elevated up to the glass, and not be overcrowded. Whilst located in a house of this description, where neeessarily, from the absence of sun, the temperature is cooler and growth later in commencing, they must not have too much water, neither must they be subjected to quite so much air as would be needed in a house under the full influence of the spring sun.

Azaleas.—So subject are Azaleas to the attacks of thrips and also red-spider, if grown amongst other plants or under Vines that are affected with these pests, that they rarely eseape a summer without being more or less infested, even where every care is taken to keep them in check; but, as I have frequently urged, it is impossible to have Azaleas in a condition at all approaching that which they are capable of, unless these insects are so kept down as to prevent the leaves being seriously injured by them. Any plants that last summer were much infested with these pests, even if they were well dressed in the autumn, should now be again washed with strong tobaeco-water to which has been added a couple of ounces to the gallon of Gishurt; this latter softens the oily matter in the tobaeco-water, and will kill the eggs of the spider, and, both combined, will destroy the vitality of thrips eggs that may have escaped the autumn washing, and which, until they have emerged from their varnish-like covering, cannot be reached by fumigation, however powerful. There is no better plan to insure the plants being clear from these, their greatest enemies, than to again wash them, by which means the season's growth will generally be far advanced before it gets molested—a matter of the greatest importance to their well-being. If the eggs of these insects exist on the plants at this season of the year, even ever so few in number, they will quickly come to life as soon as the weather gets warm, when the young tender leaves are not in the best condition to bear either fumigation or washing with anything that will destroy the unwelcome company. It is good practice, even on the score of economising labour, to wash the whole of the stock at this time.

FLOWER GARDEN.

The season for shrub pruning having arrived, all the time that can be spared for such work will be well spent in cutting into form specimen plants, and shortening back the irregular growths of common and Portugal Laurels, Aucubas, Bays, Hollies, Yews, &c., as only by annual trimming can they be kept in anything like shape, or well-furnished with branches from top to bottom. Screens, lines, or belts of such plants are frequently cut in too formal a manner through clipping them with shears, a knife being the only tool that should be used, except in the case of neglected plantations, when a small saw or bill-hook may be requisite to remove dead wood or thick branches. If not yet done, shrubbery borders should be pointed over, more for the sake of neatness and with a view to the destruction of weeds than from any benefit the plants may derive therefrom. Afterwards, where there is room and a desire for flowers, plant in open spaces in every possible corner near the margins hardy flowering plants and bulbs, such as Snowdrops, Crocuses, Narcissi, Scillas, Sedum spectabile, Arabis, Candytufts, Violas, Daisies, Polyanthuses, Potentillas, and many other equally suitable plants which will suggest themselves.

The hardy fernery may now be cleared up, and put in order for the season; all the dead fronds should be removed, as well as any protection that was placed over and about the crowns of half-hardy kinds; the ground should then be freed from weeds, and all plants requiring it have additional soil. Some of the dwarfer and close-growing alpine plants associate well with Ferns, and where there is space such of the following as can be had may be planted now:—Aubrietia deltoides, Campanula carpatica, Lithospermum prostratum, Phlox verna, Trillium grandiflorum, Thymus lanuginosa, Primulas in variety, Myosotis dissitiflora, Helianthemum, and Sedums and Saxifragas of many kinds. The planting of Roses should be completed forthwith, and in the case of established plants pruning should be no longer delayed, after which the beds may have the mulching of manure that was put on them in the winter forked in, but only sufficiently deep to cover it with soil, it being undesirable to bring it in direct contact with the roots. Ivy on walls or screens may now be clipped, and if done thus early, and a bare appearance is not objected to for a time, it should be cut close up to the stems, and all the old foliage taken entirely off; in any case it should be cut close enough to hinder the lodgment of vermin of any kind. Now is a good time to trim up and regulate the growth of climbers, and where it is intended to plant them this also may be done. The protection that was given at the commencement of winter to plants of a doubtful hardy nature may now be removed, after which top-dress with rich soil.

Where spring-flower gardening is not practised the beds will now be at liberty, and should therefore be dug and got ready for the summer occupants; and if, as we would recommend, a proportion of hardy plants be intermixed with the tender ones, the former may be planted in their places as soon as the ground and arrangements are ready for them. The following are a few of the many hardy plants which associate well with the kinds generally used for the summer decoration of the parterre:—Euonymus (all the variegated kinds), Vinca elegantissima variegata, Veronina Hendersoni variegata, Arabis lucida variegata, Ajuga reptans purpurea, Cerastium tomentosum, Antennaria tomentosa, with Saxifragas, Sedums, and Sempervivums. Sow in heat, at once, Lobelias, Portulacas, Amaranthus, and, indeed, any annuals which are intended for bedding purposes, and prick off into boxes or pans those that have been previously sown; after which, till fairly started into growth, they should be kept in a close, warm atmosphere. Proceed with the propagation of all kinds of soft-wooded plants with dispatch whenever cuttings of the various kinds can be had. Pelargoniums or other plants that have been wintered in store pots, but which are now suffering for want of more room, should be potted off or planted out in turf or cold pits, and kept close for a time, and then gradually inured to the weather, covering them up at the least sign of frost. The roller should be freely used on the lawn preparatory to mowing, which will shortly require to be done. Grass seeds may also now be sown, and the renovation of bare spots attempted by giving a good dressing of soil, soot, and wood ashes. *W. Wildsmith, Heckfield.*

FRUIT HOUSES.

Pines.—In the case of early fruiting Pine plants the nature of the treatment which has been applied to induce the fruit to advance satisfactorily will necessarily have prompted root-action considerably, and at the present period the tender state of these all-important parts will be subject to material damage through defective management, which chiefly arises from two causes—either too much heat or water at the root. In regard to heat for the plants in question at the root, 90° is ample. As to the time at which water should be applied no definite rule can be laid down, as much depends on local circumstances and actual requirements. Now that heat, light, and sunshine are daily increasing all the plants should be looked over at least once a week, and none should be watered indiscriminately; but when required the water should be applied plentifully, at about the same temperature as the bed, if the heat in it does not exceed 90°, manurial agents being used as stimulants in a mild form. When it is desirable to ripen as soon as possible the early started fruit the most forward may be accelerated materially under advantageous circumstances by keeping the surface temperature somewhat higher than the rest—from 70° to 75° on mild nights, and from 80° to 90° in the day. Keep the houses well moistened, and avoid intentionally damping the fruit during the flowering process. At any time when the heat in the recently prepared bed has settled down to 95° at 8 inches below its surface, the suckers should be potted and plunged in it at once. Give them no water until ten or fourteen days have elapsed. By this time new roots will be present, and water should be given whenever required. Use pots according to the size of the sucker, 5 inch and 7 inch ones being most suitable sizes for general purposes, and ram the material, which should consist of pure loam only in lumps, firmly round them. Keep the house or pit moderately moist, and at about 55° at night and 60° to 65° during the day; shade if sunshine is very powerful, and slightly syringe the plants when these conditions prevail, not more than twice a week. *G. T. Miles, Wycombe Abbey Gardens.*

Vines.—The plants started for early forcing next year should now be sufficiently advanced in growth to admit of at once being shifted into the fruiting-pots, which should be from 12 to 13 inches in diameter. The compost should be two-thirds turfy loam, which has been stacked a few months, so as to destroy all vegetation, and one-third well-decomposed stable manure. The turf should be chopped moderately small, but not sifted, as the roots of the Vine delight in the turfy portions. If of a retentive nature, a moderate quantity of clean drift or river sand may be added, so as to keep the soil in a healthy porous condition. After mixing, the soil should be placed for a day or two in a warm house, so as to get warmed before using; and the plants after potting placed in a warm house or pit, where the rods can be grown as close to the glass as consistent with their well doing. A gentle bottom-heat is desirable if it can be obtained, and the temperature kept at 55° to 60° by night, giving air freely on all favourable occasions. Buds or cuttings inserted in due time will also require attention as to shifting, &c., as the pots become filled with roots. In the early house keep the temperature at 65° to 70°, and maintain a rather dry atmosphere while in bloom; in the more forward, where the berries are well set, the temperature may be allowed gradually to fall to 60° by night, allowing it to rise to 70° before giving air by day, and increasing the moisture by freely sprinkling the floors, &c., several times in the day. Syringing the Vines should be discontinued after the bloom begins to expand. Continue to thin the berries of Vines started early as soon as sufficiently large to admit of the largest and best placed being seen distinctly. *W. Cox, Maidenfield.*

Cucumbers.—Plants that have been some time in bearing will now be liable to be attacked by thrips and red-spider, and as they cannot be expected to support these troublesome pests and carry a crop of fruit, no time must be lost in applying the usual remedies for their destruction, the best of all being good cultivation with liberal applications of soft water to the foliage through a fine syringe. If through sharp firing the enemy has taken firm hold, a few of the old leaves may be removed, the crop lightened, and bottom-heat, from fermenting materials if possible, kept up to 85°, to promote the rapid development of young growths. Sulphur may be applied to the old Vines and leaves which are left, having previously syringed with water to which a small piece of soft soap or Gishurst Compound has been added, as this will cause the sulphur to adhere more readily. Pay attention to top-dressing, stop at the first joint beyond the fruit, and remove male blossoms. With increasing solar heat and light additional evaporating pans may be placed on the pipes. The house may be well syringed on fine afternoons, closed at 80°, and allowed to run up 10° more from sun-heat. Keep up a supply of fermenting material for the renovation of linings, as we may yet have a period of bad weather. Stop lateral growths, to induce fruitfulness. Shade lightly for an hour or two in the middle of the day if the sun is bright, to prevent flagging. Close early and guard against injury from rank steam by giving a little back air at night. *W. Coleman, Eastnor, Feb. 29.*

KITCHEN GARDEN.

The month of March is always a busy one for the kitchen gardener, and this year, owing to such a heavy fall of snow and wet during the winter, is likely in most places to make it more than usually so as operations have been sadly retarded through the land being in an unfit state to be interfered with. While it remains in a wet cold condition, it will be useless hurrying in the seeds, as with their germinating powers not over strong this season, owing to the bad summer of last year for ripening many of the kinds, it is more than ever important that the land should be in good order, and the weather fine and settled before the crops are sown. The principal thing in cropping is to have a good seed-bed, and this can only be done by taking advantage of any opportunities the weather affords for working the soil about to get it in good order.

Cauliflower plants that have been wintered in pots under glass ought now to be got out on a warm, sheltered border that has been properly prepared for them by being heavily manured. Where the soil is not stiff and retentive these do best planted in drills similar to what are usually drawn for sowing Peas. In these they are more sheltered from the wind and weather, and gradually receive additional soil round their stems during the process of hoeing and cleaning, thus encouraging surface-roots, by which they are greatly benefited. The check received to those established in small pots through planting them out is scarcely felt, but for such as are not so favoured cold cutting winds are very trying till they get root-hold; the planting of these should therefore be deferred till the weather is quite favourable. Autumn-sown Lettuce should be got out on a similarly prepared border, either from those wintered under glass or such as are standing on the seed-bed. Nurse on the spring-sown plants by giving them every encouragement, or they will not be sufficiently forward to succeed those that have stood the winter. Make a sowing of Paris Cos Lettuce, Leeks, Cauliflower, Brussels Sprouts, and the best of the early Broccoli on a warm, sunny border. A dressing of red-lead will secure them from birds, and save the time and trouble of netting the beds. Spinach is, perhaps, the most troublesome crop a gardener has to deal with during the summer season, and with the common variety it is a difficult matter to keep up a supply. The New Zealand kind forms a most excellent substitute, as it will grow almost anywhere in rich soil, but to be of much service it should be sown in heat at once to get strong plants for turning out in May. A few sowings of the common Round Spinach should be made fortnightly to keep up a supply till the other comes in. Now that the principal heavy work that is likely to affect gravel walks unfavourably, such as wheeling, &c., is over for the season they should be put in order by being turned, levelled, and rolled down, so that they may present a clean, neat appearance for the remainder of the season. Gappy Box edgings, an eyesore wherever they occur, should have the gaps filled up or be relaid. *J. Sheppard, Woolverstone Park.*

HORTICULTURAL EXHIBITIONS, 1876.

MARCH.

14.—Manchester Botanical and Horticultural Society. Floral Meeting at the Town Hall.
15.—Horticultural Society of Liverpool. Exhibition of Hyacinths and Spring Flowers.
15.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees. Spring Show.
15.—Royal Agricultural and Horticultural Society of Jersey. Extra Spring Show.
15 and 16.—Leeds Horticultural Society. Spring Show.
22 and 23.—Bristol, West of England, and South Wales Chrysanthemum Society. Spring Show.
29.—Royal Botanic Society, Regent's Park. Spring Show.
29.—Glasgow and West of Scotland Horticultural Society. Spring Show.

APRIL.

5.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees
5.—Royal Caledonian Horticultural Society. Spring Show.
12 and 13.—Royal Aquarium and Summer and Winter Garden. Flower Show.

THE

Gardeners' Chronicle.

SATURDAY, MARCH 4, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, March 6 — Sale of Orchids, at Stevens' Rooms.
TUESDAY, March 7 — Sale of Wright's Nursery and Stock at Hendon, by Protheroe & Morris (four days).
WEDNESDAY, Mar. 8 — Sale of Palms, &c., at Stevens' Rooms.
THURSDAY, March 9 — Sale of a Collection of Amaryllis, at Stevens' Rooms
FRIDAY, March 10 — Sale of Natural History Specimens, at Stevens' Rooms.
SATURDAY, March 11 — Sale of Hardy Ornamental Trees and Shrubs, at Stevens' Rooms.

THE paper on FALLACIES IN FRUIT CULTURE, which was read by Mr. SHIRLEY HIBBERD before the Society of Arts recently, has, to use a cant phrase, fluttered the Volscians. We cannot doubt, however, that benefit will result from this stimulant to the circulation. The points which appear to have exercised the minds of the readers of Mr. HIBBERD'S lucubration admit of being classed under two perfectly distinct categories. A clearly defined classification is a great advantage—always provided that, unlike the pulpit discourses of some worthy but wordy ecclesiastics of the pre-ritualist school, it do not include too many headings. In the present case, and for present purposes, there are but two—first, the circumstance that such a paper should have been read at a lay society, and not before some recognised horticultural assembly; and next, the rights or wrongs of the paper itself.

As to the first point, even the most earnest adherent of the Royal Horticultural Society would admit that the author enjoyed perfect liberty to propound his thesis wherever it pleased him so to do. We regret, as do others, that the Royal Horticultural Society should not have been deemed a fitting place for such a disputation, but the sister Society has done such good service in all ways, and is so catholic in its objects, that we are far from grudging her any communication that happens to fall to her share. Only we wish that similar communications should be made to the Royal Horticultural Society also. At present we own there is a dreary prospect there, but it was not so in the past; it will not always be so in the future. The experiment of the evening lectures tried a year or two since was a failure—why, we hardly know; the weather had a good deal to do with it, and the subjects chosen were hardly sufficiently practical. Still we cannot but think that a series of demonstrations or discussions on points of general interest to gardeners and amateurs, and of direct practical importance to both, would be very acceptable. We want to see—to take only one illustration out of dozens that will occur to every gardening mind—we want to see a professor of the art of pruning, as glib and ready of speech as dextrous with the knife, place before his hearers and his spectators a maiden fruit tree, one in the first, second, third year of its existence, and so on, and demonstrate how such tree should be pruned and why. The demonstration and the accompanying explanation should be practical, the outcome of long experience and acquired skill, the putting into practice of the theories of those who make it their business to study the machinery of and the work done by plants *per se*, and without direct reference to the artificial requirements of the cultivator.

This brings us at once to our second heading. Mr. HIBBERD'S paper was in some sort a pugnacious, an aggressive, one—not offensively so of course, but it was we presume cast in the peculiar mould it was purposely to arrest attention and provoke discussion. No one will deny that there is an ample field for debate—no one will gainsay that there is a great deal to be said on both sides. And, following the train of thought we have hinted at, it requires no great amount of perspicacity to see that Mr. HIBBERD is from some points of view perfectly in the right, however much his assertions may go against the grain of some folks. It is the old, old question—How should we prune? or, rather, should we prune at all? Well no doubt if we had the plant and the plant only to consider, we ought, under a healthy state of things, never to prune at all, whether for timber or for fruit. Just as modern surgeons deem it their chiefest glory to avoid the use of the knife—to practise what in chirurgical slang is called "conservative surgery," so thoughtful gardeners should hesitate to use the knife, unless there is absolute necessity. Again, in olden times, limbs were amputated, teeth extracted, and countless horrors then deemed necessary were perpetrated. Now-a-days all this is avoided as much as possible, a small—relatively—operation is done where formerly a "capital one" was universally practised. Moreover, anæsthetics and every means that can be devised of lessening the pains and perils of the knife are now employed. All these facts, and they are facts, ought to be well pondered over by the anti-vivisectionists, for they are the result of the well-devised experiments condemned by them. But this by the way—our concern is with the gardeners. They, too, may aptly learn a lesson from the doctors. They, too, may learn to look almost with reverence on the tissues they can destroy or remove, but which they cannot replace. They, too, should make experiments carefully, reverently, remembering that they also are dealing with life—with a something beyond their ken, it may be, but still a something which always pays practically for investigation and study—and where no fear of ignorant clamour and well meant but injudicious interference is likely to arise. But what has all this to do with pruning Apple or Pear trees some may ask? We submit that it is quite relevant, but to shorten a long story we lay it down as a principle that, taken in the abstract, and having reference solely to the life and vigour of the plant, all pruning is mischievous. The application of this principle to practice, and the countless modifications which the requirements and means of the cultivator imperatively demand, is far too wide and multiform a subject to be discussed within the limit of an article. Still, admitting that under most circumstances some amount of pruning is requisite in order that the demands of the cultivator may be adequately fulfilled, it is yet clear from the teachings of science that the practical rule to be laid down in all cases is not to prune more than is strictly necessary. It may be much, it may be little, but it should in no case be more than necessary. The exact amount, the preferable manner, the due season—all these depend on the individual plant (it is not enough to say a Peach or a Pear, but on the individual plant), on the climate and other surroundings, or the need of the cultivator; in fact, on circumstances which must be dealt with on the spot. If the art is practised by a man of thought and experience, then success may confidently be looked for; if by a mere book-pruner or by a novice—one without native tact and experience, it is no wonder that failure results, and that inconsiderate bystanders should discourage all pruning whatever.

—— THE following letter, issued as a suggestion to the Council, advocating the claims of the ROYAL HORTICULTURAL SOCIETY on the community, and setting forth the desirability of establishing "Guinea Fellowships," is from the pen of Mr. G. F. WILSON. When reconstruction does come, as it must do, though we fear it is not so near as we had hoped, Mr. WILSON'S scheme will be found worthy the greatest consideration:—

"The Council of the Royal Horticultural Society apply to the horticulturists of the country under circumstances of great difficulty. The Society is doing important and useful work which benefits all who value their gardens or who care for fruit, vegetables, or flowers. Its Scientific Committee is now the recognised authority on new plant plagues of all descriptions, and does much other valuable work. Its Fruit and Floral Committees examine new fruits, vegetables, and flowers—work which can only be done by a great central society; their judgments, immediately published by means of the gardening press, are now received with respect through the country. In the Society's garden at Chiswick, flowers, fruit, and vegetables are grown side by side, are tested and judged by the highest authorities, and troublesome synonyms got rid of. The Society's income does not meet its necessary expenditure. Her Majesty's Commissioners will extend the lease of the South Kensington garden if the income of the Society within three years is raised to £10,000 a year. Great efforts are being made to induce residents in the neighbourhood of the South Kensington garden to become Fellows in order to preserve their recreation ground, but it is doubted whether sufficient and timely aid will come in from this source.

"Many of the best horticulturists of the country have held aloof from the Society mainly on the ground that too much of its income goes to keep up the South Kensington garden rather than to advance horticultural science, and in the belief that while resident Fellows have ample consideration for their subscriptions, Fellows at a distance have not so.

"It is now proposed to have two classes of Fellows, those who pay the present subscriptions of £4 4s. and £2 2s., who will have all the privileges of the Society, and those who care only for the horticultural work of the Society; these last will be made Fellows for an annual subscription of one guinea, and will be admitted to all shows, great and small, and to the Chiswick garden, but will not have the use of the South Kensington garden as a recreation ground, or be admitted on Saturday when the band plays, or to any non-horticultural entertainment.

"Country horticulturists are reminded that it is much easier to improve an existing society than to raise up a new one; that the Society has the name 'Royal,' and the garden at Chiswick, with all its old associations; and that a guinea subscription to a working, useful society is a very moderate one.

"The Council now call on all good horticulturists throughout the country, and especially on ladies and clergymen horticulturists, to come forward and help them by sending in their own names as would-be Guinea Fellows, by making lists and forming local committees, and by canvassing such of their friends as would be suitable Fellows, and to do this without loss of time. Any guinea subscriber will be liable only for the amount of his subscription."

—— We desire to call attention to the report of the SCIENTIFIC COMMITTEE OF THE ROYAL HORTICULTURAL SOCIETY, which we give in another column, not only on account of the intrinsic importance of the communications made, especially that on the classification of Apples by Dr. HOGG, but to show that the Royal Horticultural Society does really good serviceable work even now—a fact too much overlooked by the general public.

—— We frequently hear complaints from amateurs respecting the perplexing number of VARIETIES OF FRUITS and flowers offered by nurserymen and florists. This, to a great extent, is the fault of a public ever demanding novelties, instead of sticking to the good old sorts. Under this condition of things we can only recommend persons to leave the selection to a respectable nurseryman, or consult some trustworthy journal or book. One of the propositions laid before the late Pomological Congress at Ghent was the formation of a joint committee of French, German, English,

Belgian, and other pomologists to select fifty of the best varieties of Pear, suitable to the climatal conditions of each separate country or region. The proposition emanated from M. Van Hulle, and he was supported in it by Dr. Lucas, of Reutlingen, and other eminent pomologists. His plan would be to reduce the number of varieties recognised, in the first place to one hundred, and then by gradual selection to fifty. This proposition was very favourably received, but no definite line of action was adopted. As the President observed, only the delegates of properly constituted societies could be permitted to take part in the deliberations of such a committee, and to secure this it would be necessary to consult the various societies interested. He, therefore, suggested that no further step, beyond making the proposition known, should be taken at the time, and it was approved. The number of delegates mentioned for each country was six. Certainly pomologists might effect some good in this direction, but there is a tendency in connoisseurs to multiply varieties, because they can appreciate the slightest differences in the various properties of fruits.

—— The members of the Lindley Club will dine together at St. James' Hall on Wednesday, March 16, when Mr. A. F. Barron, Gardener-in-Chief to the Royal Horticultural Society, will be invited as a guest. The chair will be taken by Mr. Shirley Hibberd.

—— The Vice-Presidents of the Royal Horticultural Society for 1876 are Lord Alfred Churchill, Hon. and Rev. J. T. Boscawen, G. Clark, Esq., and H. Webb, Esq., the Treasurer. The following *bonâ fide* gardeners have been recommended by two Fellows and elected in accordance with the recent provisions for the admission of members of the craft, namely, Mr. J. Croucher, Mr. T. Baines.

—— Scone Palace, the seat of the Earl of Mansfield, so famous in Scottish history, narrowly escaped destruction by fire on Sunday morning last. The fire broke out between 3 and 4 o'clock in the morning; and on the arrival of two fire-engines from Perth, the firemen found that the bakehouse, laundry, and washing-houses were all on fire. These houses form a right angle behind the Palace, the bakehouse being only 12 feet distant from the Palace itself. Two small engines belonging to the Palace were at work, the efforts of the workmen being directed by Lord Stormont. The fire brigade continued to work till about 8 A.M., when the fire was completely extinguished. The fire originated in the bakehouse, but the cause is unknown. The damage is estimated at £400. Lord Stormont had a window of the Palace next the fire built up with turf, which prevented the Palace taking fire.

—— We have received from Herr Wilhelm Büchner, Löberstrasse 42, Erfurt, a copy of his Vegetable Album, which consists of four large sheets, containing coloured illustrations of over one hundred varieties of vegetables which he has cultivated on his own grounds for a number of years. Herr Büchner tells us that the representations have been conscientiously painted true to Nature for the purpose of showing the results which the seeds of his cultivation are to give; and, if such be the case, all we can say is that the climate of Erfurt produces differently coloured Cabbages, Greens, Savoys, Cauliflowers, Radishes, &c., than those we are accustomed to see; and some of the Cabbages, if of the same colour as these, we should most decidedly object to eat. However, Herr Büchner's *Album* will be of value, as a means of identification in the hands of foreign seedsmen, to whom he proposes to dispose of his produce direct, instead of selling them, as he has done so far, to the seed houses of Erfurt and Quedlinburg. The *Album*, the production of which we must say shows a commendable spirit of enterprise, is to be continued yearly, and the next number will contain another selection of vegetables, and some summer flowers, such as Asters and Stocks, &c.

Fig. 56.—The Sikkim Cucumber (see p. 299).

—— The next meeting of the Institution of Surveyors will be held on Monday evening, March 6, when the discussion on "The Agricultural Holdings Act," adjourned from the last meeting, will be resumed. The chair to be taken at 8 o'clock.

—— We have received a statement of the accounts relating to the International Potato Show, held at the Alexandra Palace last year, from which it appears that the subscriptions amounted to £147 15s., and the fees for entries to £6 5s. 8d.; total, £154 0s. 8d. The amount paid in prizes was £115 7s.; stationary, stamps, printing, advertising, £21 13s. 2d.; expenses of secretary, committee,

judges, carriage of goods, &c., £17 12s. 11d.; total, £154 13s. 1d. Deficit, 12s. 5d.

—— The thirty-third anniversary festival in aid of the funds of the GARDENERS' ROYAL BENEVOLENT INSTITUTION will take place at the Albion Tavern, Aldersgate Street, on Friday, June 30, when ROBERT HOGG, Esq., LL D., one of the Vice-Presidents, will take the chair.

—— We are so accustomed to restrict the name DEODAR — a title, by the way, which, although Indian, has become almost a part of the English language—to the beautiful Cedrus Deodara, one of the most elegant of our lawn trees, that it is somewhat surprising to find that it is extended in India to other coniferous trees, such as Cupressus sempervirens and the Yew (Taxus baccata). Dr. BRANDIS tells us that the last-named tree is abundant, though very local, in various parts of the Himalayas, the young brilliant green shoots being put forth in April and May, and the flowers opening between March and May. The wood is employed in India for the same purposes as in Europe—bows, carrying-poles, and furniture are made of it. It "is held in great veneration in some parts of the north-west Himalaya; it is sometimes called Deodar (God's tree); the wood is burnt for incense, branches are carried in religious processions in Kumaon, and in Nepal the houses are decked with the green twigs at religious festivals. The bark is exported to Ladak from Kunawar, to be mixed with tea, and to be used as a red dye. In Kunawar a decoction of it is administered for rheumatism. The branches are used to support earth roofs." The leaves are exported to the plains of the Punjab, and are used in medicine as a stomachic, while the berries are eaten by the natives of the north-west Himalayas.

—— Mr. WILLS, of the Royal Exotic Nursery, Onslow Crescent, had the honour of receiving the commands of H.R.H. the Duke of EDINBURGH for the FLORAL DECORATION OF THE ROYAL ALBERT HALL AND THE ROYAL BOX, on the occasion of the recent State concert there. Mr. WILLS also supplied the bouquets presented to HER MAJESTY, H.R.H. the Princess of WALES, and H.R.H. the Princess BEATRICE. HER MAJESTY'S bouquet was composed of Roses, Eucharis, Odontoglossum Alexandræ, the chaste and beautiful Cœlogyne cristata, Violets, and Lilies of the Valley; that of H.R.H. the Princess of WALES was quite unique, and contained Neapolitan Violets, the lovely Dendrobium Wardianum, Lilies of the Valley, and various other gems; the Princess BEATRICE'S was was composed of various Orchids, Lilies of the Valley, Roses, Eucharis, Lilac. All were surrounded by Brussels lace holders.

—— Amongst the productions of English exhibitors at the forthcoming CENTENNIAL EXHIBITION AT PHILADELPHIA not the least interesting to American horticulturists will he the collection of garden pottery ware which Mr. MATTHEWS, of Weston-super-Mare, has arranged to send over. Mr. MATTHEWS has the collection complete now, and arranged in the order in which it is to appear at Philadelphia. On a carved stand in the centre are displayed Italian baskets, rustic floral arborettes, rockery arborettes, Fern baskets, Orchid suspending baskets, pretty specimens of Grecian pottery, and small vases of various designs, whilst at the base are several large and handsome vases, on stands, prominent among which we may mention the Palmerstonian, Pigott, Denisonian, Colston, and Sir John Hare. In the front centre is a large fountain—the design being shells and birds—and on the opposite side an immense eagle.

—— Does the present VEGETATION OF THE GLOBE present any common and distinctive characters by which it might be recognised in the event of its becoming fossilised? Such is the query heading a short article from the pen of M. ALPHONSE DE CANDOLLE in the *Archives des Sciences de la Bibliothèque Universelle*, of which we have received a reprint. The learned author asks how we are to distinguish an epoch in paleontology, or even in geology, if we persist in regarding the evidence afforded by fossils as the basis of, and not accessory to, geological distinctions. He has sought in vain for characters in the vegetation of the present epoch that would enable future geologists, in case of an universal catastrophe, to refer the fossilised remains in distant parts of the world to the same period. Considering ours as the continuation of an epoch including not only the pliocene, but also the miocene deposits, the same difficulty presents itself. There is no such thing, in the true sense of the word, as a cosmopolitan species, and although some genera and families approach closely to that character, there are vast expanses from which they are excluded. Taking the Compositæ as an illustration, the writer observes that the proportion of any one family to the others would furnish no better guide. Although so widely diffused, the Compositæ are very unequally distributed. In some parts of Chili and the island of Juan Fernandez, they form 20 to 25, and even get as high as 33 per cent. of the whole phænogamous flora, whereas in British Guiana they form only three, and in Java and Tahiti only 2 per cent. It is true that grasses and lichens are more universal, but neither these nor the Composites are peculiar to our epoch. How are we to know, he inquires, what was passing in Australia or South Africa, or even in the less distant countries of North America and Spitzbergen, when Conifers abounded in Europe? We may know a little something respecting the order in which the strata were deposited in these several countries; but even if they contain the same species of fossil, we are not to conclude that they were deposited at the same date, because we might err. Going back to the older formations M. DE CANDOLLE thinks there were fewer local diversities, but yet no one would venture to assert that during the formation of a certain bed of coal, in Pennsylvania, for instance, there did not exist, perhaps in some remote part of the world, an elevated, less humid region where phanerogamous angiosperms were growing at the same time. The result of the writer's researches is that he grants that epochs of changes in different countries or regions may be determined, but not universal epochs. A similar series of epochs may be traced in different countries, but it does not follow that they were contemporaneous. This appears to be a very reasonable view of the matter.

—— The question of RAISING HICKORIES (Carya) FOR PLANTING for timber in North Germany was discussed at a recent meeting of the Horticultural Society of Berlin; also which of the species are suitable for the purpose. The result of the discussion will be made public in the form of a special report. At the same meeting it was mentioned that Pseudolarix Kœmpferi is perfectly hardy, having withstood 28° of cold with only slight injury. This is presumably 28° of Reaumur's scale, which would be 28°.75 below Fahrenheit's zero, or 60° of frost. Dr. BOLLE said that it bore the erroneous name of Japanese Golden Larch, and he tries to show that the name is inappropriate to it as far as the first part is considered, because it is a native of North China, and not of Japan; but according to FORTUNE it bears the name of Kin-le-sung, or Golden Pine, in its native country. In English catalogues it bears the name of Golden Larch, and as it resembles a Larch more than a Pine, the name might be retained. Dr. BOLLE objects that it changes to a dirty leather yellow rather than a golden hue. However, Mr. FORTUNE says that the leaves and cones assume a rich yellow in autumn.

—— From a Parliamentary return just issued we glean the following details relating to the quantity of land cultivated as ORCHARDS, MARKET GARDENS, NURSERIES, and WOODS in Great Britain. The grand total in acres is as follows:—Orchards, 154,584; market gardens, 38,957; nursery grounds, 12,042; woods and coppices, 2,187,078. The counties in England whose acreage in orchards exceeds 20,000 acres are Devonshire, Herefordshire, and Somersetshire; those whose acreage is over 10,000 are Gloucester, Kent, and Worcester. The acreage for market gardens is largest in Middlesex, viz., 5221 acres. Essex comes next, with 4110; then Kent, 4028. All the other counties are far behind, those adjacent to the large towns, such as Manchester and Liverpool, having naturally the largest acreage. The acreage per county occupied as nursery ground for growing trees, shrubs, &c., varies from 10 acres in Rutlandshire and 12 in Bedfordshire to 1334 in Surrey, this latter county having by so much the largest acreage that even Kent—the next on the list—has only 618 acres. Middlesex has 592 acres, Sussex has 493 acres, the West Riding of Yorkshire, 471, Derby, 402, Essex, 415, Cheshire, 426. While the total acreage in England of orchards is 150,600, and in Wales, 2535, in Scotland it is only 1449—an eloquent exposition of the influence of climate. There are 35,364 acres of market gardens in England against 712 in Wales, and 2881 in Scotland; 9837 acres of nursery ground in England, 463 in Wales, and 1742 in Scotland; 1,325,765 acres of woodland in England, 126,823 in Wales, and 734,490 in Scotland. In Scotland the nurseries have an acreage of 530 in the county of Edinburgh, 198 in Aberdeen, 115 in Dumfries, 105 in Forfar, 111 in Ayr, and 100 in Perth. All the other counties have an acreage below 100, while several, as might be anticipated, have none at all. Such is the march of improvement in some counties, as in Sutherlandshire, for example, that we make no doubt nurseries will speedily be established there for the supply of local demand.

—— A few NOTEWORTHY CLIMBERS are IN FLOWER in the conservatory AT KEW. The first is Akebia quinata, which, though quite hardy, is of much value for the greenhouse. The branches are loaded with its peculiar sweet-scented purple-brown flowers, and hang down in graceful festoons. In China it climbs on trees and in the hedges; out-of-doors with us it may be planted against walls. Myrsiphyllum asparagoides is already known from the use of its long branches in forming wreaths, &c. In America it is more largely used than with us, and is often grown in numbers. There we believe it is even used in a green state for trimming ladies' dresses. The branchlets of the plant we have now in view are loaded with its small greenish white flowers, which are lit up by the bright red anthers, rendering the whole of increased beauty. Hibbertia dentata is another fine plant; the large golden-yellow flowers form a rich contrast with the coppery foliage and red stems. There is a succession of bloom for some time, but when cut the petals unfortunately soon fall. Clematis indivisa is the last climber we have to mention. It is covered with a profusion of white flowers, from 1½ to 2 inches in diameter. The dark evergreen foliage is also ornamental; the leaflets are sometimes entire, but others, indeed the greater number, remind one of an Oak leaf. In New Zealand it is said to cover the trees with its dense foliage and large panicles of white flowers. They first open with a shade of green, but soon change to pure white. Among other plants in flower are Imantophyllum miniatum, Cytisus filipes, Orobus vernus, and Polygonatum multiflorum, each of which is indispensable among the ornaments of the season.

Home Correspondence.

The Royal Horticultural Society.—The harmonious settlement of all differences [?!] at South Kensington the other day has for the present averted the necessity of extreme measures, and given the resident Fellows another chance of preserving the garden at South Kensington for themselves and the Society. The steps agreed to having received the approval of their representatives on the Committee of Conference, we may assume that they are such as are acceptable to them, and the Fellows in general will watch with interest the amount of support that the new scheme receives from them. According as they do or do not take up the six-guinea tickets so must the future of the Society be. We hope that the Council will gratify the curiosity and interest of the Fellows by telling them, after they have got in the replies to their circular, what amount of success they have met with. Until this is known it is premature to speculate on the future. But one thing can scarcely be called speculation, and that is, that whether the scheme prove successful or not as regards the residents and the garden, it will be necessary before another year comes round to reconsider it as regards the privileges of the general Fellows. They deserve infinite credit for the self-denying spirit in which they have submitted to have their privileges sacrificed to enable the Council to carry out their policy with the residents. They have been told or felt that it was for the general good of the Society that they should do so, and they have submitted almost without remonstrance; but the object once achieved they will not be willing to make the sacrifice longer. They are by no means blind, although they have been dumb; and the first indication the Council may receive of their dissatisfaction may be another flood of resignations in December sufficient to neutralise the whole benefit of the six-guinea tickets. It is a rock ahead which it is well to take early note of, and no one who hears the talk

of the Fellows among themselves can doubt that it is a serious one. *Andrew Murray.*

—— Will you admit one or two reflections on the meeting of last Thursday? 1. That those who chanted loudest the praises of concord and unanimity were leaders in the disturbances of 1873; it is well if they have seen the evil of their ways. 2. That the hope of keeping the Society alive seemed to rest on the house-to-house canvass, bringing in enough Fellows from the neighbourhood to raise the income to £10,000 a year. Will this be done? Mr. Freake is deeply interested in keeping the square for his houses, and the Commissioners must dread the work and responsibility of keeping up the gardens themselves, so there will be strong influences in aid brought to bear, but there is considerable leeway to bring up, so I rather doubt the success; but if it come, how will horticulture be affected? It has been lately repeatedly said, let us get into funds through the subscriptions of the neighbouring householders, and then we will do great things for horticultural science. I fear, if a prosperous time come, that those who created it will have a right to say We bring in the money; it is our interests that must be first consulted. Every month the Society and I live strengthens the conviction that country Guinea Fellowships is what the Society requires. If this be so, persistence in its advocacy is all that is wanted, and this it shall have. I have given substantial proof of wishing to serve the Society; but if it is only to be saved from absolute bankruptcy, or even to recover to the half-alive state it has been in for the last few years, surely the sooner it is out of the road the better. *George F. Wilson, Heatherbank, Weybridge Heath, Feb.* 28.

Hardy Bulbous Plants in Flower.—Crocus Imperati, with its black-striped, fawn-coloured outside, and purple inside, is still beautiful, although the frost and snow tried it severely during the four weeks which it has been in bloom. C. sibirica, like its sister Imperati, has also had its trials during the past three weeks, but the yellow-based purple flower is still beautiful. C. aureus, the most golden-flowered of the family, is expanding its blooms without a sign of foliage. C. Cloth of Gold, of which many varieties appear to differ from those ordinarily sold in shops, includes amongst others C. Retii auritextus, with its short leaves and petals, marked with rich crimson black, growing in a compact little clump. I find also another under the name C. stellatus; it is large in flower and foliage, and is very conspicuous when the early Cloth of Gold is just passing out of bloom. C. biflorus—the Scotch Crocus of the shops—has the outer petals striped white. I have under the name argenteus a variety which stands midway between Imperati and biflorus; the outside is fawn striped with brown, and the inside of a pale lavender. The C. biflorus of Parkinson differs from argenteus in being a trifle smaller flowered. C. bottergele (of the Dutch), and a variety called Early Yellow, which is about a week later than bottergele, are early varieties of the large yellow of the shops. C. stellaris, a name I had from Holland, is a rich yellow, striped with crimson-brown. C. sulphureus striatus, not sulphur-striped crimson-brown, is distinct from stellari. The Crocus gathered by Mr. Elwes in Asia Minor ranges from pure yellow, through every shade of stripe, to bronze-crimson outside of petals. Besides the Crocus named a great variety of forms are now opening, of which more anon. Now to come to the Galanthus, first amongst which is nivalis, next in size comes Elwesii with its self-coloured glaucous foliage, then plicatus with its channelled leaf, and last Imperati, the largest of all. Amongst Scillas the most intense blue is sibirica. Of Cyclamens a chapter might be written; I will only notice that now verna, iberica and Atkinsii are in full flower, and have been so since Christmas. Iris reticulata, var. Krelagei, with purple-red sprays, is the first in flower; the gold-blotched and gold-margined foliaged Lilium candidum has been conspicuous throughout the winter; Leucojum vernum is a beauty of no small merit. Hellebores in several varieties have been flowering through the winter months, and Hepaticas, both red and blue, are now opening. Narcissus (Corbularia) monophyllus is now in bloom with me, and is a perfect little gem, white as snow, and perfect in form. *P. Barr.*

The Centennial Exhibition.—The latest reports from Philadelphia that we have received state that the Horticultural Hall, of which we give an illustration (fig. 57), was completed by the middle of last month, and subjects for exhibition were at once received. The hothouses are now in operation, and the beds are prepared for the reception of Palms, Bananas, and other tropical plants. The building, which is one of thirty-five structures erected and being erected in Fairmount Park, for the purposes of the Exhibition, has been very substantially built, and will stand after the close of the Exhibition, as a permanent addition to the attractions of that extensive and charming place of public resort.

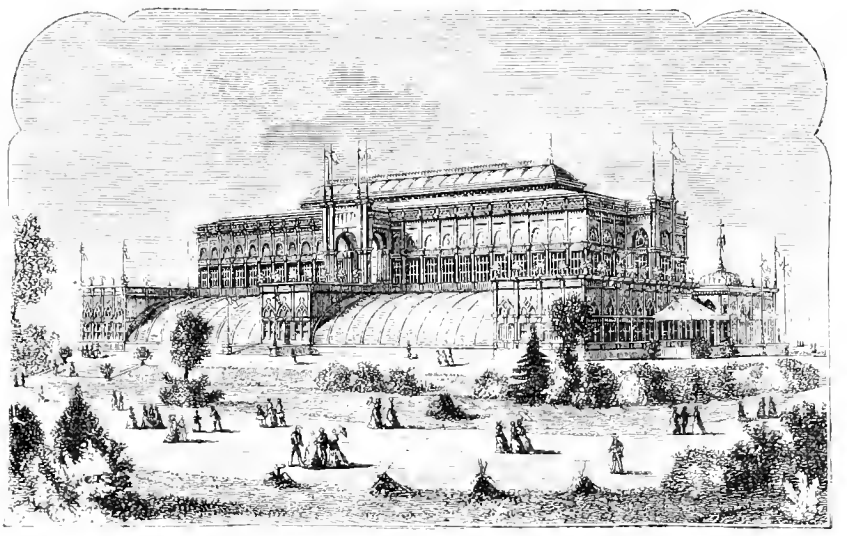

Fig. 57.—The Horticultural Hall at Philadelphia.

Turnmoss Red Celery.—I observe in your last number a letter from Messrs. Copeland & Doran, of Turnmoss Gardens, Stretford, near Manchester, referring to this Celery. I am in a position to state positively, and of my own knowledge, that it emanated from the late Mr. Wilcox, who for some time was gardener to the Earl of Stamford and Warrington, at Dunham Hall, Cheshire. From twenty-five to thirty years ago Mr. Wilcox presented it to Mr. Robert Clark, who then carried on business as a market gardener at Turnmoss, and who was succeeded by Messrs. Copeland & Doran. Mr. Clark, who was a most excellent judge and cultivator, always esteemed it most highly, and ever since it came into his possession it has been very largely cultivated at Turnmoss. Assuming the late trial at Chiswick to be reliable, which Mr. Ramsay admits, it is quite certain that both Ramsay's Solid Red and Leicester Red are misnomers, and should be withdrawn at once, and that for the future it should be called Turnmoss Red. *Samuel Simpson, Solicitor, South Gate, Manchester, Feb.* 28.

Pyrus domestica (the True Service Tree).—I see it mentioned by "J. C. N.," in the number of the *Gardeners' Chronicle* for Feb. 19, that "I have been told that most of the specimens now growing wild in this country are in or about Bewdley Forest." Now to prevent any roving botanist from fruitlessly exploring Bewdley Forest for this tree, it may be well to state that only one tree of the Pyrus domestica has been known in the present century as growing in Bewdley (or more properly Wyre) Forest, nor do I believe there was ever any other. This solitary tree, which from age had got into a very decrepid state, was wantonly burned down by some marauders in 1862, but in my *Botany of Worcestershire* I have given a portrait of it, as it existed in 1856. The late Earl of Mountnorris, who resided at Arely Castle, in the vicinity of the forest, sent specimens from the tree mentioned to the late Sir J. E. Smith, and I have often visited the tree in its position within the wood, about half a mile from Mopson's Cross. Lord Mountnorris obtained (as I was told when at the Castle some years ago) a large number of grafts from the tree in the forest, but only one of these maintained its life upon a Mountain Ash. This tree, which still exists in a flourishing state in the gardens at Arely, now belonging to Robert Woodward, Esq., bears an abundance of fruit, as I have seen. At this time no wild tree of P. domestica exists in any part of Great Britain. Even with regard to the solitary tree formerly in Wyre Forest, from the remnant of some ancient building that I discovered hidden by bush-wood near the tree, I had reason to believe that the Pyrus had been brought from the Duchy of Aequitaine (where it is a native) by some recluse, at a time when that province was under English sway. It had always been regarded with reverence by the country people about the forest, who called it the Witty [This name is applied about Ludlow, in Shropshire, to the Mountain Ash. Eds.] or Witten Pear tree, meaning the Tree of Knowledge, and I have seen its long-enduring fruit hung up in houses and said by the rustic inhabitants to be as a "protection from the witch," whose "evil eye" is yet believed in by country folks in obscure localities. *Edwin Lees, Esq., F.L.S., Green Hill Summit, Worcester, Feb.* 23.

The Strawberry Grape.—This Grape is believed here (Milan) to be a sport from an American Grape, known under the name of Isabell. Half a century ago this Grape was sought for by some people on account of its novelty and peculiar flavour, but never having gained the favour of the public, by whom it was pronounced unpalatable—even nauseous, and unfit for making good wine, it was almost entirely rooted up, and is not now, as your correspondent at p. 147 asserts, extensively cultivated in Italy. The leaves of this variety are quite distinct from those of the common Vine, and it is never infested with blight. It is used only as a strong spreading creeper for covering rocks and high walls, and thought good for nothing else. The statement that the Strawberry Grape is a hybrid between a Vine and a Strawberry has caused some surprise here! [As well it might. Eds.] *A Lomba dy Amateur Gardener, Milan.*

Notes on Oaks.—In the *Gardeners' Chronicle*, October 8, 1870, p. 1342, and August 23, 1873, p. 1141, Messrs. J. W. Ostolander & Son say that Quercus nobilis is a hybrid between Q. pedunculata (Robur) nigra and Q. americana. You say (*Gardeners' Chronicle*, December 25, 1875, p. 816), that it is obvious that it is a seedling form of Quercus nigra, the North American "Black Jack" Oak. Which is correct? [We referred to the specimen before us at the time of writing. Eds.] Q. pedunculata nigra is, of course, quite different from the North American Q. nigra. What is Q. americana? I cannot find the name in Loudon's *Arboretum*. Are we likely soon to have an English translation of Koch's *Dendrologie*? [We fear not. Eds.] If not, would it be possible to bring out parts of it of the size of and with plates similar to Lawson's *Pinetum Britannicum*? *Charles Palmer, Manchester.*

The Phylloxera.—Referring to your notes on the Phylloxera at Gunnersbury, perhaps the following remarks, which refer so far to my experience of it, may not be out of place. When I was at Lord Harrington's, one vinery there was planted twice in consequence of this pest. In the first instance the house, from being a Peach-house, was converted into a vinery. When the Vines were planted they did well, made strong canes, grew vigorously, and soon ran up to the top of the house. The next year, after they broke, they did little good, and indeed died away. They were then torn out, and the house was well washed and cemented along the bottom and up the brickwork inside the house. Fresh Vines were then planted, which did, I was told, equally well the first year, with the same result on starting them as in the former case. When I went there, towards the beginning of winter, the house was empty, and as for Phylloxera I knew little or nothing about it—nothing from experience. Well, it was to my interest to make the most use of the house, and I could not see how I could better do this than by taking out a crop of Grapes from pot Vines; so the idea was put in practice. Young Vines were started from eyes early in January, and a number of young plants

were grown in the house—prepared for next year's fruiting. No Phylloxera made its appearance that year. The next year we fruited the pot Vines. We had a row along the front of the house, which is a lean-to, and another row set on a raised plank half way up the house, and the young canes in this way filled the house. The fruiting of these Vines was very successful, but if I had known at first what I knew then, I would have planted the house of permanent Vines and risked it. During my time at Elvaston I never saw the Phylloxera, and each year the Vines in all the houses improved in condition. You say Vines are breaking weakly this year in many places. I never had such a good early house up to the present time. It is a mixed lot, and they are worse to do that way. The Hamburghs are set and Muscats coming into flower. I enclose you a piece of matting, which is the length of the largest [13½ inches] or thereabouts of the Muscats just coming into flower. The Vines are about thirty years old, and perhaps bore as good fruit last year as ever they did. *Robt Mackellar, Abney Hall.*

Gladiolus.—It is perhaps rash to offer a reply to the editorial query why this word should not be pronounced "Gladjŏlus," but I hope I may be forgiven for suggesting that such pronunciation is unknown in Latin, and that in English *Injun, ojus, hidjus* are not now accepted as fair representatives of "Indian," "odious," and "hideous," though they may have been "fashionable" in the days of George, Prince Regent. *T. F. K., Feb. 24.*

Plant Names: How to Pronounce Them.—I have long been aware of the existence of Loudon's *Encyclopædia of Plants*, and also of his *Hortus Britannicus*, in which the names of both genera and species are accented; but I do not think the author of these works could be effectively cited at a pronouncing bee as a standard authority against any refractory candidate who would point out his palpable errors (repeated in the general index), in the accentuation of the following words, for example:—Do'nax, Tricho'manes, Dro'sera, Argemo'ne, Arcto'pus, Leucoco'ryne, and Hydropi'per (this last happens to be properly accented in the general index, but that, of course, would only augment the confusion in a case of dispute). Neither can one learn from these works the true pronunciation of such common names as Dahlia or Fuchsia—the latter of which, I may observe, as usually sounded, does not in the least recal the memory of the botanist after whom the plant was named, and is not even articulated in accordance with the letter-sounds of the English language. My previous remarks were simply intended to bear upon the difficulty of holding a botanical pronouncing bee, as compared with an ordinary spelling bee, where the candidates have only to agree beforehand as to what standard dictionary they will abide by, and then all that follows is plain sailing. Mr. Grindon questions whether I can "indicate half-a-dozen botanical names of Greek origin, such as are likely to be heard or wanted, say no oftener than once a year, which a good Greek lexicon would fail to tell the pronunciation of." Well, I find more than that number of such words in the first three pages of a nursery list of Ferns, published last year, viz.:—Asplenium *schizodon*, Cheilanthes *micromera*, *Cyathea* dealbata, *Hypolepis amaurorachis*, Pellæa *calomelanos*, and *Platyloma* cordatum. The pronunciation of the words here printed in italics will not be found in any Greek lexicon. Certainly, any one who has acquired so much of the language as will enable him to resolve these and similar words into their primitives, will find the lexicon a help in making out their pronunciation. I am not thinking of such persons, however, but rather of the "small Latin and less Greek" of Smith, Brown, Jones, and Robinson in the bothy, who, after reading Mr. Grindon's article, have clubbed together and bought a second-hand lexicon, and perhaps a Greek grammar, and are hammering away at Alpha Beta, in the expectation of thereby being enabled forthwith to pronounce correctly all the hard plant-names that come before them as easily as they could do a sum in simple addition. I must say that I had no idea that Mr. Grindon's suggestion of the pronouncing bee was anything but a serious one, introduced, as it is, by his argumentative and apparently serious laudation of its elder and now swarming relative, the spelling-bee. I am greatly relieved, however, by his explanation that the whole article was "half playful in some of its utterances," as I can now fully understand what had previously puzzled me in his statement that "the correct pronunciation of Greek and Latin natural history names, including botanical ones, belongs, on the other hand, to a far more delicate sphere of knowledge. It pertains to the higher platform of aural civilisation, [the region of the invisible and the intangible," &c., followed shortly after by another statement that "Every man and every youth who loves his plants, and desires to be correct in his names on first principles, may acquire Greek enough for the purpose as readily as he learned his simple arithmetic." When Artemus Ward wished his readers to know that certain passages of his were facetious, he used generally to advise them of it by adding, "N.B. This is a goak." *Ebor.*

How about Selling the Lime?—Your correspondent under the above heading seems to think an insuperable difficulty exists in disposing of any surplus lime, I can only say I should be happy to contract with any one for the supply of any quantity, large or small, at a fair remunerative price, so as to compete with the Welsh burners. Farmers are at present using it largely for pastures, finding that the grass is much sweeter after a good spring dressing. *James F. Robinson, Frodsham.*

Dendrobium crassinode and Wardianum.—To many an Orchid grower who was fortunate in getting a number of the imported Dendrobiums that were sold at Stevens' Rooms in the early part of last April, the present time will be one of very great interest and pleasure. The plants for the most part will have grown very freely and formed nice plump bulbs, and provided these were well matured they will have in due course pushed out a number of flower-buds a good part of the length of the bulbs. The interest then will be one chiefly of eager expectation, as gradually the buds swell and the flowers expand in all their freshness and beauty, the pleasure and intense satisfaction at finding such fine varieties among them will amply compensate for all the patient waiting so many will have been compelled to endure. The crassinodes which are now flowering with us are far superior to most, perhaps all, of the original plants that have hitherto come under my notice, fully confirming all Professor Reichenbach wrote respecting it after receiving a flower from the collection of T. Barber, Esq., of Derby. When the plants will in another season or two make bulbs 18 inches to 2 feet long, it will, there can be no doubt, on account of its free blooming qualities and also its property of retaining its blooms so long in perfection, rank as one of the very first of the winter blooming Dendrobiums. I send you with this four blooms that I have just cut from a number of plants we have in flower. No. 1, a very fine flower, large in every part, well coloured, and of very fine substance. No. 2, rather smaller, but much deeper in colour, the two lower sepals reflected in a very curious manner. This I consider the prettiest one we have in flower. No. 3, very like the old varieties; No. 4, very distinct, being almost pure white, the least tinge of purple being perceptible on the sepals and petals, the yellow in the throat being as bright as in most of the others. In growth this last one is rather different to the others, the nodes being not so large, and also farther apart on the bulb. The Wardianums also are now flowering, and are most beautiful, though it must be a fine thing that can eclipse the old Assam variety of this most beautiful Dendrobium. There will certainly be many varieties among these, and probably some will be considered but moderately good. However, when they have been cultivated a season or two more, there can be no doubt that this species will be eagerly sought after by all who make any pretensions to a collection of Orchids, large or small. I send you two blooms of this; that marked No. 5 we consider a very fine bloom, good colour, and substance, the ivory whiteness being exceedingly attractive; No. 6, a fair bloom, but lacking somewhat in the deep brown spots in the centre of the labellum. With the crassinodes these are now making a fine display. I also send you three blooms of a French strain of Cinerarias I am growing this season, which I think very fine, the two self-coloured ones being especially so. *W. Swan, Fallowfield, February 23.* [Can the thick-stemmed, thick-jointed plants, imported as Wardianum, be the same as typical slender drooping-stemmed plants? EDS.]

The Horticultural Club.—With reference to the remarks of your correspondent, "A. D.," will you allow me to say that at a meeting of the committee held last month a resolution was passed to the effect "that during the winter months there be occasionally meetings for discussion," the committee believing that these would be more profitable than set papers? It so happened, without any knowledge of Mr. Shirley Hibberd's intention, the first discussion on the 16th ult. was to have been on the "Principles and Practice of Pruning," but a general wish being expressed that the "Present Position of the Royal Horticultural Society" should be substituted for it, an interesting and useful discussion took place on that subject. Our Club is not a twelvemonth old yet, and I think that if horticulturists will have patience we shall be able to meet not only the want indicated by "A. D.," but many others which have been brought under the notice of our committee. Will you allow me to add that we have commenced the formation of a library, and shall be thankful to receive any duplicate works on horticultural or scientific subjects. The following gentlemen have recently been elected members of the Club:—Messrs. J. T. Peacock, Sudbury House, Hammersmith; Henry Webb, Treasurer, Royal Horticultural Society; and A. C. Wheeler, Gloucester. *The Hon. Secretary.*

Reports of Societies.

Royal Horticultural: *March 1.*—The Hon. and Rev. J. T. Boscawen in the chair. The Rev. M. J. Berkeley alluded to one or two matters brought before the Fruit Committee, and remarked, with reference to the Drayton Manor Cucumber—a cross between Telegraph and Masters' Prolific—that it appeared to be a handsome and free-growing variety, but, like the Telegraph, he thought it very deficient in flavour. A curious Turnip was shown at the meeting, which he at first thought was the Black Spanish Radish, but it appeared that the variety was well-known in France as the Long Black Turnip. It was of good flavour, but he thought it was not likely to become popular here. Having made some statements at the last meeting with reference to the Barbe de Capucin and Whitloof, he thought it necessary, as a caution, to mention that seeds of the old and well-known Barbe de Capucin may be sent out as Whitloof, and so cause disappointment. The Whitloof was undoubtedly the best variety. He had to congratulate the Society that at last a system had been invented by Dr. Hogg whereby the immense number of Apples were reduced to order, and a system arranged by which their identity could soon be made out. Further details on this subject will be found under our report of the Scientific Committee. Mr. Berkeley then commented on the subjects brought before the Floral Committee, and remarked, with reference to some Lilies of the Valley shown by M. Herbst that there were clearly two varieties, the one, obtained from Germany, being dwarf and strong; the other, obtained from Holland, being weak and tall. The double flowered white Epacris shown by Mr. Bull was not the first double Epacris that had been seen in this country, *Seemann's Journal* for 1865 containing a description of a double form of E. impressa, and there was some doubt as to whether this plant was the same as that, or a double form of E. onosmæflora. Colonel Trevor Clarke had put into his hands a flower of Crocus veluchensis, a very charming variety. He was glad that the Crocuses were coming into fashion again.

Colonel Trevor Clarke stated that some years ago he had crossed the Telegraph Cucumber with Masters' Prolific, and had shown the result of the cross before the Fruit Committee, who would not look at it; and it did not appear that Mr. Owen Thomas, the gardener at Drayton Manor, had been more successful. He thought the old Telegraph still remained unsurpassed and unsurpassable. With reference to the two varieties of Lily of the Valley he might say that he had had them in his garden for years.

SCIENTIFIC COMMITTEE.—A. Murray, Esq., in the chair.

Coffee Disease.—With reference to the specimens shown on a former occasion (p. 246), Mr. Berkeley reported that he had examined them, and considered them to be attacked by the spawn of a fungus, probably a species of Acremonium.

Diseased Orchids.—Two specimens were exhibited,—one in which damage had been done by the larva of a beetle, probably a species of Baridius; the other suffering, in the opinion of Mr. Berkeley, from the effect of blackspot. The Hon. and Rev. J. T. Boscawen attributed the latter malady to too hard forcing in summer, and cold and damp in winter, the pseudobulb not having been sufficiently ripened off.

Bougainvillea at Bangalore.—Colonel Puckle showed photographs of the beautiful specimen of B. spectabilis, 40 to 50 feet high, growing over a Casuarina at Bangalore, and figured in the *Gardeners' Chronicle* for 1875, vol. iii., p. 181. Unfortunately the plant has been much injured by a storm of wind.

Phylloxera.—Mr. MacLachlan stated that he had made further examination of the specimens from Gunnersbury, and had come to the following conclusions:—1. That they are hibernating larvæ of the leaf-gall form (Gallæcola of Riley). 2. That the roots are not suffering from their attacks, and that so soon as the leaves begin to expand they will desert the roots and form leaf-galls. Time will prove whether I am correct or not. I can see no trace of the tubercles that distinguish the root (or radicicola) form. Dr. Masters' stated that the plan pursued with success by Mr. Dunn, now of Dalkeith, was a hard pruning of both root and branch and a careful and thorough scrubbing and cleaning of the house and Vine, as detailed in the *Journal of the Royal Horticultural Society*, 1872. Dr. Masters further stated that in the opinion of some of the most experienced Grape growers, stamping out was the only remedy worth consideration from a practical point of view. One correspondent, a man of first rank as a gardener, even advocated legal measures to ensure compulsory stamping out.

Monstrous Mushroom.—Mr. W. G. Smith showed

a drawing of a singularly malformed Mushroom, on which he will probably report at greater length on another occasion.

Gross Shoot of Blackthorn.—Dr. Hogg showed a branch of a Blackthorn, Prunus spinosa, from which emerged a very long whip-like shoot, quite unlike the normal shoots. Dr. Hogg considered this to be a case of bud-variation, but from the appearance presented by the shoot in question, and the bark of the branch whence it proceeded, some of the members considered that budding had been practised. It was unfortunate that the leaves were not yet expanded; however, scions are to be tried at Chiswick, which will probably determine the matter. Dr. Masters exhibited similar shoots from the Elm, to which no suspicion of budding attached.

Classification of Apples.—Dr. Hogg, after some preliminary remarks as to the desirability and difficulty of classifying Apples, propounded a new scheme, which he had worked out for himself with much care and labour. Of this scheme we can here only give a brief extract, but hope shortly to be able to revert to the subject. The principal points on which this new classification is based are (1) whether the eye be open or closed; (2) whether the cells of the core—the carpels—meet in the centre, as seen when the Apple is cut across, or whether they do not meet, but leave a gap in the centre of the fruit. In the first case the carpels are said to be closed, in the other open; (3) the form of the calyx-tube within the eye, whether funnel-shaped or conical; (4) the position of the stamens, whether emerging from the margin, middle, or base of the tube. Secondary characters are derived from the position of the calyx-lobes, reflexed or erect; the form of the calyx-tube, conical or funnel-shaped; the form of the fruit, and so on. The committee were unanimous in expressing their sense of the importance of this communication, whose practical value will have to be tested on a large scale next season. Up to the present time it has been used by Dr. Hogg with great success.

Diseased Vines.—Mr. Dyer adverted to some new Vine diseases which had made their appearance in Italy, and exhibited a specimen which had been forwarded by Professor Caruel, of Pisa, in which the bark appeared to be destroyed, and a rough, irregular outgrowth had taken place from the denuded wood. The specimen was not in sufficiently good condition to allow of a definite opinion being given on it. Dr. Hogg, however, suggested that it might be due to the effect of frost.

Tubercles on the Roots of Leguminous Plants.—Mr. Thiselton Dyer, with reference to this matter, alluded to by Dr. Masters at a former meeting (p. 246), called attention to the following remarks from the report of the Commission of the Institute of France on the Phylloxera:—

"The swellings on the roots characteristic of the presence of the Phylloxera ought not to be confounded with those on the roots of leguminous plants in which the presence of a nematoid worm (*anguillulæ*) produces nodular bodies which are often extremely numerous. Haricot and broad Beans, Acacia, Lucerne, and various indigenous plants are all affected, and their roots when happening to be mixed with those of the Vine may give rise to groundless local panics.

"The enlargements on the roots of the Vine are characterised by their form, their colour, and their position. They are often hook-shaped; their surface is furnished with more or less numerous depressions, in each of which are to be found one or more Phylloxeras. When young they are of a bright yellow colour; they pass then into golden-yellow, turning later to brown, and finally they become black. They are frequently terminated by a healthy and unenlarged portion of the rootlet; sometimes such portions are intercalated between the swellings, at other times these are grouped together.

"The swellings of leguminous plants are equally characterised by their form, colour, and position. They are ovoid, more or less elongated, sometimes palmate, but always terminated by rounded extremities. They have no cavities on their surface. Their colour is more or less dull, splashed with yellow, violet, or grey. Their position is generally lateral, rarely intercalary, and they are never prolonged into a healthy radicle.

"The tubercles studied by Woronine, *Ann. des Sc. Nat.*, v. ser., vii. 84, on the roots of Lupinus, were filled with a mass of individuals of a Bacterium. These did not terminate the rootlets. These are apparently different from the tubercles described by Max Cornu and Dumas in the report already alluded to. The question is whether 'hypertrophy' is not always an effect, and not a cause, of the production of tubercles."

Dr. Masters, while acknowledging that hypertrophy was an effect and not a cause, hesitated to accept the doctrine that the tubercles on the roots of Leguminosæ were due to the presence of a nematoid worm. In the specimens examined by him no such creature was visible, nor was it in all cases that the Bacteria were to be seen. He was of opinion that in some cases the tubercles in question might be found without either Bacteria or nematoid worms.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in chair. Messrs. James Veitch & Sons contributed a very fine group of Orchids in flower, which included a hybrid Dendrobium, raised by them from the same cross as D. Ainsworthii, and which is, curiously enough, so nearly like that variety that they have adopted the name. A plant of Odontoglossum Pescatorei, with a well-flowered nine-branched spike; two fine plants of Phalænopsis Schilleriana, Dendrobiums crassinode and Wardianum, very fine; the creamy white Angræcum citratum; a pretty species of Odontoglossum, somewhat of the form of O. Alexandræ, with spotted flowers as in gloriosum or Andersoni, but much prettier than either; the singular Masdevallia nycterinia, with one flower; Lælia harpophylla, Dendrobium amethystoglossum, Vanda cœrulescens, Phaius maculatus, Odontoglossum Roezlii, Dendrobium lituiflorum, &c. The collection was Highly Commended. Mr. B. S. Williams, Holloway, contributed a choice group of flowering plants, which included Amaryllis Mendelii, a fine bright blood-red flower; a selection of a good strain of red and white forms of Primula sinensis fimbriata, Dendrobium Wardianum, D. crassinode, the white Calanthe Turneri, Oncidium aureum, Lycaste Skinneri, the fine new Ceterach aureum, and Adiantum gracillimum, &c. A vote of thanks was awarded. M. Herbst, nurseryman, Richmond, received a vote of thanks for a fine group of forced Lilies of the Valley and Spiræas. There were two sorts of Lily of the Valley, the one dwarf, and with large bells which open out to the top of the spike, and which are obtained from Germany; and the other a taller growing form, with longer spikes and smaller flowers, which frequently have the green buds at the end, and which are obtained from Holland; these were, however, the most fragrant. The German form is clearly the best, and should be looked after by growers. Messrs. W. Rollisson & Sons, Tooting, showed a nice lot of plants of Boronia megastigma, with dark bronzy red delicious scented flowers; a very pretty rosy-pink flowered variety of Erica herbacea; and Grevillea Preissii, a native of Australia, which, but for the terminal clusters of rosy red flowers, might be taken for Southernwood. A First-class Certificate was awarded. Mr. Bull showed Epacris onosmæflora flore-pleno, from New South Wales; it has beautifully double small white flowers, and received a First-class Certificate. G. F. Wilson, Esq., Heatherbank, Weybridge, sent a very pretty bright magenta-coloured Hepatica triloba, named Single Rose, which was Highly Commended; and a reticulated form of Goodyera from North America, believed to be new. Mr. W. Chapman, gr. to Dr. Patteson, North End Lodge, Fulham, sent a flowering plant of Phaius maculatus, under the name of Calanthe Sieboldii—a very scarce Japanese Orchid. From Mr. W. Bennett, gr. to M. T. Bass, Esq., M.P., Rangemore, Burton-on-Trent, came a strong plant of Phalænopsis Schilleriana, with a spike about 4 feet long, on which were ten branches of beautifully coloured fresh flowers. It was a very fine plant, and the committee recommended to the Council the award of a Davis Medal, which was afterwards confirmed. Mr. Ollerhead, gr. to Sir Henry Peek, M.P., Wimbledon House, showed a plant of Odontoglossum Alexandræ, with three spikes and thirty-two flowers, and another spike with twelve grand flowers. A vote of thanks was awarded. Mr. R. Dean, Ranelagh Road, Ealing, sent a basket of choice and very pretty hardy Primroses.

FRUIT COMMITTEE.—Henry Webb, Esq., in the chair. Very few subjects came under the notice of this body, and the only awards made were the thanks of the committee to Mr. Owen Thomas, gr. to Sir Robert Peel, M.P., Drayton Manor, for Cucumber Drayton Manor, a cross between Rollisson's Telegraph and Masters' Prolific; and to Mr. Dixon, gr. to Lady Holland, Holland House, for a good dish of the Stone Pippin Apple. Some good old Colmar Pears came from the Society's Garden, Chiswick.

The Weather.

DURING the week ending Saturday, Feb. 26, in the vicinity of the metropolis the reading of the barometer at the level of the sea increased from 29.50 inches at the beginning of the week to 29.86 inches by the evening of the 20th, decreased to 29.77 inches by the evening of the 21st, increased to 29.90 inches by the morning of the 22d, decreased to 29.70 inches by the morning of the 23d, increased to 30.10 inches by the evening of the 24th, and decreased to 29.37 inches by the end of the week. The mean reading for the week was 29.78 inches, being 0.19 inch above that of the preceding week, and 0.23 inch below the average.

The highest temperatures of the air observed by day ranged from 57½° on the 22d to 45° on the 20th, the mean value for the week being 51°. The lowest temperatures of the air observed by night varied from 32½° on the 24th to 45½° on the 22d; the mean for the week was 39°. The mean daily range of temperature in the week was 12°; the greatest range in the day was 14¾° both on the 21st and 24th, and the least was 6½° on the 20th. The mean daily temperatures of the air, and the departures from their respective averages, were as follows:—20th, 41°.2, +2°.3; 21st, 48°.1, +9°.1; 22d, 50°, +10°.9; 23d, 45°.8, +6°.6; 24th, 39°.2, −0°.1; 25th, 40°.8, +1°.3; 26th, 47°, +7°.3. The mean temperature of the air for the week was 37°.4, being 5°.3 above the average of sixty years' observations.

The highest reading of a thermometer with blackened bulb in vacuo, placed in sun's rays, was 83¾° on the 22d; on the 21st the reading did not rise above 60°; the mean for the week was 75½°. The lowest reading of a thermometer on grass, with its bulb exposed to the sky, was 27½° on the 24th; the mean for the seven low readings was 35¾°.

The direction of the wind was S.W., and its strength brisk. The weather during the week was dull, cloudy, and mild, with frequent showers of rain.

Rain fell on four days; the amount collected was 0.61 inch.

In England the highest temperatures of the air observed by day were at Truro, London, and Cambridge, all about 57°; at Newcastle-on-Tyne 51° was the highest temperature in the week; the mean value from all stations was 55¼°. The lowest temperature of the air observed by night was 27°, at Eccles; at Truro 39° was the lowest temperature in the week; the general mean from all stations was 32½°. The range of temperature in the week was the greatest at Eccles, 28°, and the least at Truro, 18°; the mean range of temperature from all stations was 22¾°.

The mean of the seven high day temperatures was the largest at Truro, 53¾°, and the smallest at Leeds, 48½°; the mean from all stations was 50°. The mean of the seven low night temperatures was the smallest at Newcastle-on-Tyne, 33½°, and the largest at Truro, 46½°. The general mean from all stations was 38°. The mean daily range of temperature in the week was the greatest at Sunderland, 15°, and the least at Truro, 7½°. The mean daily range from all stations was 12°.

The mean daily temperature of the air for the week from all stations was 43½°, being 10¼° higher than the value for the corresponding week in 1875. The highest was 49½° at Truro, and the lowest, 48½°, at Newcastle-on-Tyne.

Rain fell on every day in the week at most stations; the amounts varied from an inch and nine-tenths at Eccles to half an inch at Cambridge, Sunderland, and Newcastle-on-Tyne; the average fall over the country was 1 inch nearly.

The weather during the week was dull, cloudy, very mild, with frequent showers of rain.

In Scotland, the highest temperatures of the air ranged between 54½° at Edinburgh and 45° at Paisley; the mean from all stations was 49¾°. The lowest temperatures of the air varied from 25° at Paisley to 32° at Leith; the mean value from all stations was 28½° — the mean range of temperature thus being 21¼°. The mean temperature of the air for the week was 37°, being 6¼° lower than that of England, and 2° higher than the value for the corresponding week in 1875. The highest occurred at Leith, 38¾°, and the lowest at Glasgow, 35¼°. Rain was measured at Glasgow to the amount of 2½ inches, at Dundee only half an inch fell, the average fall over the country was 1¼ inch.

At Dublin, the highest temperature of the air was 58°; the lowest, 31¼°; the range 26¾°; the mean, 45⅛°; and the fall of rain 1¼ inch.

STATE OF THE WEATHER AT BLACKHEATH, LONDON
FOR THE WEEK ENDING WEDNESDAY, MARCH 1, 1876.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
	In.	In.	°	°	°	°	°	°			In.
Feb. 24	29.89	+0.08	47.1	32.3	14.8	39.2	−0.1	29.5	69	WNW N.W.	0.00
25	29.52	−0.28	48.1	34.0	14.1	40.8	+1.3	36.0	86	S.W. S.S.W.	0.18
26	29.29	−0.52	53.6	41.9	11.7	47.0	+7.3	41.3	90	WSW W.	0.04
27	29.35	−0.46	51.7	43.1	8.6	47.3	+7.4	45.4	93	S.S.E.	0.11
28	29.65	−0.1	58.3	40.8	17.5	48.8	+8.7	41.7	86	S.W.	0.00
29	29.63	−0.10	59.0	46.2	12.8	52.0	+11.8	47.6	85	S.S.W. S.W.	0.05
Mar. 1	29.42	−0.41	50.2	43.4	6.8	45.9	+5.6	44.0	93	S.S.W. S.W. WSW	0.40
Mean	29.54	−0.28	52.6	40.3	12.3	45.9	+6.0	41.8	80	S.W.	sum 0.78

Feb. 24.—A very fine day. Partially clear. Cold in early morning.
— 25.—A dull day. Fine at intervals. Occasional slight showers before 6 P.M., heavy showers after.

Feb. 26.—Fine and bright till noon. Dull and frequent rain fell after.
— 27.—A dull day. Frequent rain fell throughout.
— 28.—A fine day, dull at times. Occasional thin rain after 7 P.M.
— 29.—Overcast till 1 P.M.; fine but cloudy after. Little rain fell before 9 A.M.
Mar. 1.—Overcast, dull, and heavy rain fell till evening. Fine and cloudless at night.

JAMES GLAISHER.

Obituary.

We regret to hear of the death, a short time since, of Mr. H. Norman, of Woolwich, a gentleman who formerly held an important position in Her Majesty's Dockyard, but who will be better known to floriculturists as the raiser of many fine varieties of Carnations and Picotees, of which he had been an extensive grower and exhibitor since the days of the South London Florists' Exhibitions.

Enquiries.

He that questioneth much shall learn much.—Bacon.

103. Stauntonia latifolia and Carex pendula.—Can any of your correspondents inform me where I can get these plants, as I cannot get either in London? *J. Sommonds, gr., Beaulieu, Winchmore Hill, London, N.* [The Stauntonia was advertised a year or two ago by Mr. Williams.]

104. Palms.—Are there any Palms which succeed better without syringing? *G. P.*

Answers to Correspondents.

*** We must beg the indulgence of numerous correspondents, whose communications are necessarily delayed by the great accumulation of correspondence.

Boilers: *H. R.* The sketch representing the arrangement recommended by the English gardener is correct, except that you do not show the flow-pipe as rising gently to the end furthest from the boiler, which it should do. The four elbows sent were evidently intended to be used thus:—One to connect the flow-pipe with the orifice at top of the boiler; one to connect the return-pipe with the lower orifice, and one for each of the angles at the furthest end. The sudden dip just after leaving the boiler is altogether wrong.

Books: *J. H.* The books you mention may probably be obtained from Mr. Quaritch, of Piccadilly. With the exception of Loudon's, they are now of no value except to professed botanists.

Camellias: *J. M.* Camellias should be planted out now without any delay, as if it is deferred longer they will begin growing, and the disturbance the roots will receive will much interfere with the season's growth. Before planting them take a sharp iron skewer as thick as an ordinary pencil, and run it straight down through the balls in a number of places so as to make sure that the water can pass through, otherwise they are liable to get dry. If this occurs the plants will make little progress. The roots, if not much matted, may be slightly disentangled, so far as can be done without breaking them, but they will now be in an active state, and are very brittle, and if much broken it will seriously interfere with the season's growth. For this reason I prefer planting Camellias out as soon as the growth is completed, and before the flower-buds have attained any size. In planting out Camellias the soil for a foot round each plant should be made as hard as the ball of the plant, or the water given will pass off through the surrounding soil instead of moistening the ball. If the soil is left for a few months a little higher than the collar of the plants, so as to form a slight ridge round them the roots cannot then get dry, which is the principal thing to guard against until they have freely extended into the new beds.

Cyclamen: *J. & G. Lowe.* It is very curious, but not so handsome as the normal flower. We have seen similar cases. It is certainly worth saving, and seeding, in order to try if will yield still more double flowers.

Japan Flax: *J. M.* This is a mystery to us. We have never seen a leaf, flower, or fruit of the plant from which it is obtained, and have no satisfactory knowledge even of its being imported from Japan.

Names of Fruits: *A Subscriber. Apples:* 2, French Crab; 4, Grange's Pearmain; 6, Alfriston; 7, Gloria Mundi. *Pears:* 8, Beurré Rance; 9, Bergamotte d'Esperen.—*W. B. Burnett. Apple:* Alfriston.

Names of Plants: *A. Paterson.* The flower sent as Cattleya Symei, is an average sample of the extremely varied C. Trianæ.—*J. F. K.* Your plant seems to be a hybrid form of Helleborus purpurascens, or H. caucasicus; but without very complete specimens we cannot name it with certainty.—*Amateur, Windsor.* Ena clavicaulis.—*R. L., Wolverhampton.* We believe the seeds you sent are those of the common lesser Bindweed, Convolvulus arvensis. We know of no other remedy than carefully forking it out.—*A. B.* The "shrub in bloom" is Daphne Mezereum. The "yellow weed" is Eranthis hiemalis—Winter Aconite. We cannot name the Conifer from the scrap sent.

Ornamental Grasses: *J. M.* omits to name what species of ornamental grasses he alludes to; they are numerous. Any of the really hardy kinds may be sown out-of-doors about the end of the present month or beginning of April. Any of the less hardy species, such as Gynerium argenteum (Pampas-grass), the Arundos, or others of similar nature, may at once be sown in pans, in a moderate heat, after which let them be potted singly; and ultimately, when they are large enough, planted out where they are to be grown.—*J. Theobald.* The ornamental annual species of Agrostis, Bromus, Pennisetum, Phleum, &c., may be sown in the open borders during the present month, as soon as the ground becomes fit for working. The Stipas are perennials, but may be sown outdoors in a similar way. Gomphrena, Rhodanthe, Helipterum, and Xeranthemum, are not grasses, but Everlastings. Gomphrena must be raised and cultivated in heat to flower in the greenhouse. The others are annuals, and may be sown outdoors by-and-by like the grasses, but Rhodanthe and Helipterum may be forwarded by sowing under shelter with half-hardy annuals.

Pansies: *Aberdeenshire.* If we read your description rightly, you have simply smothered your plants; they are quite hardy, and did not need the protection. You will find Gloire de Bordeaux a climbing Rose similar in habit to Gloire de Dijon.

Paris Green: *A. C.* We have no personal experience. It is a dangerous poison. Please send us a few of the larvæ for identification.

Peaches: *A. B.* You had better not have recourse to syringing for the purpose of setting your fruit, as you have evidently no faith in the success of the practice. Try gently shaking the trees during bright sunshine instead.

Rough Salt: *Bradley.* You mean, no doubt, the rough salt used by agriculturists. We cannot undertake to ascertain where you can get it, but no doubt if you were to apply to any of the men who deal in farm requisites, that are to be found in almost every market town, you would get it at once.

Scarce Plants: *X. Y. Z., Bath.* Please send us your address.

Seedling Apples: *Henry Jarvis.* Your seedling Apples from Devonshire Quarenden and Cellini Pippin are both very promising; and we would recommend you to submit them to the judgment of the Fruit Committee next season. They are past their best now.

Stove: *J. M.* There are several small stoves which would answer your purpose. Consult our advertising columns.

Errata.—In my note on the Motacilla alba you printed the word "pied" as "Pisa;" the pied wagtail was the bird alluded to. *H. G. W.*—In the sixth line from the top in the second column, on p. 271, the word "each" should be "last." In the eighth line from the bottom of the same paragraph, for "hang" read "being."

Publications Received.—Sketches of British Insects, by the Rev. W. Houghton, M.A., F.L.S. (Groombridge).—The Dwellers in our Gardens, by Sarah Wood (Groombridge).—Out and About, by Hain Friswell (Groombridge).—Reflections and Maxims, by William Penn (Groombridge).—Handy Concordance to the New Testament, with contexts comprising nearly 30,000 references (Groombridge).—Domestic Floriculture, by F. W. Burbidge; second edition, revised and enlarged (Blackwood).—The Handy-Book of the Flower Garden, by David Thomson; third edition, enlarged and brought down to the present time (Blackwood).—Sur les Causes de l'Inégale Distribution des Plantes rares dans la chaine des Alpes; par Alphonse De Candolle.—Existe-t'il dans la végétation actuelle des caractères généraux et distinctifs qui permettraient de la reconnaitre en tous pays si elle devenait fossile? par Alph. De Candolle.—Le Nord-Est Agricole et Horticole.—Annales Agronomiques.—Moniteur Belge (La Théorie des Plantes Carnivores et Irritables; par M. Ed. Morren).—A Useful and Permanent Method of Garden Arrangement, with Notes on Landscape Gardening, by Henry W. Cooper, F.R.H.S., Swainswick, Bath.—All the Year Round.—The Complete Angler; or, the Contemplative Man's Recreation. By Izaak Walton. A fac-simile reprint of the 1st edition, published in 1653 (Elliott Stock, 62, Paternoster Row).—Phippen's Practical Advice to Testators and Executors. Third edition (Hamilton, Adams & Co.).—The Mechanism of Man; an answer to the question What am I? By E. W. Cox. Vol. I. (Longmans & Co.).

Communications Received.—E. G. H. & Son.—J. F. R.—C. Y. M.—W. G. S.—T. F. R. O. L.—C. P. H.—T. S. J.—W. C. (no, thanks). E. S. D.—J. C. S. (thanks).—J. O.—B. S. W. T. T.—W. S.—D. F. C.—A. M. M.—J. B.—J. H.—A. F.—A. J.—J. Hoopes (many thanks)—M. D. (many thanks)—J. O.—J. C. & Co.

Markets.

COVENT GARDEN, March 2.

There is very little alteration to quote since last week, but a fair amount of business has been done in all descriptions of goods. The market is well supplied with early vegetables, such as new Potatos, French Beans, Asparagus, Seakale, and Cucumbers, while immense quantities of Broccoli are daily arriving from Cornwall and the Channel Islands, buyers having their own way as to prices. *Jas. Webber, Wholesale Apple Market.*

Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	4 0	12 0	Mignonette, 12 bun.	6 0	9 0
Azaleas, 12 sprays ..	0 6	2 0	Narcissus, per dozen	1 0	3 0
Camellias	1 6	9 0	Pelargoniums, 12 spr.	2 0	4 0
Carnations, 12 blooms	2 0	4 0	— Zonal do. ..	1 0	3 0
Cineraria, per bunch	1 0	2 0	Primula, dbl., p. bun.	1 0	1 6
Cyclamen, 12 blooms	0 3	0 6	Rhododend., 12 bds.	3 0	6 0
Epiphyllum, p. doz.	1 0	3 0	Roman Hyacinths,		
Eucharis, per doz. ..	6 0	18 0	12 sprays	1 0	3 0
Euphorbia, 12 spr. ..	4 0	9 0	Roses, indoor, p. doz.	3 0	12 0
Gardenia, per doz. ..	8 0	18 0	Spiræa, 12 sprays ..	2 0	4 0
Heliotropes, 12 spr.	0 6	1 0	Stephanotis, 12 sprays	9 0	18 0
Lily of Valley, 12 spr.	1 6	6 0	Violets, 12 bunches..	1 0	3 0

Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per doz. ..	24 0	60 0	Fuchsia, per doz. ..	9 0	18 0
Begonias, per doz. ..	6 0	12 0	Genista, do.	9 0	24 0
Bouvardias, do. ..	12 0	18 0	Heaths, in var., doz.	12 0	30 0
Cineraria, per doz. ..	9 0	18 0	Hyacinths, per doz.	9 0	18 0
Crocus, do.	4 0	9 0	Lily of Valley, doz.	18 0	36 0
Cyclamen, do. ..	12 0	24 0	Mignonette, do. ..	6 0	9 0
Cyperus, do.	6 0	12 0	Myrtles, do.	3 0	9 0
Deutzia, do.	9 0	18 0	Pelargoniums, scarlet,		
Dielytra, do. ..	12 0	24 0	per doz.	6 0	9 0
Dracæna terminalis	30 0	60 0	Primula sinensis, do.	6 0	12 0
— viridis, per doz.	18 0	24 0	Roses, Fairy, do. ..	9 0	15 0
Epacris, do.	12 0	18 0	— various, do. ..	18 0	30 0
Euphorbia jacquiniæ-			Solanums, do. ..	6 0	24 0
folia, per doz. ..	9 0	18 0	Tulips, do.	8 0	12 0
Ficus elastica ..	2 6	15 0	Veronica, do. ..	4 0	12 0

Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz.	6 0	..	Leeks, per bunch ..	0 2	0 4
— Jerusalem, p. lb.	0 3	..	Lettuces, per score .	2 0	..
Asparagus (English),			Mint, green, bunch	1 6	..
per bundle ..	8 0	12 0	Mushrooms, per pott.	1 0	2 0
— French ..	18 0	25 0	Onions, young, bun.	0 4	0 6
Beans, French, p. 100	3 6	..	Parsley, per bunch..	0 4	..
Beet, per doz. ..	1 0	2 0	Peas, green, per lb. .	1 6	..
Brussels Sprouts, lb.	0 4	..	Potatos (new), baskt.	1 0	..
Cabbages, per doz. ..	1 0	2 0	— new Jersey, p. lb.	1 6	2 0
Carrots, per bunch..	0 6	..	— Sweet, per lb. ..	0 6	..
Cauliflowers, p. doz.	2 0	4 0	Radishes, per bunch.	0 1	0 3
Celery, per bundle..	1 6	2 0	— Spanish, doz. ..	1 0	..
Cucumbers, each ..	2 0	3 6	— French	0 6	..
Endive, per doz. ..	1 0	2 0	Rhubarb, per bundle	0 6	1 0
— Batavian, p. doz.	2 0	3 0	Salsafy, per bundle..	0 6	..
Herbs, per bunch ..	0 2	0 4	Seakale, per punnet	1 0	2 0
Horse Radish, p. bun.	3 0	5 0	Shallots, per lb. ..	0 3	..
			Turnips, per bundle	0 4	..

Potatos—Rocks, 105*s.* to 110*s.*; Regents, 120*s.* to 170*s.*; Myatt's, 160*s.* per ton.

Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1 0	2 6	Melons, each ..	0 0	0 0
Cobs and Filbts., lb.	0 6	0 9	Oranges, per 100 ..	6 0	12 0
Grapes, per lb. ..	3 0	8 0	Pears, per doz. ..	3 0	10 0
Lemons, per 100 ..	6 0	10 0	Pine-apples, p. lb. ..	1 6	4 0

SEEDS.

London: *March 2.*—Our markets, as might be expected, are now well attended, with a large amount of business doing. Of English red Clover seed the supply does not increase, whilst to-day's telegrams speak of higher prices in France, Germany, and America. The home consumptive demand has, it is said, begun in these several countries, which will, probably, soon make a clearance of their small remaining stocks. With an active trade an advance must be noted on the past week of fully £2 per ton on all descriptions of red seed. Trefoils are also dearer: of fine bright seed there is an unusual scarcity. As regards white Clover and Alsike the upward movement continues without check, and holders are realising 4*s.* to 5*s.* per cwt. more money. A striking feature in the seed trade is a remarkable rise during the past ten days in the price of foreign Italian, which article, owing to its undoubted scarcity and to some speculation consequent thereon, exhibits a sudden advance of 10*s.* to 12*s.* per bale. Perennial grasses, from sympathy, are also making more money. Owing to the recent wet weather there is for the moment less inquiry for spring Tares: currencies, however, remain stationary. For both Hemp and Canary seed the trade lacks animation. Mustard and Rape seed are quietly creeping upwards: good samples of either kind readily find buyers. English Linseed is in good request. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, E.C.*

POTATOS.

From the Borough and Spitalfields markets we learn that trade has been steady, and with a moderate supply of all sorts there was no material change in prices:—Kent Regents, 130*s.* to 150*s.* per ton; Essex ditto, 110*s.* to 130*s.*; rocks, 85*s.* to 100*s.*; flukes, 120*s.* to 160*s.*; Victorias, 110*s.* to 150*s.*; kidneys, 100*s.* to 140*s.* per ton.—The arrivals of foreign Potatos in London last week included 1897 bags from Antwerp, 400 sacks from Boulogne, 2124 bags from Hamburg, 200 bags from Ghent, 306 tons and 1543 bags from Dunkirk, 9 bags from Rotterdam, 48 sacks from St. Nazaire, and 423 tons 170 sacks from Rouen.

CATTLE.

At Copenhagen Fields on Monday choicest quality beasts were no cheaper, indeed they were more readily disposed of. Trade in sheep was dull, and prices on the average not quite so good. There were a few more calves, but choice ones were neither plentiful nor cheaper. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.*, and 5*s.* 6*d.* to 6*s.*; calves, 5*s.* 6*d.* to 7*s.*; sheep, 5*s.* 4*d.* to 5*s.* 10*d.*, and 6*s.* 4*d.* to 7*s.*—In the beast market on Thursday no improvement occurred in quotations. Trade in sheep was slow, at Monday's rates. Prime calves brought enhanced rates.

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YOUNG'S GOLDEN CHINESE JUNIPER

(JUNIPERUS CHINENSIS AUREA).

"The finest Golden Conifer of the day."

IT HAS BEEN EXHIBITED AT THE FOLLOWING SOCIETIES' SHOWS, WHEN THE HIGHEST HONOURS WERE AWARDED TO IT:—

Royal Horticultural, Aug. 2, 1871, First-class Certificate.
Crystal Palace, Aug. 5, 1871, First-class Certificate.
Manchester Horticultural, Sept. 10, 1872, First-class Certificate.
Glasgow and West of Scotland International Horticultural, Sept. 11, 1872, First-class Certificate.
Société Royale d'Agriculture et de Botanique de Gand, March 3, 1873, First-class Silver Medal.

On each occasion receiving the highest encomiums.

	£	s.	d.	
4 to 6 inches	5	0	0	per 100.
6 to 9 ,, ...	7	10	0	,,
9 to 12 ,, ...	10	0	0	,,
12 to 15 ,, ...	12	10	0	,,
15 to 18 ,, ...	42s. to 3	0	0	per doz.
SPECIMENS, 1½, 2, 2½, and 3 feet ...	10s. 6d., 21s., 31s. 6d., 42s., and 63s. each.			

NEW RHODODENDRONS.

BIANCHI, | LADY WINIFRED HERBERT, | SALVINI,
CAPTAIN WEBB, | MRS. GEO. BROWN, | WM. MILTON.

☞ The above Rhododendrons having been thoroughly tested for several seasons can be confidently recommended to purchasers as really distinct and hardy late-blooming varieties, combining all the qualities most desirable in this attractive class of plants. They are now offered in good plants:—

First Size, nice Plants, £2 12s. 6d. the set. Second Size, bushy, about 1½ foot, £3 15s. the set. Third Size, bushy, ½ to 2 feet, £5 5s. the set.

NEW AUCUBAS.

AUCUBA YOUNGII (Male and Female).

These are without doubt the finest varieties of Aucuba at present known. They are the result of crossing "A. ovata," the dwarf-growing species, with "A. viridis," the strong growing green one. They are of very robust habit, yet compact in growth; the foliage is large, nearly round in shape, of great substance, and a rich deep shining green. The fruit on the female plant is very large, and of a deep blood-red. It received a First-class Certificate at the Royal Horticultural Society's Meeting, on March 19, 1873, and is described in the *Gardeners' Chronicle* as "a fine variety which has received a First-class Certificate for its dense habit, fine dark leaves of great substance, and large deep crimson fruit." They are valuable acquisitions to our hardy evergreens, and when known will demand a place in every collection, and will be universally planted in every garden and shrubbery where a really fine ornamental evergreen is a desideratum.

Strong Plants in pots, 5s. each; 42s. per dozen.

MAURICE YOUNG, MILFORD NURSERIES, near GODALMING.

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OFFER THE FOLLOWING

FIRST-CLASS NURSERY STOCK.

FOREST and ORNAMENTAL TREES

ASH, Mountain, 6 to 8 feet, 10s. 6d. per 100, 2s. per dozen.
ELM, English (from Seed), 2½ to 3½ feet, 32s. 6d. per 1000, 4s. per 100.
LIME, 3 to 4 feet, 16s. per 100, 3s. per dozen; 5 to 6 feet, 32s. per 100, 5s. per dozen; 6 to 7 feet, 15s. per 100, 7s. 6d. per dozen.
MAPLE, Norway, 6 to 8 feet, 12s. 6d. per 100, 2s. 6d. per dozen; 8 to 9 feet, 20s. per 100, 4s. per dozen.
POPLAR, Abele or White, 2 to 3 feet, 6os. per 1000, 8s. per 100; 6 to 7 feet, 15s. per 100; 7 to 8 feet, 25s. per 100.
,, Black Italian, 7 to 9 feet, 10s. 6d. per 100, 10 to 12 feet, 30s. per 100.
,, Lombardy, 3 to 4 feet, 7s. per 100; 4 to 5 feet, 10s. 6d. per 100.
WHITE BEAM (Sorbus), 3 to 4 feet, 16s. per 100; 4 to 5 feet, 22s. 6d. per 100.
WILLOWS, in named varieties, 8s. to 12s. 6d. per 100.

CONIFERÆ.

ABIES DOUGLASII, 1-yr. Seedling, extra fine, 7s. per 1000, 10s. per 100: 3 to 4 feet, 15os. per 100, 21s. per dozen.
,, MENZIESII, 2-yr. Seedling, 1-yr. transplanted, £5 per 1000; 12s. 6d. per 100; 1 to 1½ foot, 30s. per 100, 6s. per dozen; 1½ to 2 feet, 50s. per 100, 9s. per dozen.
CRYPTOMERIA ELEGANS, 3 to 4 feet, fine, 36s. per dozen
JUNIPERUS TRIPARTITA, 1½ to 2 feet, 10s. 6d. per dozen; 2 to 2½ feet, 18s. per dozen.
PICEA NOBILIS, 2 to 2½ feet, fine, 30s. per dozen; 2½ to 3 feet, 5os. per dozen.
PINUS CEMBRA, 2 to 2½ feet, 45s. per 100, 7s 6d. per dozen; 2½ to 3 feet, 6os. per 100, 10s. per dozen.
RETINOSPORA PLUMOSA, 12 to 15 inches, 15s per dozen; 15 to 18 inches, 24s. per dozen.
,, ,, ARGENTEA, 6 to 9 inches, bushy, 15s. per dozen.
,, SQUARROSA, 9 to 12 inches, 6s. per dozen.
SEQUOIA (TAXODIUM) SEMPERVIRENS, 1½ to 2½ feet, 6os. per 100, 9s. per dozen.

SHRUBS.

BERBERIS DULCIS, twice transplanted, 12s. 6d. per 100, 2s. 6d. per dozen.
,, DARWINII, ditto, 9 to 15 inches, 12s 6d per 100, 2s. 6d. per dozen; ditto, 12 to 18 inches, 17s. 6d. per 100, 3s. 6d. per dozen.
BLACKTHORN or SLOE, strong, transplanted, 25s. per 1000, 3s. per 100.
BROOM, Common, strong transplanted, 9s. per 100, 2s. p. doz.
,, Spanish, 1-yr Seedling, fine, 35s. per 1000, 4s. per 100.
CYDONIA JAPONICA, in variety, 6s. per dozen.
DEUTZIA CRENATA fl.-pl., 30s. per 100, 5s. per dozen.
,, CANDIDISSIMA fl.-pl., fine white, 6s to 12s. per dozen.
,, FORTUNEI, 6s to 12s. per dozen.
GYNERIUM ARGENTEUM (Pampas-grass), 6s per dozen; strong tufts, 9s. to 18s. per dozen.
HYPERICUM OBLONGIFOLIUM, fine for autumn-flowering, 30s per 100, 5s. per dozen.
LILAC, White, 3 to 4 feet, 45s. per 100, 5s. per dozen.
,, of sorts, 2 to 3 feet, 25s. per 100, 4s. per dozen.
PRIVET, Evergreen, 2 to 3 feet, strong, 30s. per 1000.
,, Japan, grafted, 1 to 1½ foot, 8s. per dozen
RHODODENDRON PONTICUM, 12 to 15 inches, bushy, 22s. 6d per 100, 4s per dozen; 15 to 18 inches, 30s. per 100, 6s. per dozen; 18 to 24 inches, 45s. per 100, 8s. per dozen.
SPIRÆA, of sorts, 12s. per 100, 3s. per dozen.
SWEET BRIER, strong, 10s. 6d per 100, 2s. per dozen.
YUCCA CONSPICUA, fine plants, 5s. to 15s. each.
FLOWERING SHRUBS, of sorts, 21s. per 100, 4s. per dozen, extra strong, 30s. per 100, 5s. to 8s. per dozen.

ROSES.

STANDARDS and HALF-STANDARDS, fine named sorts, 10s. per 100, 15s. per dozen.
DWARFS, on MANETTI STOCKS, ditto, 6s. per 100, 9s. per dozen.

FRUIT TREES.

APPLES, Pyramids or Bushes, strong fruiting trees, Ribston Pippin, &c., 18s. per dozen.
CHERRY, Morello, dwarf-trained, 30s. per dozen.
PEARS, Pyramids, strong fruiting trees, 18s to 24s. per dozen.
,, Dwarf-trained, Marie Louise, &c., 30s to 42s. per dozen.
CURRANTS, Black, 14s. per 100, 2s. per dozen.
GOOSEBERRIES, good useful sorts, 14s. per 100, 2s. per doz.
,, large prize sorts, 25s. per 100, 4s. per dozen.

Prices to the Trade on application.

JAMES BACKHOUSE AND SON, YORK.

PINES.—For Sale, 60 Queen Pines, successions—clean, healthy Plants, several of them in fruiting pots. Apply to
The LAWSON SEED AND NURSERY COMPANY (Limited), Edinburgh.

JAMES DICKSON AND SONS, 32, Hanover Street, Edinburgh, have to offer :—
ABIES DOUGLASII, 1-yr. Seedling, 1-yr. transplanted, at £5 per 1000. This is one of the finest of the new Pines.
LARCH, 1-yr. Seedling, 1-year transplanted, 8s. per 1000.
They are vigorous and healthy, fit for Hill Planting or for the Nursery.

Enormous Reduction.

LILIUM AURATUM.—Magnificent Bulbs of these exceedingly beautiful Lilies, just arrived from Japan in the finest possible condition—sizes Nos. 1 to 4, at 4s., 6s., 8s., and 12s. per dozen. Single samples sent post-free on receipt of two extra stamps to the Importer (with whom samples may be seen)—
WM. GORDON, 10, Cullum Street, E.C.

FOR SALE, at a Low Price for Cash (from a Private Nursery, overstocked), about—

500 LAURELS, 4 to 5 feet.	7000 ASH, 3 to 6 feet.
300 BOX, 2 to 3 feet.	4000 MAPLE, Norway, 5 to 8
200 YEW, 3 to 5 feet.	1000 HAZEL, 3 to 4 ft. [ft.
4000 ELM TREES, 4 to 6 ft.	1000 HORNBEAM, 3 to 4 ft.

Apply to Mr. W. S. HOSLEY, Audley End, Saffron Walden, Essex.

Notice to the Trade and Others.

MR. POSTANS' NEW ZONAL GERANIUMS of 1875. The Set of Fourteen Varieties can now be had, in nice strong plants.

☞ Mr. POSTANS' SILVER-EDGED WHITE-FLOWERING and SILVER-EDGED FANCY FLOWERING VARIEGATED GERANIUMS of 1875.—The above grand acquisitions are now supplied in good plants by the Distributor, at reasonable prices. See CATALOGUE.
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Seed Potatos, Seed Potatos.

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RIVERS' ROYAL ASHLEAF,
MYATT'S PROLIFIC ASHLEAF,
EARLY ROSE,
HUNDREDFOLD FLUKE.
Having large stocks of the above, they will be offered at very low prices. 52, Market Square, Northampton.

FOR SALE, Two fine healthy PALMS (Plectocomia Assamica), 6 feet in height and diameter. Also the following specimen FERNS, &c., in good condition :—
TODEA AFRICANA, 2 plants.
DICKSONIA ANTARCTICA, 3 plants.
,, SQUARROSA, 2 plants.
LOMARIA ATTENUATA, 1 plant.
ADIANTUM SANCTÆ CATHERINÆ, 1 plant.
POLYPODIUM AUREUM, 1 plant.
DAVALLIA PYXIDATA, 2 plants.
WOODWARDIA ORIENTALIS, 1 plant.
CIBOTIUM BAROMETZ, 1 plant.
MICROLEPIA PLATYPHYLLA.
MARANTA ZEBRINA.
,, WARSCEWICZII.
ANTHURIUM LEUCONEURUM.
CROTON VARIEGATUM.
Apply, The Gardens, 33A, Turner Road, Lee, near Blackheath, S.E.

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H. LANE AND SON can offer the following at greatly reduced prices, all fine, well-grown trees :—
CUPRESSUS LAWSONIANA, 3 to 15 feet.
THUJOPSIS BOREALIS, 3 to 15 feet.
THUJA LOBBII, 3 to 15 feet.
,, GIGANTEA, 4 to 9 feet.
WELLINGTONIA GIGANTEA, 5 to 10 feet.
PICEA GRANDIS, 8 to 15 feet
,, NORDMANNIANA, 2 to 12 feet.
,, NOBILIS, 2 to 8 feet.
YEWS, Irish, 4 to 8 feet.
LAURELS, Portugal, 2 to 5 feet.
CEDRUS DEODARA, 3 to 5 feet.
ARBOR-VITÆ, Siberian, 4 to 6 feet.
HOLLIES, Variegated, 2 to 7 feet.
RHODODENDRONS, named, Seedling Hybrids and Ponticums, blooming plants; Standard WALNUTS, PRUNE DAMSONS, CHERRIES, and THORNS; Dwarf-trained APPLES, PEARS, and PLUMS: Horizontal-trained APPLES and PEARS; Pyramidal APPLES, PEARS, PLUMS, and CHERRIES.
CATALOGUE and price on application.
The Nurseries, Great Berkhamsted, Herts.

To the Trade.

PAUL AND SON, The "Old" Nurseries, Cheshunt, N., can still furnish :—
STANDARD APPLES, including Ribstons, Keswick and Manx Codlin, &c.
STANDARD PEARS, including Williams' Bon Chrétien, Hessel, Beurré de Capiaumont, and Beurré d'Amanlis.
STANDARD DAMSONS, MEDLARS, WALNUTS, and QUINCE.
PYRAMID PLUMS, extra-sized trees of Victoria, Coe's Golden Drop, Green Gage, &c.
DWARF-TRAINED PLUMS, CHERRIES, PEARS (Fruiting Trees), PEACHES, NECTARINES, and APRICOTS of the leading kinds.
STANDARD ROSES and strong Dwarfs on Manetti, also own roots in pots.
EXTRA-SIZED ROSES, in pots, a speciality of the House.
VINES, fruiting, in pots—Muscat, Madresfield Court, Gros Colman, Duke of Buccleuch, &c.
ARAUCARIA IMBRICATA, green uninjured trees, 4½ to 8 feet.
WELLINGTONIA GIGANTEA, fine, recently moved trees, 6 to 8 feet.
CEDRUS DEODARA, handsome specimens, 3 to 7 feet.
PINUS HARTWEGII, DEVONIANA, MACROCARPA, INSIGNIS, 4 to 9 feet.
CUPRESSUS LAWSONIANA ALBA PENDULA (Paul & Son), fine specimens, 4 feet to 5 feet, and other sizes.
LIMES, 10 to 14 feet. ELMS, Huntingdon, 10 to 14 feet. ASH, Weeping, 10 to 14 feet. OAKS, 8 to 12 feet. In quantity.
LAURELS, AUCUBAS, YEWS, HOLLIES, Green and Variegated, in quantity.
The above are in splendid condition for removal, at
PAUL AND SON'S, The "Old" Nurseries, Cheshunt, N.

PORTUGAL LAURELS, 3 to 4 feet, 30s. per 100; Common do., 4 to 6 feet, 30s.; THUJA GIGANTEA, 3 to 4 feet, 60s.; BIOTA COMPACTA, 4 to 5 feet, 50s.; GREEN HOLLY, 1 to 1½ foot, 20s. per 100.
J. JACKSON, Nursery, Kidderminster.

NEW AZALEA INDICA.—The following Novelties, which are very fine and distinct, can now be had in fine plants, full of buds, at the following low prices, viz. :—
COMTE MARGARIA.—Semi-double rosy lilac flowers, extra fine. 6s.
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REINE DE PORTUGAL.—One of the very finest and very best double whites extant; no collection should be without it. 8s.
IMPERATRICE CHARLOTTE.—Dark salmon-crimson; a perfection of form, with large bands of fiery red on nearly every petal, each petal broadly margined with white; extra. 8s.
BIJOU DE LEDEBERG.—A fine variety, with beautiful variegated leaves (margined); flowers the same as the so much esteemed variety Modèle. 4s.
The above novelties are specially recommended, and will be supplied at the annexed prices, in strong plants, covered with flower-buds, or the collection of five, taken together, for 25s. For further descriptions see J. V.'s CATALOGUE.
All orders to be sent to JEAN VERSCHAFFELT, The Nurseries, Ledeberg, Ghent, Belgium.
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The Collections above referred to have been awarded several Gold Medals at the Exhibition of Lyons.

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WILLIAM MILES offers good healthy Plants from stores of ALTERNANTHERA AMŒNA and A. AMŒNA SPECTABILIS, at 8s. per 100, 70s. per 1000. A. MAGNIFICA, A. PARONYCHIOIDES, and A. AMABILIS LATIFOLIA, at 6s. per 100, 50s. per 1000.
CENTAUREA CANDIDISSIMA, strong stuff, in small 60-size pots, 20s. per 100, £8 per 1000, package included. Terms cash.—West Brighton Nurseries, Brighton, Sussex.

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Oneida	Early Rose
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Snowflake	Peach Blow

Also a large stock of all English varieties.
Prices (very moderate) on application.

COLLECTION OF TWELVE STANDARD ORNAMENTAL TREES, THE MOST BEAUTIFUL FOR GROUPING, 24s., viz. :—Almond, Acer Negundo variegata, Double Scarlet Thorn, Elm elegantissima, Purple Beech, Silver Variegated Cornus, Silver-leaved Poplar, Scarlet Horse Chestnut, Scarlet Mountain Ash, Tulip Tree, Variegated Mahaleb, Weeping Silver Birch.

COLLECTION OF TWELVE OF THE MOST DISTINCT AND BEAUTIFUL HARDY CREEPERS and WALL SHRUBS for 15s., viz. :—Akebia quinata, Berberidopsis corallina, Bignonia grandiflora, Clematis Jackmanni, Ceanothus Veitchii, Cydonia japonica, Escallonia macrantha, Jasminum revolutum, Lonicera aureo-reticulata, Magnolia grandiflora, Passiflora Colvillii, Wistaria sinensis.

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DECIDUOUS FLOWERING SHRUBS in Fifty beautiful varieties, 30s. per 100.

BEAUTIFUL HERBACEOUS AND ALPINE FLOWERING PLANTS, give no trouble, and are permanent in adorning Garden Beds, Borders, and Rockeries; 30s. per 100 varieties.

AVENUE AND ORNAMENTAL TREES,
For planting singly or in groups, of all forms and sizes; with many other large Evergreens for single specimens or screens.

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AMERICAN POTATOS

RUBY (new), | SNOWFLAKE, | EXTRA EARLY VERMONT,
ALPHA, | EUREKA, | BROWNELL'S BEAUTY.

We take pleasure in informing our Correspondents that we have secured a fine crop of the above, in a sound and healthy condition. They were grown in a section of the country where the Colorado Beetle has never appeared, so that no danger need be apprehended from importing them. We are prepared to supply the Trade with the genuine varieties, also all others previously introduced, upon the most reasonable terms.

Particular attention is invited to a New and Popular Seedling from Mr. PRINGLE, the well-known raiser of the Alpha and Snowflake, which was exhibited at the International Potato Exhibition as Pringle's No. 10, and favourably noticed. It is described by the raiser as follows :—

RUBY.

A new red kidney-shaped Potato of excellent promise, raised in 1871 from the "Early Rose" hybridised with the "White Peachblow." Its hybrid origin is quite apparent. The shape is oblong, slightly flattened, resembling that of the "Early Rose." In its colouring the red of the latter variety is deepened by the carmine which shows in the blotches of the "White Peachblow." The eyes, which are but slightly sunken, are carmine, like those of this variety. The flesh possesses much the character of the "Peachblows," being white, fine-grained, firm, and of excellent flavour. The tubers are of approved medium size, and are clustered close about the foot of the stalks. These are short and stout, with foliage broad, thick, and of a very dark green colour. The time of maturity is the same as that of the "Early Rose," and it is equally productive. To those who prefer a red-skin Potato we can confidently recommend this excellent variety.

Under the New International Postal Law One Pound of the "Ruby" will be sent to any address in Europe, post paid, upon receipt of 4s. English currency, or its equivalent.

Remittances can be made in Post-office Stamps or by Postal Money Order on New York or London, made payable to order of B. K. BLISS & SONS.

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The extraordinary success which has attended Mr. Pringle in his attempts to improve this valuable esculent—which has resulted in the production of the "Snowflake" and "Alpha," and last, though not least, the "Ruby"—has encouraged him to still greater efforts in his favourite pursuit of hybridisation, and we have now the pleasure of offering a very choice strain of seed saved by him, which is the product of numerous hybridisations, variously operated with every care during the past season, between the abovenamed and many of the best new and old varieties in cultivation, both English and American, and includes every strain, which Mr. Pringle will himself sow the coming spring.

Packets of twenty-five seeds, 2s. 6d.; five packets, 10s.

Our Illustrated Descriptive POTATO CATALOGUE, 32 pages, containing a List of 200 varieties, with Report of Committee and Culture of successful Competitors in 1875, will be mailed free and post paid to all applicants.

A liberal discount to the Trade.

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ISAAC BRUNNING AND CO., beg to announce they are in a position to supply strong healthy Plants of their choice and extensive Collection of the above as follows :—

CARNATIONS, 18*s.* to 24*s.* per dozen pairs.
PICOTEES, 15*s.* to 21*s.* per dozen pairs.
PINKS, 9*s.* to 15*s.* per dozen pairs.

Our One Guinea Collection of the above, which gave general satisfaction last season, contains six pairs choice Show Carnations, six pairs choice Show Picotees, twelve pairs Show Pinks, and twelve choice Carnations and Picotees mixed, for borders, sent Carriage and Package Free on receipt of Post-office Order for 21*s* ; double above quantities, 40*s* ; half ditto, 11*s*.

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No. 1 Collection contains 100 bulbs, in 50 choicest kinds, with names, £5.
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Fine selections can also be supplied at 6*s*., 9*s*., 12*s*., 18*s*. to 30*s*. per dozen.

GLADIOLUS BRENCHLEYENSIS, splendid scarlet, 9*s*. per 100, 1*s*. 6*d*. per dozen.

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We have a limited quantity of the above (for the stock of which our Nurseries have for years been famous), to offer, in strong well-ripened Canes, at 9*s*. per 100.

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Magnificent strain, quite distinct. The leaves, which are very broad and fleshy, recurve so as to almost cover the pot; the flowers are much larger than in the old sorts, and of very brilliant shades of colour, and fine form. By sowing now on a gentle hotbed they may be had in bloom in autumn, and seedling plants always yield much the finest Blooms. Erecta and horizontalis, separate or mixed.

Per packet, 1*s*. and 2*s*. 6*d*., stamps or Post-office Order.
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PLUMS, Victoria and other leading kinds.
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PEACHES and **NECTARINES.**

A quantity of fine Maiden Morello.

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The Plants are all handsomely Grown and properly Rooted.

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OF

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THE KNAP HILL CYPRESS,

Cupressus Lawsoniana erecta viridis.

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Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices :—

3 feet high, 2½ feet in circumference, 30*s*. per doz.
4 feet high, 3 to 4 feet do., 42*s*. to 60*s*. per doz.
5 feet high, 4, 5 and 6 ft. do., 10*s*. 6*d*., 15*s*. to 21*s*. each.
6 and 7 feet high, 6 to 7 and 8 ft. do., 21*s*. to 31*s*. 6*d*. each.

No cuttings have been taken from the plants here referred to, which are simply perfect in growth and splendidly rooted.

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MADE of PREPARED HAIR and WOOL.

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2 yards wide	.. ..	1*s* 10*d*. per yard run.
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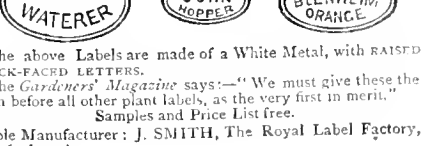

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The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."

Samples and Price List free.

Sole Manufacturer : J. SMITH, The Royal Label Factory, Stratford-on-Avon

Labels—Secure Tree and Plant Labels.

PARCHMENT or CLOTH LABELS, TREE or PLANT LABELS. Punched Parchment, 4 inches long, 3s. 6d. per 1000, or 30s. per 10,000; if eyeleted, 4s. per 1000. Vellum Cartridge, 4 inches long, 3s. per 1000 for 10,000. Sample Labels sent on receipt of postage stamp. Orders delivered free in London.

JOHN FISHER AND CO., Label Works, Boston.

GOVERNMENT EMIGRATION.

SYDNEY, NEW SOUTH WALES.—Passages are provided for Married Couples not exceeding 40 years of age, with or without children; and Single Men and Women not exceeding 35 years of age; being FARMERS, MECHANICS, MINERS, LABOURERS, and FEMALE DOMESTIC SERVANTS, on payment of the following rates:—12 years and not exceeding 40, £5 10s.; 1 year and under 12, £2 15s.

The "*Star of India*" will be despatched with Emigrants from Plymouth on the 6th of March.

For passages and all further information, apply to the AGENT-GENERAL, at 3, Westminster Chambers, Victoria Street, London, S.W

Metallic Hothouse Builder to Her Majesty.

HENRY HOPE (late Clark & Hope, formerly Clark), HOTHOUSE BUILDER and HOT-WATER APPARATUS ENGINEER.

55, Lionel Street, Birmingham. Established A.D. 1818.

BOOKS of DESIGNS, 5s. each.

☞ The Extensive Ranges of Metallic Hothouses in the Royal Gardens, Windsor and Osborne, were executed at this Establishment.

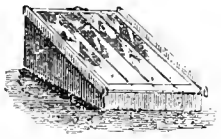
SIR J. PAXTON'S HOT-HOUSES for the MILLION are SIMPLE, CHEAP, and PORTABLE. Illustrated Price Lists free.

HEREMAN AND MORTON, 14, Tichborne Street, Regent Quadrant, W., Horticultural Builders and Hot-water Engineers.

GARDEN FRAMES AND LIGHTS.

A large assortment.

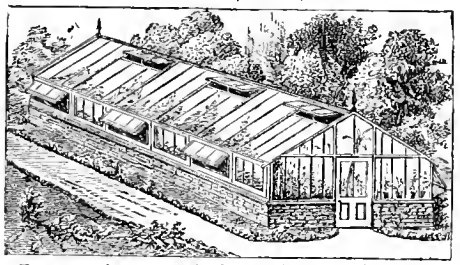
Various sizes in stock.



PRICE LISTS Free by Post

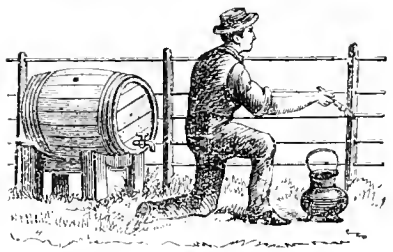
W. RICHARDSON AND CO., HORTICULTURAL BUILDERS AND HOT-WATER ENGINEERS, **DARLINGTON.**

W. H. LASCELLES, HORTICULTURAL BUILDER, Finsbury Steam Joinery Works, 121, Bunhill Row, London, E.C.



Estimates given on application for GREENHOUSES and CONSERVATORIES of all kinds, and to any design.

Oil Paint No Longer Necessary.



HILL AND SMITH'S BLACK VARNISH for Preserving Ironwork, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon carriage paid to any Station in the Kingdom

UNSOLICITED TESTIMONIAL.

Glangwilly, Llanpumpsant, Carmarthen, Nov. 27, 1873.—"Mr. Lloyd Lloyd encloses cheque for £3 5s., amount due to Messrs. HILL & SMITH, and he considers the Black Varnish one of the most useful things he ever possessed."

Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley: and 118, Queen Victoria Street, London, E.C., from whom only it can be obtained.

CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would specially draw attention to the fact that every cask of their Varnish is legibly marked with their name and address, without which none is genuine.

BELGIAN GLASS for GREENHOUSES, &c.,

Can be obtained in all sizes and qualities, of

BETHAM & SON,

9, LOWER THAMES STREET, LONDON, E.C

B. & S. have always a large Stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., in 16 oz. and 21-oz.

Established over a Quarter of a Century.

FRANCIS MORTON & Co's (LIMITED) LIVERPOOL NAYLOR STREET CABLE FENCING

Is in use over many thousand miles,

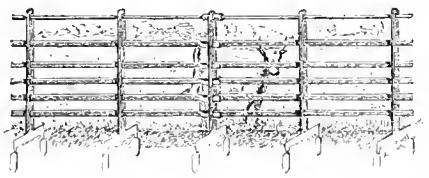
And has been awarded the Medals and highest Commendation of all the leading Agricultural Societies.

It is constructed with

POWERFUL WINDING STRAINING PILLARS, RIGID INTERMEDIATE IRON POSTS, STRONG and DURABLE WIRE CABLE STRANDS,

Forming the most efficient Strained Iron Fencing known for agricultural and general purposes.

Continuous Bar Iron Fencing,



With bars secured by F. M. & Co.'s Patent Self-locking Joints, which effectually prevent the uprights being pushed aside, and are independent of loose pins, wedges, or staples.

IRON ENTRANCE and FIELD GATES,

IN WROUGHT AND CAST IRON,

Designed for the Mansion, Villa, or Farm.

WICKET AND GARDEN GATES,

In Great Variety of Patterns.

Iron Hurdles, Railing, Tree Guards,

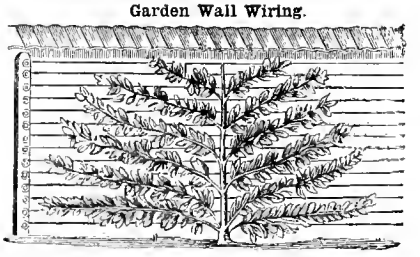
FRUIT ESPALIERS, WALL FRUIT TRAINERS, &c.

☞ *Illustrated and Described in F. M. & Co.'s New Catalogue, sent on application.*

LONDON BRANCH—

1, DELAHAY ST., WESTMINSTER, S.W.

Garden Wall Wiring.



R. HOLLIDAY, PRACTICAL WIREWORKER, 24, Portobello Terrace, Notting Hill Gate, London, W., begs to call the attention of all Gardeners who are about to have their Garden Walls Wired to his system of Wiring Walls, as being superior to all others for neatness, strength, and durability.

For Neatness,—Because all the Wires are kept perfectly tight, without the use of the Raidisseur.

For Strength,—Because very much stronger Wire can be used, therefore not liable to be drawn out of the horizontal line by the branches of trees.

For Durability,—Because, being able to use the strong Wire, it is not so likely to be eaten through with the galvanism as the thin Wire, as used in the French system.

The above Engraving is an Example of our system of Wiring Garden Walls. We have recently completed the Wiring of the New Garden Walls for the Marquis of Salisbury, Hatfield House. The Walls are 12 feet high and 753 yards long, wired on both sides; making a total length of 1506 yards,—our system being chosen in preference to any other.

Illustrated Catalogues of Garden and Conservatory Wirework, Rabbit Proof Hurdle Fencing, &c., may be had on application as above.

THOMAS'S

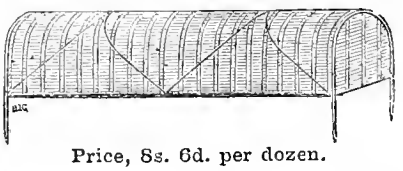
IMPROVED PEA & SEED GUARDS

REDUCED PRICES. SEASON 1876.

Superior Quality. Galvanised after made.

NEW PATTERN WITH DIAGONAL STAYS.

No. 76. 3 ft. long, 6 in. wide, 6 in. high.



Price, 8s. 6d. per dozen.

Two end pieces included with each dozen. The above being smaller in the mesh than the ordinary diamond pattern, are proof against the smallest birds.

Having a large stock of the above, Orders can be executed on receipt.

Five per cent. discount allowed for prompt cash on Orders amounting to 20s. and upwards. Special quotations for large quantities.

J. J. THOMAS & CO.,

PADDINGTON WIREWORKS,

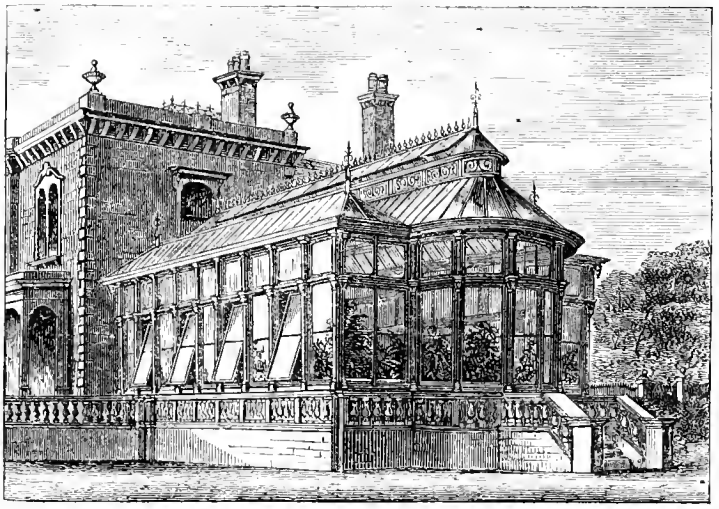
285 and 362, EDGWARE ROAD, LONDON, W.

Illustrated and Priced Catalogues of every description of Horticultural Wirework on application.

Post-office Orders payable at 310, Edgware Road.

MESSENGER & COMPANY,

CONTRACTORS, MIDLAND HORTICULTURAL BUILDING AND HOT-WATER ENGINEERING WORKS, LOUGHBOROUGH,



Beg to inform their numerous Patrons and the Public generally, that having erected new, more extensive, and commodious works, fitted with the best steam-power machinery, for the construction of Horticultural Buildings in wood or iron, plain or ornamental, large or small, they are in a position, from their great facilities and experience, to carry out with dispatch, in the best manner, at very moderate cost, the orders with which they are entrusted. Only thoroughly well-seasoned timber used. Glasshouses erected on Messenger's patent principles are, owing to mechanical arrangements, very strong, *most durable*, light, *elegant; perfect efficiency* for purpose intended is *guaranteed;* are economical in cost and maintenance. Messenger's Patent Boilers, Flexible Jointed Hot-water Pipes and Valves, are now in use in many thousands of instances, with the greatest success. Particulars on application.

Plans and Estimates forwarded. Ladies and Gentlemen waited upon. The Plans of Architects and others carried out.

ILLUSTRATED CIRCULAR FREE.

WORCESTER PEARMAIN APPLE.

Awarded a First-class Certificate by the Royal Horticultural Society, October 6, 1875.

Fruit 2¾ inches wide, and same in height, conical; skin smooth, brilliant red, with minute fawn-coloured dots; flesh very tender, crisp, juicy, and sweet, with a very pleasant flavour, perhaps the most valuable of all for market. The tree is as productive as Lord Suffield Apple, and one of the handsomest fruits in cultivation. Ripe end of August, and will keep till Christmas.

Maiden Trees, 10s. 6d. each; Pyramid or Trained Trees, 21s. each. Coloured Plates, 6d. each.

RED HAWTHORNDEN APPLE.—Dr. Hogg describes this as large, oblate, and angular; skin smooth, greenish yellow, with a red blush next the sun; flesh white, tender and juicy, with a sprightly and agreeable acidity. A very early and valuable culinary Apple; ripe August and September. Maiden trees, 7s. 6d. each; Pyramid or trained trees, 10s. 6d.

YORKSHIRE BEAUTY APPLE.—Dr. Hogg, in his *Manual*, says this fruit is 3½ inches wide and 3 inches high, roundish, flattened, and angular; skin bright yellow, with a bright red blush on the sunny side; flesh tender and juicy, with an agreeable acidity. A first-rate culinary Apple for August and September; the great size and excellent quality ought to commend it as a good orchard fruit for the market. Maiden trees, 5s. each; Pyramid or trained trees, 7s. 6d.

NEW GOLDEN LABURNUM.—Unquestionably the finest hardy golden-leaved tree known, of immense value for park and garden scenery; it will take a foremost position among pictorial and garden trees; the foliage is a brighter golden-yellow than the flower of the ordinary Laburnum. First-class Certificate awarded by the Royal Horticultural Society, August 4, 1875. Price 10s. 6d. each; Standard and extra strong trees, 21s. Coloured plates, 6d. each.

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RICHARD SMITH,
NURSERYMAN and SEED MERCHANT, WORCESTER.

Trade WALTER MAC FARLANE & C° GLASGOW SARACEN FOUNDRY Mark.

Branded on every Casting.

Macfarlane's Castings,

Architectural, Artistic, and Sanitary,

FOR ARCHITECTS, CIVIL AND MECHANICAL ENGINEERS, Contractors, Builders, Joiners, Plumbers, &c.,

Railings; Balconies; Verandahs; Conservatories; Shop and Warehouse Fronts; Arcades; Winter Gardens; Covered Ways; Saloons; Semi-enclosed Airing Rooms, Smoking Divans, &c.; Waiting Rooms; Clock and Water Towers; Pavilions; Bandstands; Arbours; Garden Entrances; Garden Screens; Boathouses, &c. Plain and Ornamental Castings of every description for Mansions, Halls, Schools, Barracks, Factories, Markets, Railway Stations, Bridges, Esplanades, Parks, Gardens, Pleasure Grounds, &c.

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Illustrated CATALOGUE with Price List and Estimates for special Designs on application.

WALTER MACFARLANE & CO, GLASGOW.

TANNED GARDEN NETTING, 1½*d.* per Square Yard, for Protecting Seed beds, Peas, Fruit, Strawberries, &c., from Birds, Frost, Blight, &c., and as a Fence for Fowls, in 1, 2, 3, and 4 yards widths. Hexagon, Tiffany, and other Netting, Galvanised Wire Netting, Pea Hurdles, and Seed Protectors, by

C. WRIGHT, 29, Lime Street, E.C., late 376, Strand, W.C.

NETTING for FRUIT TREES, SEED BEDS, RIPE STRAWBERRIES, &c.

TANNED NETTING for protecting the above from Frost, Blight, Birds, &c., 2 yards wide, 3*d.* per yard, or 100 yards, 20s.; 4 yards wide, 6*d.* per yard, or 50 yards, 20s.

NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowls, 2 yards wide, 6*d.* per yard; 4 yards wide, 1s. per yard; 1" inch mesh, 4 yards wide, 1s. 6*d.* per yard.

TIFFANY, 6s. 6*d.* and 7s. 6*d.* per piece of 20 yards.

EATON AND DELLER, 6 & 7, Crooked Lane, London Bridge.

CAUTION TO BUYERS
Of WIRE NETTING.

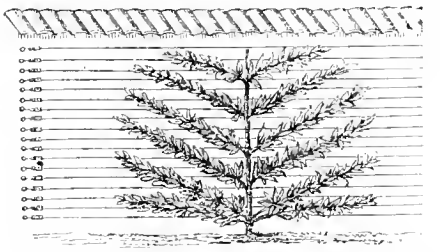
The great reputation and success of Messrs. J. B. BROWN AND CO.'s VIENNA PRIZE WIRE NETTING seem to have induced certain Dealers in Wire Netting to advertise an inferior article at reduced prices, specifying the mesh, gauge, &c., as if such were the same in quality and value as the Prize Wire Netting of which Messrs. J. B. BROWN & Co. are THE SOLE MANUFACTURERS.

Messrs. BROWN & Co. would suggest that, before ordering quantities, one roll of their Wire Netting should be ordered and one roll of that advertised at reduced prices. The size and shape of the mesh may then be examined, the thickness or strength of wire, the weight of the rolls and the exact measurement, the general finish of the manufacture, and the quality of the galvanizing.

This examination will prove the respective qualities of the Netting.

90, Cannon Street, London, E.C.

THE FRENCH SYSTEM
OF WIRING GARDEN WALLS, &c., FOR
TRAINING FRUIT TREES.



GALVANIZED EYED NAILS for Stretching Wires, one at each end of wall, 1s. 10*d.* per dozen. Smaller Size for supporting the wire, every 10 feet, 10*d.* per dozen. Smallest Sizes, not recommended, 6*d.* per dozen.

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SMALL-EYED STRAINING SCREWS and NUTS, neater than Raidisseurs, for Tightening Wires, 3s. 6*d.* doz.

No. 14 GALVANIZED WIRE, placed 10 inches apart on the walls, 2s. per 100 yards.

"The system of wiring a wall is simple, cheap, almost everlasting, and excellent in every particular, and it must ere long be universally adopted."

Prices of Iron and Wire Espalier for training Fruit Trees on application.

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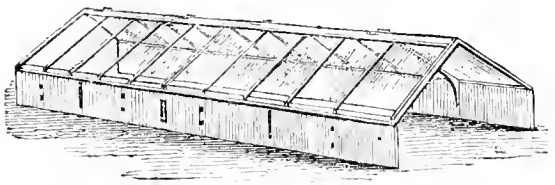
90, CANNON STREET, LONDON, E.C.

PARHAM'S PATENT SYSTEM of GLAZING (without Putty) on CHANNELLED WROUGHT-IRON RAFTERS

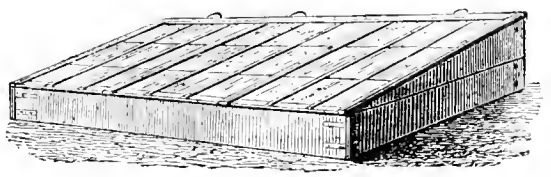
secures almost entire immunity from Breakage of Glass, extreme facility for Repairs, and absolute freedom from Drip.

It is most extensively adopted, and meets with unqualified approval.

PORTABLE PLANT PRESERVERS.



CUCUMBER AND MELON FRAMES.



WILLIAM PARHAM,

Horticultural Builder and Hot-water Engineer,

NORTHGATE WORKS, BATH;

AND

280, Oxford Street, London, W.

*** Full size Specimen Houses and Drawings of many important Works which W. P. has carried out may be seen at either address.

Illustrated Catalogues and Price Lists free.

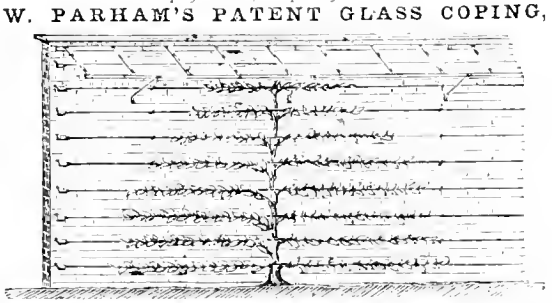
Designs and Estimates prepared free of charge for Horticultural Buildings and Hot-water Works of any magnitude.

The advantages of this system of Glazing are also secured in the accompanying Garden Requisites, and W. P. invites special attention to the wonderful success of his Patent Glass Coping, which far exceeds all he could have hoped for.

(*See Testimonials.*)

A Certain Crop of Fruit, in spite of Frost, is secured by

W. PARHAM'S PATENT GLASS COPING,



GALVANIZED WALL WIRING & ESPALIERS.

Holdfasts. 2s. per dozen. Raidisseurs. 4s. per dozen. Eyes. 6*d.* per dozen. No. 13 Wire. 6*d.* per 100 yards.

Indestructible Terra-Cotta Plant Markers.
MAW AND CO.'S PATENT.—Prices, Printed Patterns, and Specimens, sent post-free on application; also Patterns of Ornamental Tile Pavements for Conservatories, Entrance Halls, &c.
MAW AND CO., Benthall Works, Broseley.

Window Glass, Sheet Lead, Paints, &c.
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87, Bishopsgate Street Without, E.C.

LAWN SWEEPING, COLLECTING, and ROLLING MACHINE (Patented).—The only way to keep your Lawns beautiful is by constant Sweeping and Rolling. (Vide "Calendar of Operations.")
Illustrated Price Lists two stamps.
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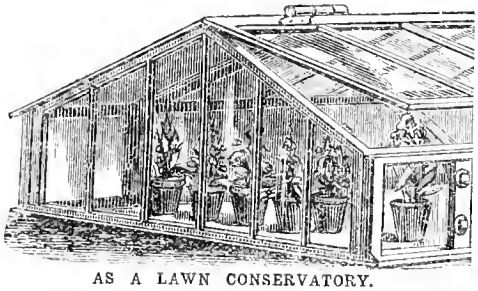
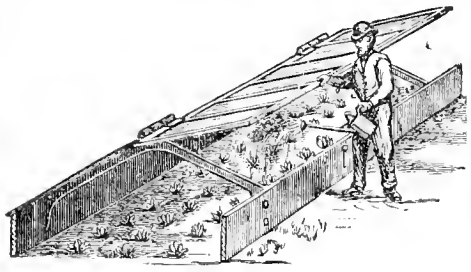
BOULTON & PAUL (LATE W. S. BOULTON & CO.), NORWICH,
HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MAKERS.

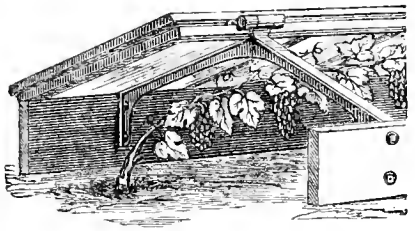
Now Ready, our ILLUSTRATED CATALOGUE for 1876 of HORTICULTURAL BUILDINGS, containing upwards of 60 Engravings with Prices of Conservatories, Greenhouses, Peach Houses, Forcing Houses, &c., Free by Post for 12 stamps.



AS A LAWN CONSERVATORY.



FOR PLANTS OR VEGETABLES.



AS A VINERY.

The Judges at the Royal Horticultural Society's Great Meeting lately held at Birmingham, pronounced these Patent Plant Preservers and Ground Vineries to be by far the best and most useful articles of the kind they ever saw, and awarded them the ONLY PRIZE.

Instead of having to remove or slide loose glass every time it is necessary to attend to the plants, we attach the glazed lights (21-oz.) with hinges to the frame of each light, thereby doing away with continual breakage of glass and loss of time. Two men can instantly remove a complete length, 12 ft. by 4 ft. wide; thus proving them to be really portable. They are made in the following sizes. One pair of ends is sufficient for any number of lengths, if set in a continuous row.

Cash Prices carriage paid to any Station in England on Orders amounting to 40s. and upwards.

	Price.	Ends per pair extra.
6 feet long by 2 feet wide	£1 5 0	5s. 0d.
12 feet long by 2 feet wide	2 10 0	5s. 0d.
6 feet long by 3 feet wide	1 15 0	7s. 0d.
12 feet long by 3 feet wide	3 5 0	7s. 0d.

	Price.	Ends per pair extra.
6 feet long by 4 feet wide	£2 6 0	8s. 6d.
12 feet long by 4 feet wide	4 4 0	8s. 6d.
12 feet long by 5 feet wide	5 10 0	10s. 6d.
12 feet long by 6 feet wide	7 0 0	12s. 0d.

Lawn Conservatories, with Glass sides and ends, 12 feet long by 4 feet wide, £7 5s.; 12 feet long by 5 feet wide, £8 15s.; 12 feet long by 6 feet wide, £10.

PATENT UNIVERSAL PLANT PRESERVERS, Large Sizes to Build on Brick Walls, for use as Span-roof Pits, suitable for Forcing, Propagating, Growing Cucumbers, Melons, and a variety of other things too numerous to mention. Write for New Illustrated List post free.

OPINIONS OF THE PRESS.

"The uses to which such frames can be put are fully recognised by practical gardeners, and if any notice can be taken of the great demand arising for such contrivances amongst amateurs, it would appear that they too are not ignorant of their great value." *Gardeners' Chronicle.*

"The Ground Vinery which has the greatest advantages is unquestionably that manufactured by W. S. Boulton & Co."—*Floral World.*

"Considering their substantial character, portability, and the many ways in which they may be employed, we anticipate a very large demand when they become generally known."—*Gardeners' Magazine.*

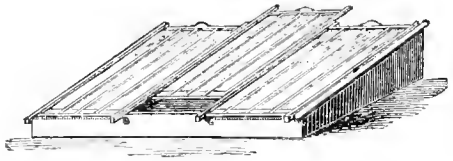
"Every convenience is provided to save time in cases of removal, planting, watering, and giving air. The glass is firmly fixed and puttied—an essential point. They are complete and ready for use the moment they are received, &c."—*The Garden.*

MELON OR CUCUMBER FRAMES.

All sizes (glazed with 21-oz.) ready for immediate delivery.

Height at back, 24 inches; at front, 13 inches; sides, 1¼ inch thick; lights, 2 inches thick. All made of very best red deal. Painted three coats. Every pane of glass is nailed as well as puttied in. Each light is provided with an iron strengthening rod and handle.

Glazed with 21-ounce.



Cash Prices, carriage paid to any station in England when orders amount to 60s. and upwards.

4 feet long by 6 feet wide, 1 light	..	£1 17 6
8 feet long by 6 feet wide, 2 lights	..	3 5 0
12 feet long by 6 feet wide, 3 lights	..	4 17 6
16 feet long by 6 feet wide, 4 lights	..	6 7 6
20 feet long by 6 feet wide, 5 lights	..	7 17 6
24 feet long by 6 feet wide, 6 lights	..	9 7 6

One half allowed for Packing Materials when returned free to our Works. Cash or reference respectfully requested with transmission of all first orders.

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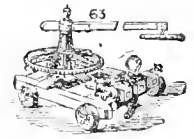

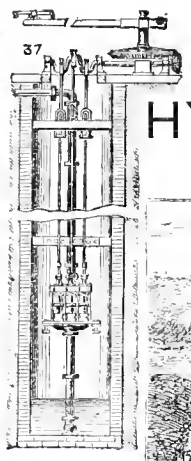

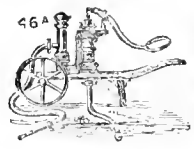

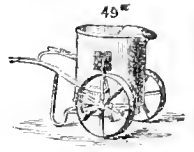

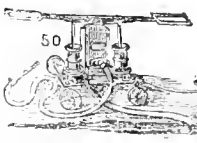

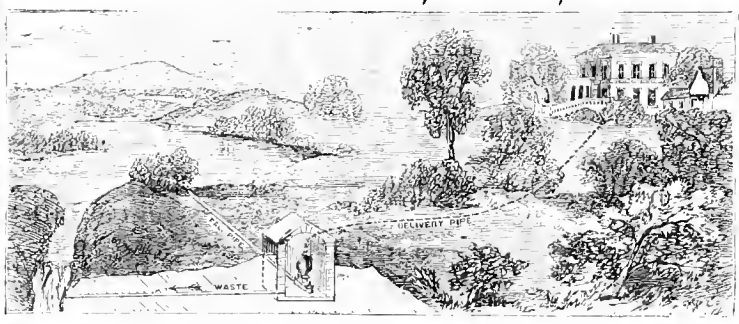

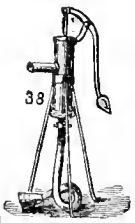

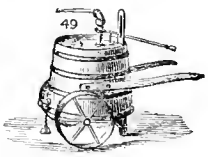

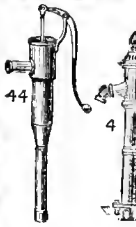

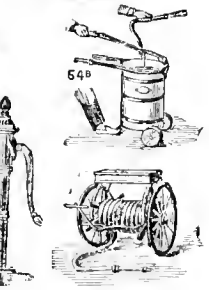

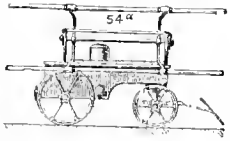

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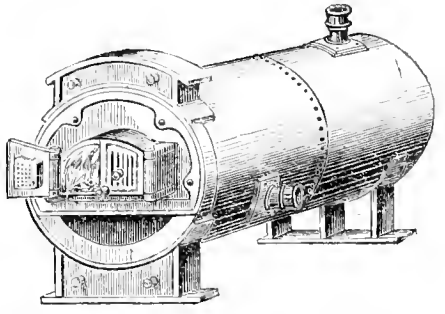

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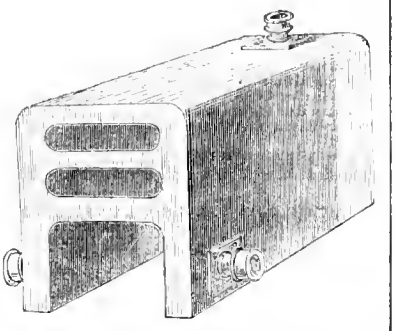

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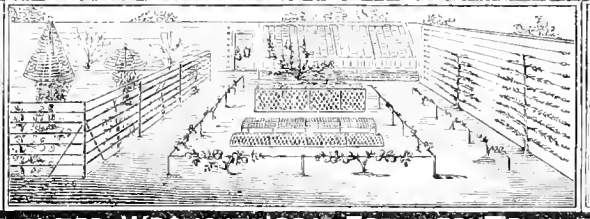

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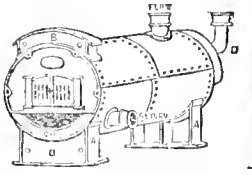

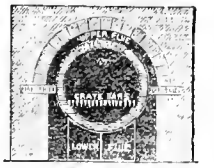

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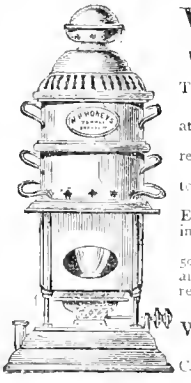

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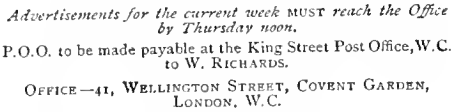

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Town Clerk's Office, Town Hall, Bradford, Feb. 28, 1876.

WANTED, a NURSERY MANAGER, to take the entire Charge of the Pinefield Nurseries, Elgin, Scotland; extent, 50 acres. To one who understands the Rearing of Forest Trees and General Nursery-work a liberal salary will be given.—WILLIAM GRANT, Accountant, Caledonian Bank, Elgin.

WANTED, as GARDENER, a married Man, with no encumbrance. Fair knowledge of Grape and Wall-fruit Culture required. Will have a lad to overlook, also cows, and live on the premises.—Apply, stating wages, to Mrs. PEMBERTON, Havering-atte-Bower, Romford, Essex.

WANTED, as GARDENER, and to look after a horse and cow, a steady married Man, without family; Wife to look after Poultry. Wages 22s per week, and live in lodge.—T. S., 83, Oxford Street, W.

WANTED, as OUTDOOR FOREMAN, a sober, industrious Man, with a good knowledge of Trees, Shrubs, Roses, Fruits, &c.; a good Budder and Grafter.—K., Nutting & Sons, Barbican, E.C.

WANTED, OUT-DOOR FOREMAN, SALESMAN, &c., able to Propagate, Prune, and make up orders. Wages 30s. per week.—Apply to G. & W. YATES, Nurserymen and Seed Merchants, Market Place, Manchester.

WANTED, at Lady-day next, a NURSERY FOREMAN. Must be a good Propagator and understand Stove and Greenhouse Plants—State age, reference, and wages required, to ROBT. T. VEITCH, New North Road Nursery, Exeter.

WANTED, a good Working NURSERY FOREMAN.—One who thoroughly understands the Cultivation of Azaleas, Camellias, Dracænas, Stephanotis, Gardenias, Eucharis, Ferns, Bulbs, &c. He will be required to help in the Sale of Plants in a Show-house. State age, reference, and wages required to J. B. GOUBERT, Nurseryman, Kilburn, London, N.W.

WANTED, a PROPAGATOR of Soft-wooded Plants. A permanent situation offered, with increasing salary, to a suitable Man. Wages to commence, 20s. per week. State where last employed.—JOHN JEFFERIES AND SONS, Royal Nurseries, Cirencester.

WANTED, a PROPAGATOR (HARD-WOODED).—State wages required, age, and situations previously filled, to E. G. HENDERSON AND SON, Wellington Road, St. John's Wood, N.W.

WANTED, a clever experienced NURSERY WORKMAN, of good general character. Wages 24s. per week.—Apply with references to ISAAC DAVIES, Nurseryman, Ormskirk.

WANTED, a steady, sober, married Man, without incumbrance, to reside in the house, to act as GROOM and GARDENER; Wife as GENERAL SERVANT. Good reference required.—Apply, stating wages, &c., to Mr. GRAY, Worsbro' Gardens, near Barnsley.

WANTED, a few hands as JOBBING GARDENERS, of good character and ability. Testimonials required.—Apply to D. S. THOMSON, The Nurseries, Wimbledon, S.W.

WANTED, in the Nursery, TWO good MEN, one as Ground Foreman's Leading Man—must be able to Bud and Graft, and use the Knife well; the other as Journeyman or Improver in the Glass Department.—Apply, stating wages, &c., to R. AND F. ALLUM, The Nurseries, Tamworth.

WANTED, a thorough practical MAN, for Outdoor Nursery Work. Must be well up in Budding, Grafting, Pruning, &c. Single Man preferred. Good reference required.—JAMES W. TODMAN, Eltham Nursery, S.E.

WANTED, TWO young MEN, who have some experience, to Work in the Houses.—Must be able to give good references. Wages, 18s. per week.—WILLIAM BADMAN, Cemetery Nursery, Gravesend.

WANTED, IMMEDIATELY, an industrious young MAN, to Assist in the Houses, where Soft-wooded Plants are grown for Covent Garden Market. Experience in this class of work indispensable. Good references required.—Apply personally at the office of Mr. WRIGHT, Dicre Road, Lee, near Blackheath, S.E.

Ground Foreman.

WANTED, IMMEDIATELY, a married MAN, thoroughly practical in Forest Tree and general Nursery-work. Well up in Roses, Fruit Trees, and Hardy Shrubs.—JOHN CARTER, Nursery, Keighley, Yorkshire.

WANTED, a Young MAN for the Garden, to live in the bothy with another. Must thoroughly understand the Vinery, Peach-houses, and Plants. Wages £1 per week, and milk. Must have a good character from last employer.—A. B. C., Mr. Bedbrough, Butcher, High Street, Windsor.

WANTED, a good steady Working MAN—who can Bud, Graft, and Layer, and act as Salesman occasionally—to look after a small Nursery. Must have a good character. G. SMALL AND SON, Nurseries, Bkeston.

WANTED, a steady MAN, accustomed to Garden Work, who also understands the Care of a Cow and Poultry.—State age, with wages required, to B. A., Post Office, Kingston-on-Thames.

WANTED, as IMPROVER, a young Man from 18 to 23, with some knowledge of the Nursery Trade.—Apply, with testimonials, &c., to GODWIN AND SON, The Nurseries, Ashbourne.

WANTED, a good handy GARDEN LABOURER. Constant employment.—Apply to L. J. WALKER, The Nurseries, Wood Green, Waltham Abbey, Essex.

WANTED, as KNIFEMAN, a steady and industrious Man. Must be a successful Budder and Grafter. Wages, 20s. per week.—State age, and where last employed, JOHN JEFFERIES AND SONS, Royal Nurseries, Cirencester.

Bouquet Maker.

WANTED, IMMEDIATELY, a young Woman as BOUQUET MAKER. Must be a good hand at the Business, and a sharp Saleswoman, with good address. Age not under 25 years. Liberal wages will be given to a suitable person.—Address, stating experience, &c., to TURNER BROS., Florists, &c., 21, Basnett Street, Liverpool.

WANT PLACES.

Head Gardeners.

JOHN LAING can at present recommend with every confidence several energetic and practical Men, of tested ability and first-rate character. Ladies and Gentlemen in WANT of GARDENERS and BAILIFFS, or GARDENERS for First-rate establishments or Single-hand situations, can be suited, and have full particulars by applying at Stanstead Park and Rutland Park Nurseries, Forest Hill, London, S.E.

B. S. WILLIAMS, having at the present time several very excellent GARDENERS upon his Register, is desirous of placing them in Situations where great experience and trust are required. B. S. W. would at the same time beg to intimate that when a Gardener is applied for that the filling of the situation should be left with him, as that would prevent unnecessary correspondence and delay.—Victoria and Paradise Nurseries, Upper Holloway, London, N.

JOHN HARRISON has on his Books several clever, experienced GARDENERS, whose characters and abilities are all that can be required. North of England Rose Nurseries, Darlington.

GARDENER (HEAD), where three or four are kept.—Age 30, single, thorough knowledge of the profession in all its branches. Good reference. State wages, &c., C. B., 90, Sussex Street, Winchester, Hants.

GARDENER (HEAD).—Age 24 married; understands Early and Late Forcing of Vines, Cucumbers, Melons, &c., Flower and Kitchen Gardening. Good character.—W. SMIT, 13, Clewer Village, Windsor, Berks.

GARDENER (HEAD).—Age 34, married; well experienced in all branches. Nearly five years in present situation.—GARDENER, Porthgwidden, Truro, Cornwall.

GARDENER (HEAD).—Age 30, married, no family; thoroughly understands the various branches of Gardening. Fifteen years' experience—five years in the situation now leaving. Good references.—B. B., "Garlick," Esher, Surrey.

GARDENER (HEAD).—Age 32; thoroughly practical in all branches of the profession; has had the management of a large Establishment in his last situation. There and a-half years' character.—J. S., 5, Westfield Road, Surbiton, S.W.

GARDENER (HEAD), where three or more are kept.—Age 28, married; thoroughly understands Early and Late Forcing, and all other branches of the profession. Good character.—P. C., Messrs. John Standish & Co., Royal Nurseries, Ascot.

GARDENER (HEAD).—Age 36, single; twenty years' first class experience in Noblemen's and Gentlemen's Gardens. Thoroughly understands the profession in all its branches. Five years in last situation; left on account of the establishment being broken up. Can be highly recommended.—W. X. Y., 3, Manchester Street, Gray's Inn Road, London, W.C.

GARDENER (HEAD), age 36, married.—G. COATES, four and a half years Gardener to John Harvey, Esq., is open to a re-engagement where great experience and trust are required; thorough, energetic, and practical in all branches of Gardening; many years' experience in some of the best places in England, and can produce first-class testimonials from such. Can be very highly recommended by present employer.—Ickwell Bury, Biggleswade, Beds.

GARDENER (HEAD), where another is kept.—Age 30, married, no family; thoroughly understands every branch of Gardening.—C., Wesley's Cottages, Linkfield Lane, Redhill, Surrey.

GARDENER (HEAD).—Great experience in every branch of Gardening, Vines, Pines, Early Forcing, &c.; accustomed to control of large staff of men. Experienced practically in Landscape work. Was fifteen years Gardener to the Earl of Derby, Knowsley. Highly satisfactory references and fullest particulars on application to J. FREEMAN, Upton, Chester.

GARDENER (HEAD, or good SINGLE-HANDED).—Age 28, married, four children; understands the profession in all its branches. Good references.—H. B., Post Office, Pontardawe, near Swansea.

GARDENER (HEAD, WORKING).—Age 27, married; understands Gardening in all its branches, including Pines, Vines, Melons, &c.—F. C., Chislehurst Common, Kent.

GARDENER (HEAD, WORKING).—Age 24; understands Vines, Peaches, Melons, Cucumbers, Stove and Greenhouse Plants, Flower and Kitchen Gardening, &c. S. T., 38, Alfred Street, Billing Road, Northampton.

GARDENER (HEAD, WORKING), age 35, married.—J. JEFFERSON, The Gardens, Carlton House, Worksop, wishes to recommend a practical Man, with 14 years' references from two places.

GARDENER (HEAD, WORKING).—Age 31, married; understands Vines, Cucumbers, Stove and Greenhouse Plants, Flower and Kitchen Gardening. Good character.—State wages, assistance, &c., M. C., 18, Taunton Road, Lee, S.E.

GARDENER (HEAD, WORKING), where two or more are kept.—Age 32, married; can be highly recommended by present employer, with whom he has been more than five years.—GARDENER, Ickwell House, Biggleswade, Beds.

GARDENER (HEAD, WORKING), where two or more are kept.—Good experience in Early and Late Forcing, also Kitchen and Flower Gardening.—Z. Y. Z., 21, Weymouth Street, Watford.

GARDENER (HEAD, WORKING), or would take a good FOREMAN'S situation in a Market Garden where things are well done.—Age 40, married, thoroughly practical in every branch, well up in the Forcing of Fruits and Vegetables. Thorough good character and testimonials.—GARDENER, 9, Commercial Road, Southampton, Hants.

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GARDENER (SINGLE-HANDED).—Age 24, single; accustomed to Indoor and Outdoor Work. Can have first-class references from present and previous employers.—W., The Gardens, Elsham House, Grantham, Lincoln.

GARDENER (SECOND).—Age 23; understands Stove and Greenhouse Plants, &c. Good references.—R. STRICKLAND, Wheldrake, York.

GARDENER (SECOND).—Age 25; good knowledge of Vines, Stove and Greenhouse Plants. Please state wages and particulars to C. W., 2, Corn Street, Chemester.

GARDENER (SECOND), in a good Establishment.—Age 23; good knowledge of Vines and Stove and Greenhouse Plants. Eleven years' experience. Good references.—V. Z., Post Office, Dorking, Surrey.

GARDENER (SECOND), in a Gentleman's Garden. Three and a-half years' good character from present employer.—Apply, stating wages, SECOND GARDENER, Downton Hall, Ludlow, Salop.

GARDENER (SECOND), under a Foreman, in a Nobleman's or Gentleman's Garden.—Age 22. Five years' experience. Good character from present employer.—T. SIMONDS, Gardener at the Hall, Peasenhall, Suffolk.

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GARDENER (UNDER), under a good Foreman (in the houses preferred).—Age 23. Good reference.—A. B., Old Alersford, Hants.

GARDENER (UNDER, or SINGLE-HANDED).—Age 22. Four years' good character.—J. H., Mr. Coise's, Post-office, Stow-on-the-Wold, Gloucestershire.

GARDENER (UNDER).—Aged 20; in the Houses preferred. Good character.—State wages, &c., to G. R., Post-office, Bagshot, Surrey.

GARDENER (UNDER).—Age 18; has been four years in Gardens of Messrs. Money Wigram, who will recommend him.—WALTER DEBNAM, Moor Place, Great Hadham, Herts.

GARDENER (UNDER).—Age 21; fair knowledge of Stove and Greenhouse Plants, and Flower and Kitchen Gardening. Excellent character.—H. HARVEY, Halstead, near Sevenoaks.

To Head Gardeners

GARDENER (UNDER), under a good Foreman (in the houses preferred).—Age 20. Good references from present employer.—R. THAIN, Worthy Park, Winchester, Hants.

GARDENER (UNDER).—Age 20; under glass preferred. Used to general work. Good character.—State terms, &c., to M. N., 19, Town Gate, Leyland, Preston, Lancashire.

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FOREMAN in a good Establishment.—Age 25, single. Eight years' experience. Can be highly recommended by the Gardener.—W. K., Warley Hall Gardens, near Birmingham.

FOREMAN, in a good Establishment.—Age 27; thoroughly experienced in all branches.—A. B., 26, Faulkner Street, Bishop Fields, Chester.

FOREMAN, in a Gentleman's Establishment.—Age 25, single; well up in Gardening and its branches.—N. W., Tower Gardens, Belvedere Park, Kent.

FOREMAN, where Forcing is carried on extensively.—Has lived in two Noblemen's places the last six years. Good character.—THOMAS SURMAN, The Gardens, Highclere Castle, near Newbury.

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FOREMAN, or JOURNEYMAN, in a good Establishment.—Age 24. Eight years' experience. Can be well recommended. South preferred.—T. J., The Gardens, Kenyon Hall, near Manchester.

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NURSERY FOREMAN, TRAVELLER, or SALESMAN.—Age 29; well up in general Nursery Stock, outdoor and in.—A. B., *Gardeners' Chronicle* Office, W.C.

SEED TRADE.—Age 27; has had twelve years' experience in all branches, Wholesale and Retail, including Seed Cleaning and Sample Sowing. A permanent situation desired (London preferred). Moderate salary if chance of progress.—SEEDSMAN, 9, Trafalgar Street, Leeds.

SEED TRADE.—Age 18, respectable. Country preferred. Three years' excellent character. E. P., Mr. B. Maller, Lewisham.

IMPROVER, under a Foreman, to Assist in the Houses in a good Establishment.—Age 17, respectable. Address, stating all particulars, H. BURCOMBE, Crown Inn, Harlington, Hounslow.

IMPROVER, in a Gentleman's Establishment or Nursery, where he could learn the profession.—Age 19; has acted as Groom, and attended to Garden and Greenhouse. Three years' character.—P. QUINN, Rollesby Rectory, Norwich, Norfolk.

IMPROVER (age 18), under a Gardener, where he could learn the profession. Has been brought up in a Clergyman's Establishment, employed in the Garden, House, &c.—S. K., Wethensfield, near Braintree, Essex.

IMPROVER, in a Gentleman's Garden, a short distance from London.—Age 18; small experience.—G. P., Vicar, Ilford, Essex.

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GRATEFUL—COMFORTING.
"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided our breakfast tables with a delicately-flavoured beverage which may save us many heavy doctors' bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal shaft by keeping ourselves well fortified with pure blood and a properly nourished frame."—*Civil Service Gazette.*

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DINNEFORD'S FLUID MAGNESIA.—
The best remedy for ACIDITY of the STOMACH, HEARTBURN, HEADACHE, GOUT, and INDIGESTION; and the Safest Aperient for Delicate Constitutions, Ladies, Children, and Infants.
DINNEFORD AND CO.,
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Mr. Clifton, 45, Fleet Street, Bury, writes—
"I have great pleasure in recommending the Wafers, knowing that they are a sure remedy," &c.
In Asthma, Consumption, Bronchitis, Coughs, Colds, Gout, Rheumatism, and all Hysterical and Nervous Pains, Instant Relief is given by Dr. LOCOCK'S WAFERS, which taste pleasantly. Sold by all Druggists, at 1s. 1½*d*., 2s. 9*d*., 4s. 6*d*., and 11s.

GREEN'S PATENT "SILENS MESSOR" & "MONARCH,"

Or NOISELESS LAWN MOWING, ROLLING, and COLLECTING MACHINES for 1876.

The Winners of Every Prize in all Cases of Competition.

PATRONIZED BY
HER MOST GRACIOUS MAJESTY THE QUEEN
On numerous occasions,

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The Late EMPEROR of the FRENCH,
The EMPEROR of RUSSIA,
And most of the Nobility, Clergy, and Gentry in the United Kingdom.

Upwards of 75,000 of the above Machines have been Sold since they were first introduced in the year 1856,
And Hundreds of unsolicited Testimonials have been received testifying to their superiority over all other Machines, and are being received almost daily.

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The following are their advantages over all others :—
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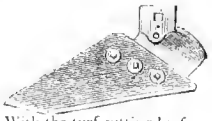
SINGLE AND DOUBLE-HANDED "SILENS MESSOR" LAWN MOWER,

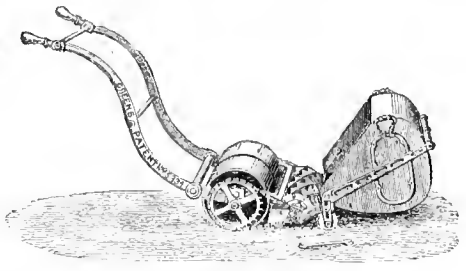
And Turf Cutting Knife with New Drum Fixing ready for attaching to Old Mowers.

	£	s.	d.
To cut 8 inches ... ... Can be worked by a Lady.	2	10	0
To cut 10 inches ... ... Ditto.	3	10	0
To cut 12 inches ... ... Can be worked by one Person.	4	15	0
To cut 14 inches ... ... Ditto.	5	16	0
To cut 16 inches ... ... Can be worked by one Person on an even Lawn.	6	17	0



With the turf cutting knife.

... £5 5 0
... 6 6 0
... 7 7 0



	£	s.	d.
To cut 18 inches ... ... Can be worked by a Man and Boy.	8	0	0
To cut 20 inches ... ... Ditto.	8	10	0
„ 22 „ ... ... Ditto.	9	0	0
„ 24 „ ... ... Ditto.	9	10	0

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DONKEY AND PONY MACHINES.

	£	s.	d.
To cut 26 inches	15	0	0
„ 28 „	17	0	0
„ 30 „	18	10	0
Leather Boots for Donkey	1	0	0
„ „ Pony	1	4	0

HORSE MACHINES.

	£	s.	d.
To cut 30 inches	22	0	0
„ 36 „	26	0	0
„ 42 „	30	0	0
„ 48 „	34	0	0
Leather Boots for Horse	1	9	0

The 26 and 28 inches can easily be worked by a Donkey, the 30 inches by a Pony, and the larger sizes by a Horse; and as the Machines make little noise in working, the most spirited animal can be employed without fear of its running away, or in any way damaging the Machines.

Carriage paid to all the principal Railway Stations and Shipping Ports in England, Ireland, and Scotland.

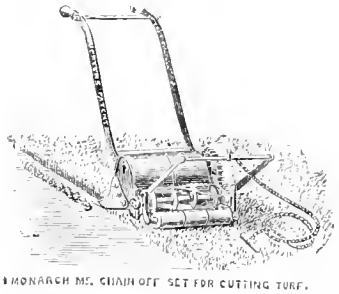
GREEN'S PATENT "MONARCH" LAWN MOWER,

WITH CHAIN AND INTERNAL GEAR COMBINED.

This Mower has only few cutters in the cylinder, which runs at a very quick speed, so that it is well adapted for cutting long, coarse, rough, and wet Grass.

It is strongly made and does its work admirably.

It will cut nearer to an object than any other Lawn Mower extant.



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The prices for the "MONARCH" Mower are in every respect the same as for the "SILENS MESSOR," with Grass Box, &c., complete.

The sides of the 12, 14, and 16-inch "Monarch" Mowers are all prepared for the Turf Cutting Knife, so that it can be fixed to them at any time. Price, 10s.

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Green's Patent Lawn Mowers have proved to be the best, and have carried off every Prize that has been given in all cases of competition.

Green's Lawn Mowers are the only Machines in constant use at the Royal Horticultural Society's Gardens, South Kensington, London.

N.B.—Those who have Lawn Mowers which require repairing should send them to either our Leeds or London Establishment, where they will have prompt attention, as AN EFFICIENT STAFF OF WORKMEN IS KEPT AT BOTH PLACES.

A Stock of 500 Mowers, including all sizes, is kept at our London Establishment, from which Purchasers can make their selection, and have prompt delivery.

SPECIAL NOTICE.

GREEN'S PATENT LAWN MOWERS possess (over those of all other makers) the advantage of self-sharpening; the cutters, being steel on each side, when they become dull or blunt by running one way round, the cylinder can be reversed again and again; and by bringing the bottom edge of the cutters against the bottom blade, the Machines will cut equal to new ones. Arrangements have been made so that the cylinder can be reversed by any inexperienced person in two or three minutes.

When Green's Lawn Mowers are used there is no ridge or wave-like appearance left on the sward, but they leave the lawn with a smooth, even, and carpet-like surface, which is pleasing and delightful to the eye of the observer.

THEY CAN BE HAD FROM ALL RESPECTABLE IRONMONGERS AND SEEDSMEN IN THE UNITED KINGDOM, OR FROM

THOMAS GREEN & SON, Smithfield Ironworks, Leeds; and 54 and 55, Blackfriars Road, London, S.E.

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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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Subscribers who wish to have "The Gardeners' Chronicle" forwarded DIRECT FROM THE OFFICE are respectfully informed that payment MUST BE MADE IN ADVANCE.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W. — NOTICE. — SHOW of SPRING FLOWERS, FRUIT and FLORAL COMMITTEES' MEETINGS, on WEDNESDAY next, March 15, at 11 o'Clock. GENERAL MEETING for ELECTION of FELLOWS, &c., at 3 o'Clock. Band from Three. Admission, 3s. 6d., or by Tickets bought before the 15th, by Fellows only, 2s. 6d.

N.B. The Show will be held in the Conservatory and Arcades.
J. S. DAVENPORT, A.S.

ROYAL BOTANIC SOCIETY, Regent's Park, S.W.
EXHIBITIONS of SPRING FLOWERS, Wednesdays, March 29 and April 26.
SUMMER EXHIBITIONS, Wednesdays, May 26 and June 21
EVENING FETE, Wednesday, July 5.
SPECIAL FETE and EXHIBITION, Thursday, June 1.
Schedules of Prizes and Tickets are now being issued.

Notice.

ROYAL AQUARIUM SUMMER and WINTER GARDEN.—SCHEDULES of all the FLOWER and FRUIT EXHIBITIONS are now ready, and may be had by applying to
JOHN WILLS, Superintendent of Horticultural Exhibitions, Royal Aquarium Summer and Winter Garden, Westminster, London, S.W.—Feb. 9.

THE INTERNATIONAL POTATO EXHIBITION of 1876 will be held at the Alexandra Palace, on SEPTEMBER 28 and 29, when PRIZES amounting in value to upwards of ONE HUNDRED and THIRTY POUNDS will be awarded.
The Schedule is now ready, and may be obtained on application to PETER McKINLAY, Esq.
23, Upper Thames Street, London, E.C.—March 7.

ROYAL MANCHESTER BOTANICAL and HORTICULTURAL SOCIETY.
FLORAL and HORTICULTURAL MEETING at the Town Hall, Manchester, on TUESDAY, March 14
GRAND NATIONAL HORTICULTURAL EXHIBITION, 1876, JUNE 2 to 9.
For Schedules, apply to the undersigned.
BRUCE FINDLAY.
Royal Botanic Gardens, Manchester.

GLASGOW and WEST of SCOTLAND HORTICULTURAL SOCIETY.
EXHIBITIONS for 1876.
SPRING EXHIBITION, March 29, in City Hall.
SUMMER EXHIBITION, May 10, in Crystal Palace, Botanic Gardens.
AUTUMN EXHIBITION, Sept. 12 and 13, in City Hall
Nearly SEVEN HUNDRED POUNDS offered in PRIZES. Schedules may be had from
FRANC. GIBB DOUGALL, Secretary.
157, Canning Street, Glasgow.—March 11, 1876.

THE BURTON-ON-TRENT FLORAL and HORTICULTURAL SHOW.
The FIRST EXHIBITION of the Season will be held on JUNE 28. Open to all England. £20, £10, and £5 will be given for the best twelve Stove and Greenhouse Plants.
Schedules and further information may be obtained by applying to Mr. WM. VEOMANS, Sec.
214, Derby Street, Burton-on-Trent.

CARTER'S GRASS SEEDS for Lawns and Parks, 20s. per bushel.

CARTER'S GRASS SEEDS for Permanent Pastures, 22s. 6d. to 36s. per acre.

CARTER'S GRASS SEEDS. Carriage Free. To suit all Soils.

CARTER'S GRASS SEEDS for Renovating Meadows and Lawns, 18s. to 20s per bush.

CARTER'S, THE QUEEN'S SEEDSMEN, 237 and 238, High Holborn, W.C.

Lilium auratum.—"The Golden-rayed Lily of Japan"

B. S. WILLIAMS, having received a large importation of the above beautiful LILY, can now offer splendid flowering Bulbs at the following low prices, viz.—18s., 24s., and 30s. per dozen; extra-sized Bulbs, 3s. 6d. and 5s. each.
Victoria and Paradise Nurseries, Upper Holloway, N.

Verbenas, Verbenas, Verbenas.

WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

VERBENAS, VERBENAS, VERBENAS.—White, Purple, Scarlet, and Pink; also twelve extra choice named varieties, strong, healthy-rooted cuttings, perfectly free from disease, 6s. per 100, 50s. per 1000, for cash.
H. BLANDFORD, The Dorset Nurseries, Blandford.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Special Offer.

DWARF ROSES on Manetti, 30s. per 100, for cash only with order.
RICHARD LOCKE, Alexandra Nurseries, Red Hill, Surrey.

New Roses for 1876.

JOHN FRASER, of the Lea Bridge Road Nurseries, Leyton, E., has now ready for delivery strong Plants of the best varieties of NEW ROSES for 1876.
DESCRIPTIVE PRICED LIST on application.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy.
The Ottershaw Nursery, Chertsey.

New Roses for 1876.

H. BENNETT offers a careful selection of the above, in plants not to be equalled; unusually fine this season; ready in March. DESCRIPTIVE LISTS post-free.—Manor Farm Nursery, Stapleford, Salisbury.

The Oxford Roses, on Cultivated Seedling Brier.

GEORGE PRINCE'S Priced and Descriptive CATALOGUE now ready. All Roses are grown exclusively on the above stock at this establishment.
14, Market Street, Oxford.

To the Trade.—Double Yellow Primroses.

RODGER, McCLELLAND AND CO. have to offer very fine plants, just coming into bloom, at 14s. per 100, or £6 per 1000, very suitable for present display, or for market work.—64, Hill Street, Newry.

Hardy Single Primroses.

L. T. DAVIS offers strong Plants, in great variety of colours (no common), at 12s. per 100. Carriage free to Belfast.
Ogle's Grove Nursery, Hillsborough, Co. Down.

WANTED, strong Cuttings or Autumn-struck Plants of Mrs. POLLOCK, MAY QUEEN, and other TRICOLOR and SILVER GERANIUMS. State quantity and price
R. THORNHILL, Bowdon Nurseries, Bowdon, Cheshire.

WANTED, OLD CLOVE CARNATIONS.—J. C. WHEELER AND SON, Nurserymen, Gloucester.

CONSIGNMENTS wanted of best FRUITS and VEGETABLES by GEO. LAXTON, Jun., Salesman, Covent Garden Market. Unexceptionable references as to cash returns.

WANTED, MANETTI ROSE STOCKS. Send sample and price per 1000 to
CRANSTON AND MAYOS, Cranston's Nurseries, Hereford.

WANTED, 50,000 1-yr. or 2-yr. old SEEDLING QUICK; also a few Tons PATERSON'S VICTORIA SEED or LARGE POTATOS. Send lowest price for cash to
G. WINFIELD, Sandhurst Road, Gloucester.

WANTED, 5000 ASH, from 4 to 6 feet. State price, to
S. MAYOR, Back Rockingham Street, Woodhouse Lane, Leeds.

SUTTON'S GRASS SEEDS for PASTURES, 22s. 6d. to 36s. per Acre. Carriage free.

SUTTON'S GRASS SEEDS for PARK GROUNDS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for GARDEN LAWNS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for CROQUET GROUNDS, 20s. per Bushel. Carriage free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

LARCH, 18 inches to 2 feet, 21s.; 2 to 3 feet, 30s. CHESTNUT, Spanish, 18 inches to 2 feet, 30s., 2½ to 3 feet, 40s.; large quantity of Seedling do. ASH, 2 to 3 feet, 25s. per 1000. Stout, transplanted
GEO. CHORLEY, Midhurst.

JAMES SMITH, Darley Dale Nurseries, near Matlock, offers 100,000 MOUNTAIN ASH, an excellent tree for underwood, 2 to 3 feet, 22s. per 1000; 3 to 4 feet, 27s. 6d. per 1000; 4 to 5 feet, 30s. per 1000; 5 to 6 feet, 50s. per 1000; also up to 8, 10, and 12 feet.

Green Screens, for Shutting Out Unsightly Objects.

LOMBARDY POPLARS, fine large, 20 to 30 feet high, 3s. to 5s. each. Delivered on Rail.
T. JACKSON AND SON, Nurseries, Kingston, Surrey.

LIMES, ELMS, and CHESTNUTS—splendid trees, carefully grown, pruned, and frequently transplanted, with straight stems, good heads, stout and well rooted, in great quantity, at low prices.
EWING AND CO., Norwich.

GAME COVERTS. Pheasants at your front door.
See Advertisement in *Gardeners' Chronicle*, March 4, p. 292.

FOX and GAME COVERT. ENGLISH FURZE, 1-yr., 5s.; 2-yr., 10s. per 1000. ENGLISH BROOM, 1-yr., 5s.; 2-yr., strong, 15s. per 1000.
W. MAULE AND SONS, The Nurseries, Bristol.

Thorns, Thorns, Thorns.

PARKER AND BUSH offer extra strong THORN QUICK, 2 to 3 feet, three times transplanted. Price and samples on application.
St. Michael's Hill Nursery, Bristol.

PINES and CUCUMBERS, a few Plants for Sale; also STOVE PLANTS in EXCHANGE for GREENHOUSE PLANTS, &c.
J. METCALFE, Gardener, Elsham House, Grantham.

SEED POTATOS for Sale—a great variety. List of prices sent post-free on application.
JOHN BATH, Potato Salesman, 31, Wellington Street, Covent Garden, W.C.

To Potato Growers. For Sale.

THE AMERICAN CLIMAN POTATO.—This splendid variety in any quantity. For price, &c., apply to
Mr. THOS. ELEY, Merchant, Sible Hedingham, Essex.

To the Trade Only.

MANGEL.—Special quotation for our guaranteed true and extra selected stocks, on application to F. SANDER AND CO., Seed Growers, St. Albans.

CABBAGE PLANTS.—100,000 Robinson's Drumhead Cow Cabbage Plants, extra strong, at 3s. 6d. per 1000. Apply to
G. WINFIELD, Sandhurst Road, Gloucester.

PARSNIP SEED.—True Guernsey Hollow Crown, 6d. per oz., free by post on receipt of stamps.
J. H. PARSONS, Market Place, Guernsey.

To the Trade.

ASPARAGUS, 1-yr., 2-yr., and 3-yr. TROPŒOLUM CANARIENSE.
JAMES BIRD, American Nurseries, Downham.

Special Offer, to Clear the Ground

MULBERRIES.—The finest lot of Standards in England; also a quantity of 1-yr. and 2-yr. old Plants. Prices low. Apply to
BENJAMIN R. CANT, Nurseryman, Colchester.

Special Offer, to Clear the Ground

PEARS.—A superb lot of extra tall and strong Standards. Prices low. Apply to
BENJAMIN R. CANT, Nurseryman, Colchester.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

Hothouses, Hot-water Apparatus, &c.

HALLIDAY AND CO., HOTHOUSE BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates and Plans free. Best Construction! Best Materials! Best Workmanship! Catalogues free.
Offices, 22, Barton Arcade, MANCHESTER.

SALES BY AUCTION.

Important Notice.

To the NOBILITY, GENTRY, PLANT AMATEURS, and the TRADE.

MESSRS. PROTHEROE AND MORRIS, who for many years past have been obliged to refuse numberless Sales in consequence of their not being able to obtain a suitable room in which to conduct them, are now in a position to undertake a limited number of First-class Sales, having made arrangements with the authorities of the Auction Mart, Tokenhouse Yard, near the Bank of England, to have the use of the large Estate Room on the ground floor for the purpose. Its position in the very heart of the City, its close proximity to all the great centres of the monetary world, its easy access, large dimensions, and admirable proportions, render it the most attractive Auction Room in London.

Messrs. PROTHEROE AND MORRIS are desirous of directing the attention of those who wish to avail themselves of these facilities for disposing of their Collections of Choice Plants to the advisability of their giving as early an intimation as possible of probable Sales, as the pre-arrangement and the classification of the Auctions are always made with a view to insure the attendance of numerous buyers

Auction Mart, Tokenhouse Yard, E.C.

IMPORTANT SALE of 100 Lots of choice established ORCHIDS, mostly in flower, including Dendrobium crassinode, D. Falconeri, D. Wardianum, Phalænopsis Schilleriana, P. grandiflora, P. amabilis, Cymbidium eburneum, C. Parishii, Cyrtopodium Andersoniana, Lælia grandis, Vanda tricolor, Cypripedium Harrisianum, Oncidium sphacelatum, &c. Also 5000 LILIUM AURATUM from Japan, seventy TREE FERNS, with handsome trunks from 2 to 7 feet high, nearly all in growing condition, consisting of Cyathea dealbata and Smithii, and Dicksonia squarrosa. Also thirty large CAMELLIAS in flower, from 3 to 6 feet high; forty fine GARDENIA INTERMEDIA coming into flower, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above on MONDAY, March 13, at 11 for half-past 11 o'Clock to the minute.

On view the morning of Sale, and Catalogues had of the Auctioneers and Valuers, 98, Gracechurch Street, E.C.

Clarendon Nursery, Maida Vale, St. John's Wood, and WILLESDEN, MIDDLESEX

Highly Important to NURSERYMEN, FLORISTS, SEEDSMEN, and OTHERS desirous of securing a most valuable LEASEHOLD PROPERTY at the West End of London, universally renowned as one of the first Floral Establishments in the United Kingdom, patronised by the Nobility and the leading Gentry.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. F. Videon to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on MONDAY, March 13, at 1 for 2 o'Clock precisely, the valuable LEASES and GOODWILL of the old-established NURSERY GROUNDS, known as Clarendon Nursery, occupying the choicest position in the centre of the most aristocratic and *elite* of London Society, possessing 341 feet frontage, or thereabouts, to the Maida Vale and St. John's Wood Roads, London, N.W., and containing an area of about three-quarters of an acre of very Choice Land, with the following glass erections and other offices standing thereon:—An elegant modern Circular and Iron Roof Conservatory, communicating with Shop and Office, the extensive Range of Greenhouses and Forcing Pits, fitted up with modern appliances. There is likewise a convenient Twelve-roomed Detached Family Residence, excellent Stabling and Coach-houses. The whole is held under leases of the average term of forty years unexpired, at the exceedingly low ground rent of £42 per annum. Also the LEASE of the BRANCH NURSERY at WILLESDEN, with several newly-erected Greenhouses and other Buildings standing thereon.

Particulars of Sale may be had, when ready, of J. A. BERTRAM, Esq., 22, Chancery Lane, W.C.; and of the Auctioneers and Valuers, 93, Gracechurch Street, E.C., and Leytonstone, E.

Important Sale of about 200 Choice Double

CAMELLIAS, English grown and well set with bloom buds, 1 to 3 feet; fine AZALEA INDICA, ERICAS, ACACIAS, CYCLAMENS, &c. Also a choice assortment of 500 STANDARD, DWARF, and CLIMBING ROSES, SELECTED FRUIT TREES, HARDY AMERICAN PLANTS, CONIFERÆ, and EVERGREEN SHRUBS, Choice LILIUMS, ANEMONES, RANUNCULI &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, March 14, at half-past 12 o'Clock precisely.

On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Hendon, Middlesex, N.W.

Dissolution of the Firm of Messrs. J. & A. Wright.

IMPORTANT UNRESERVED SALE of THRIVING NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Mill Hill Nursery, Hendon, Middlesex, N.W., on TUESDAY and WEDNESDAY, March 14 and 15, at 11 for 12 o'Clock precisely each day, the whole of the beautifully grown NURSERY STOCK, comprising 5000 Aucubas, 1 to 2 feet; 2000 Laurustinus, 2 to 3 feet; 2000 fine Limes, 8 to 10 feet; 1000 Portugal Laurels, and thousands of other Shrubs, together with a considerable number of fine Fruit Trees.

May be viewed.

Edgware, Middlesex, W.

Dissolution of the Firm of Messrs. J. & A. Wright.

IMPORTANT UNRESERVED SALE of the valuable LEASE and GREENHOUSES, HORSES, and STOCK-IN-TRADE.

MESSRS. PROTHEROE AND MORRIS are instructed by the Trustees to SELL by AUCTION, on the Premises, the Stone Grove Nursery, Edgware, Middlesex, W., on FRIDAY, March 17, at 11 for 12 o'Clock precisely, firstly, the valuable LEASE and GOODWILL of the old-established BUSINESS, fourteen years unexpired from Midsummer, 1875; and immediately afterwards the whole of the well-grown NURSERY STOCK, comprising Variegated and Green Hollies, Rhododendrons, Aucubas, &c., the whole of the choice Greenhouse Plants, Six Greenhouses, a large quantity of Hot-water Piping, Boilers, a useful Brown Mare, a capital Dog Cart, and numerous other Effects.

May be viewed. Catalogues and Particulars of Sale may be had at the Nursery, and of the Auctioneers and Estate Agents, 98, Gracechurch Street, E.C.

Leatherhead.

SALE of Valuable NURSERY STOCK, in consequence of the expiration of Lease.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. D. Christie to SELL by AUCTION, on the Premises, The Nurseries, Leatherhead, on WEDNESDAY, March 22, at 12 for 1 o'Clock precisely, a large quantity of Valuable NURSERY STOCK, consisting of a considerable number of large and effective Coniferæ: also many thousands of smaller Evergreens, including 5000 English Yews, 4000 Common Laurels, 4000 Box, Laurustinus, Cupressus, Thujas, Irish Yews, Rhododendrons, Arbutus, &c.: 2000 Lilacs, a quantity of Deciduous Shrubs and large Ornamental Trees, Fruit Trees, &c.

May be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers.

Important Sale of Cattleya gigas and ODONTOGLOSSUM VEXILLARIUM.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, March 13, at half-past 12 o'Clock precisely, imported Plants of the rare and most lovely Odontoglossum vexillarium, Cattleya gigas, Uropedium Lindeni, just received by R.M.S.S. "Nile;" also splendid Established Plants, many of them in flower, of Phalænopsis amabilis, P. Schilleriana, P. roseus, P. Luddemanniana, P. grandiflora, P. leucorrhoda, Dendrobium Wardianum, D. crassinode, D. Falconeri, Cymbidiums, Vandas, &c.

The Cattleya gigas and Odontoglossum vexillarium are worthy of special attention, the plants of this grand Odontoglossum being by far the finest hitherto offered, and in the best possible condition, the leaves and young breaks being fresh and green.

On view the morning of Sale, and Catalogues had.

Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, without reserve, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, March 16, at half-past 12 o'Clock precisely, a small and select COLLECTION of ESTABLISHED ORCHIDS, the property of a Gentleman who has exhibited a few times and successfully.

On view the morning of Sale, and Catalogues had.

Greenhouse Plants.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on SATURDAY, March 18, at half-past 12 o'Clock precisely, a Collection of SPECIMEN, HALF SPECIMEN, also ORNAMENTAL FOLIAGE PLANTS suitable for Table and House Decoration, consisting of Camellias, Azaleas, Palms, Tree Ferns, and other Greenhouse Plants, including many that have been exhibited and taken prizes: the property of a private gentleman.

On view the morning of Sale, and Catalogues had.

Specimen Stove and Greenhouse Plants.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, March 22, at half-past 12 o'Clock precisely, the Valuable Collection of STOVE and GREENHOUSE PLANTS, HEATHS, AZALEAS, and EXHIBITION PLANTS, the property of Mr. Carr, of Byfleet, and sold in consequence of the death of Mr. Hinds. Amongst other fine specimens the Collection includes:—

Cocos Weddeliana
Livistonia rotundifolia
Pandanus Veitchi
Stevensonia grandifolia
Gleichenia speluncæ
,, rupestris
Platycerium grande
Adiantum farleyense
Maranta Makoyana
Erica tricolor Wilsoni
,, obbata
Genetyll's tulipifera
Azalea Criterion
Pitcharidia pacifica
Dæmonorops palembanicus
Croton Weismanni and undulata
Gleichenia Mendelii
,, semi-vestita
Davallia Mooreana
Adiantum gracillimum
Maranta Lindeni
Erica æmula
,, Antoni Turnbullii
Phœnocoma Barnesii
Azalea rubens
Chamærops humilis
&c., &c.

Also, TWO COVERED EXHIBITION VANS.

On view the morning of Sale, and Catalogues had.

Important Sale of Rare Plants,

From the Collection of the late S. RUCKER, Esq., of West Hill, Wandsworth.

MR. J. C. STEVENS begs to announce that he has received instructions to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and THURSDAY, April 5 and 27, at half-past 12 o'Clock precisely each day, the surplus plants from the Collection of the late S. Rucker, Esq., of West Hill, Wandsworth, comprising specimen AZALEAS and PALMS, a Collection of FERNS, including Trichomanes, Gleichenias, &c.; a very fine Collection of NERINES, including Fothergilla major, corruscans, flexuosa, many of them fifty bulbs in a pot; CROTONS, DRACENAS, and MISCELLANEOUS STOVE PLANTS, PITCHER PLANTS, a choice Collection of NEPENTHES, and many other rare and valuable plants.

On view the mornings of Sale, and Catalogues had.

Sale of the Collection of Orchids formed by the late S. RUCKER, Esq., of Wandsworth.

MR. J. C. STEVENS has received instructions from Messrs. James Veitch & Sons, of Chelsea, to offer for SALE on WEDNESDAY and THURSDAY, April 12 and 13, the Collection of ORCHIDS recently purchased by them from the Executors of the late S. Rucker, Esq. This collection comprises many fine and rare kinds. It was formed by Mr. Rucker during the last five years, and it is not too much to say that almost every plants was selected for its variety. The plants are healthy, vigorous, young-growing specimens, and well worthy the attention of all Orchid growers. Amongst others will be found the following:—

Oncidium Rogersii (true), the only plant at present saleable in England
Lælia anceps Dawsoni
Odontoglossum vexillarium (strong)
,, Roezlii (strong)
,, Alexandræ (several)
Masdevallia Wallisii (true)
,, tovarensis
,, Harryana
,, Lindeni
,, Veitchii
Dendrobium Wardianum
,, crassinode
,, aggregatum majus (splendid masses)
,, Jamesianum (very fine)
Phalænopsis grandiflora
,, amabilis
,, Schilleriana (a very fine lot of all the kinds)
Cattleya labiata (true autumn-flowering varieties)
,, Mendelii (splendid plants), &c.

On view the mornings of Sale, and Catalogues had.

Pine-apple Nursery, Edgware Road, W.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions from Mr. J. Weeks to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., almost without reserve, on THURSDAY, April 20, at half-past 12 o'Clock precisely, the Valuable PREMISES and GOODWILL of the PINE-APPLE NURSERY, Maida Vale, Edgware Road, W., together with Dwelling-house, Seed Shop, and Offices, and all the extensive ranges of Horticultural Buildings and Sheds.

Held:—As to part, for a term which will expire in 1909, at a Ground-rent of £45; and, as to the remainder, for a term which will expire in 1923, at a Ground-rent of £89. The Nursery has, within the last three or four years, been very greatly enlarged and improved, upwards of £10,000 having been expended in additions, improvements, and repairs; and it is considered in the Trade to be the most important Establishment of the kind in the World. It possesses an extensive connection both in the Nursery and Seed Trade, amongst the Nobility and Gentry and their Gardeners. Part of the purchase-money may remain on Mortgage.

Nurseries in the immediate neighbourhood of London are seldom valued by the acre; but this is an exception, as the Horticultural Buildings and Show-grounds cover about 2½ Acres, and form a most valuable property, and well adapted for a Skating Rink (permission for which can no doubt readily be obtained), as well as a Nursery Business.

For further particulars apply to Messrs. KEARSEY, SON, AND HAWES, 33, Old Jewry, London, E.C.; and Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

The Pine-apple Nursery, Maida Vale, W.

PROPOSED PARTNERSHIP.—The Advertiser, a Gentleman in the Trade, who believes that the above Nursery possesses great facilities for doing an extensive First-class Business, would be happy to meet with a thorough practical Horticulturist, with Capital at command, to join him on equal terms in the purchase of the Business, and for carrying it on in Partnership.—For an introduction, apply to Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

Turnham Green, W.

STOCK of a HORTICULTURAL BUILDER, Without Reserve.—Span-roof and Lean-to Greenhouses, Conservatory, Thirty Frames and Lights, Box Barrows, Pit Lights, 1½-horse power Steam Engine, Useful Cob, Two Vans, Spring Cart, and Various Effects.

MR. JAMES H. GREEN will SELL by AUCTION, on the Premises, adjoining the "Robin Hood," on WEDNESDAY, March 15, at 12 for 1 o'Clock, the entire remaining stock of GREENHOUSES, CONSERVATORY, LIGHTS and FRAMES, HORSE, VAN, and GENERAL EFFECTS. View two days prior.

Catalogues on the Premises, and of the Auctioneers, 72, King Street, Hammersmith, W.

Castle Malgwyn, near Cardigan.

IMPORTANT SALE of a very valuable Collection of STOVE and GREENHOUSE PLANTS.

MR. THOMAS GRIFFITHS has been favoured with instructions to SELL by AUCTION, at the above place, on THURSDAY, March 23, the whole of the valuable Collection of Specimen CAMELLIAS, ORANGE TREES, HEATHS, FERNS, and other rare plants, some of which cannot be surpassed, and all perfectly free from insects.

Catalogues will be issued immediately, and may be had on application to the Auctioneer.

Cardigan, March 8.

Preliminary.—Sale of a very Valuable Collection of

Specimen and Half-specimen STOVE and GREENHOUSE PLANTS, the whole of which have been exhibited.

ARTINGSTALL AND HIND (the surviving Partners of the late Firm of CAPES, DUNN & Co.) beg to announce that they have received instructions from Messrs. E. Cole & Sons to SELL by AUCTION, about the MIDDLE of APRIL, at their Nurseries, Withington, near Manchester, the valuable Collection of EXHIBITION PLANTS.

Catalogues will be prepared in due course, and further information may be had by applying to the Auctioneers, 5, Princess Street, Manchester.

POTATOS for PLANTING.—The leading Early and Late Scotch Varieties; also some of the best American kinds, pure, selected, and grown for seed. Prices per ton or per bag on application.
SMITH AND SIMONS, 36, Howard Street, Glasgow.

To the Trade.

JACS. JURRISSEN AND SON beg to call particular attention to their large stock of FRUIT TREES, Dwarf-trained PEACHES and APRICOTS, Standard ORNAMENTAL TREES and SHRUBS, HOLLIES, ROSES, CONIFERÆ, and FOREST TREES.
Wholesale TRADE LIST now ready, free on application.
Nurseries, Naarden, near Amsterdam, Holland.

Johnstone's St. Martin's Rhubarb.

EARLIEST and BEST in CULTIVATION for Open Ground; has a splendid colour, and excellent for Forcing. Strong roots, 9s. per dozen. Trade price on application.
W. P. LAIRD AND SINCLAIR, Nurserymen, Dundee, N.B.

Campanula Smithii.

W. SMITH begs to inform those interested in the Culture of Hardy Flowers that he intends to send out the above-mentioned beautiful Campanula in April next. Strong Flowering Plants, 5s. each. Price to the trade on application. Wilmot Road, Leyton, Essex.

Lilium auratum.—Orchids.

W. F. BOFF offers magnificent Bulbs of LILIUM AURATUM, at 6s., 9s., and 12s. per dozen; one of each size post-free for 36 stamps. W. F. B. also offers ORCHIDS, good sorts, nice plants, at 21s., 30s., and 42s. per dozen.

203, Upper Street, Islington, N.

POLYANTHUS, choice mixed, 1s. 6d. per packet; also extra choice mixed (from fine laced flowers), 2s. 6d. per packet, post free. Flower Seeds of every description of the choicest quality.
JAMES DICKSON AND SONS, Seed Growers, 108, Eastgate Street, Chester.

Mangel and Swede.

JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself.
Bardney Manor, Lincoln.

Fruiting and Planting Vines.

THE COWAN PATENTS COMPANY (late Meredith) have still on hand a good selection of the above. Catalogues and prices on application. They can also offer good Fruiting and Succession PINES.
The Vineyard, Garston, near Liverpool.

Notice.—Seeds, Seeds.

WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds.
CATALOGUES now ready, which contain every requisite, at fair prices, post-free on application.
Highgate, London, N.

Vines, Vines, Vines.

B. S. WILLIAMS begs to announce that his stock of VINES is now in fine condition, and ready for sending out. It comprises all the leading kinds, strong Canes of Pearson's Golden Queen.
For prices and description see BULB CATALOGUE.
Victoria and Paradise Nurseries, Upper Holloway, London, N.

EAST LOTHIAN INTERMEDIATE STOCKS.—Carefully saved seed of the above magnificent Stocks, in separate packets of White, Purple, Scarlet, and White Wall-leaved, at 1s., 2s. 6d., and 5s. each colour. The Trade supplied.
THOMAS METHVEN AND SONS, Edinburgh.

Cupressus Lawsoniana.

R. AND G. NEAL have the above to offer, 12 to 18 inches high, twice transplanted, bushy and well-rooted plants, at 20s. per 1000, delivered on rail in London.
The Nurseries, Wandsworth Common, S.W.

GIANT ASPARAGUS PLANTS, the best that money can procure, all certain to grow, 2s. 6d. per 100. This delicious vegetable does not require half the expense usually incurred in planting it. See RICHARD SMITH'S SEED LIST for 1876.
Extra strong SEAKALE, 2s. per dozen.
RICHARD SMITH, Nurseryman, Worcester.

SPECIAL OFFER of SEEDLING RHODODENDRONS, 2-yr. and 3-yr., £7 10s. and £12 10s. per 100,000; 4-yr. and 5 yr., 7s. 6d. and 10s. per 1000.
JOSEPH SMITH, Jun., Moor Edge Nurseries, Tansley, near Matlock, Derbyshire.

NEW AND GENUINE GARDEN AND AGRICULTURAL SEEDS. Special prices and advantageous offers of above on application. Urgent orders, or orders by telegraph will be promptly attended to.
ALFRED LEGERTON, Seed Merchant, 5, Aldgate, London, E.

Wright's Prize Celeries.—Sow Now.

WRIGHT'S Grove Red, Grove White, and Giant White CELERIES, per packet, 1s. Orders solicited, enclosing value in stamps or Post-office Order.
WILLIAM WRIGHT, Seedsman, Retford, Notts.

Hardy Primrose Seed.

L. T. DAVIS offers to the Trade a quantity of the above, from selected varieties of a splendid strain, chiefly high-coloured sorts. Price per ounce or pound on application.
Ogle's Grove Nursery, Hillsborough, Co. Down.

PORTUGAL LAURELS, 3 to 4 feet, 30s. per 100; Common do., 4 to 6 feet, 30s.; THUJA GIGANTEA, 3 to 4 feet, 60s.; BIOTA COMPACTA, 4 to 5 feet, 50s.; GREEN HOLLY, 1 to 1½ foot, 20s. per 100.
J. JACKSON, Nursery, Kidderminster.

LARCH, 1½ to 2½ feet, 20s.; SPRUCE, 1½ foot, 12s.; SCOTCH, 1½ foot, 12s.; OAK, 3 to 4 feet, 15s. per 1000; STANDARD ROSES, fine, 6os. per 100.
J. JACKSON, Nursery, Kidderminster.

BOX EDGING.—10,000 yards, Dwarf and fine, for present use; also, 10,000 yards larger stuff for Nursery Planting. Cheap.—Sample and price from
J. B. YOUNG, Landscape Gardener, Bridge of Allan.

Important to Farmers.

SAMUEL FINNEY AND CO., SEED MERCHANTS and IMPORTERS, Newcastle-upon-Tyne beg to inform Agriculturists and others that their FARM SEED LIST for 1876 is now ready, and will be forwarded post-free upon application.
Established more than a century.

EAST LOTHIAN INTERMEDIATE STOCKS.—Carefully saved Seed of the above magnificent Stocks, in separate packets of White, Purple, Scarlet, and White Wall-leaved, at 1s., 2s. 6d., and 5s. each colour.
The Trade supplied.
THOMAS METHVEN AND SONS, Edinburgh.

GERANIUMS, strong, from stores, surplus stock:—Bijou, Vesuvius, Perilla, Waltham Seedling, Mrs. Upton, Amy Hogg, Rosamond, Crystal Palace Gem, 9s. per 100, cash.
W. BROADRIDGE, Wellesbourne, Warwick.

To the Seed Trade.

H. AND F. SHARPE'S special SPRING CATALOGUE of home-grown MANGEL WURZEL, TURNIP, and other AGRICULTURAL and GARDEN SEEDS, is now ready, and will be forwarded on application.
Seed Growing Establishment, Wisbech.

Hardy Perennials Illustrated.

THOS. S. WARE'S CATALOGUE of the above for 1876, including New, Rare, and Choice Alpines, Herbaceous Plants, Aquatics, Bog Plants, and a few Bulbs, is now ready, free on application.
Hale Farm Nurseries, Tottenham, London.

Grass Seeds.

BOLTON AND CO. have to offer fine new GRASS SEEDS for Permanent Pasture, and shall be happy to forward prices to buyers. Very liberal terms to large purchasers.
BOLTON AND CO., Seed Merchants, Wood Green, London, N.

Hardy Florist Flowers.

THOS. S. WARE'S 1876 SPRING CATALOGUE of the above, including Carnations, Hollyhocks, Pansies, Phloxes, Peonies, and others, is now ready, and may be had post-free on application.
Hale Farm Nurseries, Tottenham, London.

Mangel Wurzel

BOLTON AND CO. beg to offer their fine stock of YELLOW GLOBE MANGEL WURZEL SEED.
Their large Champion Yellow Globe produces an immense weight per acre, and the Pedigree Mangel is the finest one grown, small top, fine clean skin, and single tap-root. Both of these superior Mangels give great satisfaction.
Moderate prices, on application.
BOLTON AND CO., Seed Merchants, Wood Green, London, N.

CALCEOLARIA AUREA FLORIBUNDA and GOLDEN GEM, autumn-struck, clean, healthy, and vigorous, 5s. per 100, 40s. per 1000, package free. "Cash," Post-office Order on Chester.
FIELD BROTHERS, Tarvin Road Nursery, Chester.

Alternantheras Centaureas.

WILLIAM MILES offers good healthy Plants from stores of ALTERNANTHERA AMŒNA and A. AMŒNA SPECTABILIS, at 8s. per 100, 70s. per 1000; A. MAGNIFICA, A. PARONYCHIOIDES, and A. AMABILIS LATIFOLIA, at 6s. per 100, 50s. per 1000.
CENTAUREA CANDIDISSIMA, strong stuff, in small 60-size pots, 20s. per 100, £8 per 1000, package included. Terms cash.—West Brighton Nurseries, Brighton, Sussex.

Anti-Fever Plant.

HELIANTHUS GLOBOSUS FISTULOSUS.—The most lovely out-door Flower, as exhibited by me at South Kensington.
No Fever in the Home,
No Disease with Cattle,
No Ailment with Fowls,
where this beautiful Double Sunflower is grown. It flowers freely, and produces seed in abundance.
Packets post-free for 18 stamps.
RANSLEY TANTON, Seed Merchant, Borough End, London Bridge, S.E.

NOW READY.

Price 6d., post-free (gratis to Purchasers),

The ILLUSTRATED CATALOGUE of

BEAUTIFUL GARDENS.
No Bedding Plants required.
12 packets choicest Annuals
6 packets choicest Bedding Plants
6 packets choicest Fine-foliaged and Subtropical Plants.
6 packets choicest Florist Flowers.
6 packets choicest Perennials.
6 packets choicest Greenhouse Plants.
Each packet named and coloured. Post-free for Post-office Order for 6s., payable High Street, Borough.
RANSLEY TANTON, Seed Merchant, Borough End, London Bridge, S.E.

For the Farm or Garden

CABBAGE PLANTS, superior Bedfordshire-grown. Early Enfield, York, and Nonpareil, at 7s. per 1000; Robinson's Champion Drumheads, at 4s. per 1000; Red Dutch Pickling, at 5s. per 1000 (supplied in any quantities). Early Longpod BEANS, at 8s. 6d. per bushel; common Windsors, at 10s. per bushel. Forcing and Planting ASPARAGUS PLANTS, at 2s. 6d. to 7s. 6d. per 100. Double Scarlet DAISIES, at 2s. 6d. per 100; splendid large Crown Daisies, 5s. per 100. Splendid new flowering PYRETHRUMS, at 4s. per dozen. Beautiful Blue DELPHINIUMS, at 4s. per dozen. Terms, cash with orders. SEED POTATOS, and all other Seeds of best quality, at lowest prices.
CATALOGUES, &c., on application to
FREDERICK GEE, Seed Grower, &c., Biggleswade, Beds.

MRS. PEARSON GRAPE.—I intend to send out this fine Yellow Grape this season. It received a First-class Certificate in 1874, and also the prize offered by Mr. Smee for the best new fruit of any kind exhibited during that year. It will be found quite equal in constitution to the "Golden Queen," it is quite as large in bunch and berry as the true Black Alicante, from which it was raised, and will keep quite as long and weigh quite as heavily, and, having a rich Frontignan flavour, will prove a fine profitable Market Grape like its parent, whilst much superior to it in quality. Strong Fruiting Canes, 42s. and 63s. each; good Planting Canes, 21s. each.
J. R. PEARSON, Chilwell Nurseries, near Nottingham.

CUCUMBER PLANTS—"TELEGRAPH," strong plants, now ready. Price, including box and packing, 12s. per dozen.
A. WATKINS, Nursery, Bishop Stortford.

The Best Lawn Mixture.

JAMES DICKSON & SONS' FINEST LAWN MIXTURE, for Forming New or Renovating Old Lawns, is VERY SUPERIOR to all others.
108, EASTGATE STREET, CHESTER.

RHODODENDRONS.

2-yr. seedlings.	4 to 8 inches, transplanted.
3 yr. seedlings.	6 to 10 inches, transplanted.
	8 to 12 inches, transplanted.

For Prices and Samples apply to
HENRY FARNSWORTH, Matlock Bank, Derbyshire.

ELACK, The Nurseries, Wellingborough, Northamptonshire, offers fine well-rooted trees as under:—FIR, Spruce, 2 feet and 3 to 3½ feet, bushy; do. Scotch, 2 to 3 feet and 3 to 4 feet; PINE, Austrian, 2 feet and 3 to 4 feet; YEWS, English, 2 feet and 3 to 3½ feet; LIMES, stout, straight stems, 8 to 10 feet, good heads; POPLARS, 10 to 14 feet. Prices, low, on application.

Cabbage Plants.

H. J. HARDY begs to offer a quantity of strong autumn-sown plants, all true.
ENFIELD MARKET, 3s. 6d. per 1000.
ROBINSON'S DRUMHEAD, 3s. per 1000.
Packages and Carriage Free for 5000 upwards to any Railway Station in England. Cash must accompany all orders from unknown correspondents. Post-office Orders made payable at Bures. Apply to
H. J. HARDY, Stour Valley Seed Grounds, Bures, Essex.

AUSTIN AND MCASLAN, Glasgow, offer the undernoted POTATOS, &c.
DALMAHOY EARLY, £7 10s. per ton.
GOODRICH EARLY, £7 per ton.
PATERSON'S VICTORIA, £7 per ton.
RINTOUL'S EARLY DON, £8 per ton.
ASHLEAF KIDNEY, £10 per ton.

EXCELLENT GARDEN SEEDS.
CHOICE FLOWER SEEDS.
SUPERIOR FARM SEEDS.
See Illustrated and Priced LIST, to be had free on application. The superiority of these Seeds is proved by the numerous testimonies constantly received, and those who wish for a superior article should order at once of
HARRISON AND SONS, Seed Growers, Leicester.

AUSTRIAN PINE, twice transplanted, extra fine, 2 to 2½ feet, 8s. per 100; 4 to 5 feet, four times transplanted, 30s. per 100. Common LAURELS, very fine, 3 to 4 feet, 18s. per 100; Portugal do., fine bushy plants, with splendid roots, 2½ to 3 feet, 35s. per 100, 3 to 3½ feet, 45s. per 100. LIMES, 6 to 7 feet, 25s. per 100; 7 to 9 feet, 7s. per dozen. HORSE CHESTNUTS, 6 to 8 feet, 15s. per 100.
J. J. MARRIOTT, Highfield Nurseries, Matlock.

PEACHES and NECTARINES, Dwarf trained, in pots for late planting. These trees being in pots may be safely planted to the end of May. 5s. each.

PEACHES.

Albatross,	Early Louise,
Alexandra Noblesse,	Early Rivers,
Condor,	Grosse Mignonne,
Dagmar,	Princess of Wales,
Dr. Hogg,	Rivers' Early York,
Early Leopold,	Stanwick Early York.

NECTARINES

Byron,	Dante,	Stanwick Elruge.

THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

Special Offer.

G. FARNSWORTH has to offer large quantities of the following, at per 1000; also other NURSERY STOCK, at low prices, which may be had on application at the Nurseries, Matlock:—ASH, Mountain, 3 to 5 feet, 17s. 6d. CHESTNUT, Horse, 6 to 8 feet, 80s. FIR, Austrian, 20 to 30 inches, 90s. HOLLY, Common, 12 to 18 inches, 180s. LARCH, 12 to 20 inches, 14s.; 1½ to 2½ feet, 25s. LIME LAYERS, 2-yr., Red-twigged, 2 to 4 feet, 50s. PRIVET, 1½ to 2½ feet, 12s.; 2 to 3½ feet, 15s.; 3 to 4½ feet, 17s. 6d. RHODODENDRON, Hybrid and Pontica mixed, 3 yr. seedling, fine, 5s.; extra, transplanted, 6 to 10 inches, 60s.; 8 to 12 inches, 80s.; 12 to 18 inches, bushy, 14os. LAUREL, Common, bushy, 1½ to 2½ feet, 80s. LIMES, transplanted, Red-twigged, 4½ to 6½ feet, 180s.

Notice to Trade Application by Post

MR. POSTANS' NEW ZONAL GERANIUMS of 1875.
Strong plants, the fourteen for 10s. 6d.; do. cuttings, 6s. 6d.; the Silver-edged White-flowering and Silver-edged Fancy flowering varieties, the set of eight for 12s.; cuttings, 1s. each, 6d. extra free by post.
GOLEUS DUCHESS of EDINBURGH, well coloured plants, post-free, 6s. 6d. per dozen.
HERBACEOUS PHLOX, good stuff, 4s. 6d. per dozen cuttings, 1s. 3d. per dozenby post.
CHARLES BURLEY, Nurseries, Brentwood.

SURPLUS STOCK of AMERICAN and ENGLISH POTATOS.
Alpha, per lb., 1s. 4d.; per 14 lb., 16s. Snowflake, per lb., 4½d., per 14 lb., 4s. 6d.; per cwt., 30s.; per sack, 54s. Eureka, per lb., 4d.; per 14 lb., 4s.; per cwt., 25s., per sack, 40s.

Hundredfold Flukes, Myatt's Prolific, Lapstone Kidneys, Early Rose, Bresee's Prolific, Climax, Red-skinned Flourball, per cwt., 9s.; per sack, 16s.

Early Gem, Extra Early Vermont, Brownell's Beauty, Nonsuch, Compton's Surprise, per cwt., 11s.; per sack, 20s.

Early Fortyfolds, Paterson's Victoria, seed size, per cwt., 10s.; per sack, 12s.

Acme, Late Rose, Mona's Pride, Ashtops, per cwt., 12s.; per sack, 22s. Sacks, 1s. 4d. each.
Remittance to accompany all orders. Special quotations for large quantities. The Trade supplied.
CHRISTMAS QUINCEY, Potato Merchant and Importer, Peterborough.

Extraordinarily Cheap Forest Trees, Fruit Trees,
And QUICKWOOD

WITTY AND SON, The Nurseries, Cottingham, Hull, offer as under :—
LARCH, 18 inches to 2½ feet, 20s. per 1000.
APPLES, strong Maidens, 20s. per 100.
PEARS, strong Maidens, 20s. per 100.
PLUMS, strong Maidens, 25s. per 100.
QUICKWOOD, strong, 12s. 6d. per 1000.
ASPARAGUS, 3-yr., fine, 12s. 6d. per 1000.
The above are all first-class stuff, and must be sold on account of the ground having to be cleared.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham, will be glad to send their CATALOGUE for this season on application. The stock of the undernamed, in best sorts and good plants, is very large and fine :—

	Per doz. s. d.	P. 100. £ s.
Antirrhinums	3 6 ..	1 5
Ageratums	2 0 ..	0 12
Chrysanthemums	3 0 ..	1 0
Carnations and Picotees, single plants	6 0 ..	2 5
,, pairs	11 0 ..	3 15
Clematis	15 0 ..	5 0
Calceolarias	1 0 ..	0 8
Coleus	3 0 ..	1 1
Carpet Bedding plants	1 6 ..	0 10
Daisies, various colours	1 0 ..	0 5
Fuchsias	3 0 ..	1 0
Geraniums, tricolor	3 6 ..	1 5
,, bicolor	3 6 ..	1 5
,, Zonal and Nosegay in sorts for pots	3 0 ..	1 1
,, autumn struck for bedding, out of pots	2 0 ..	0 12
Heliotropes	2 6 ..	0 18
Iris germanica	3 0 ..	1
Lantanas	3 0	
Lobelias	1 0 ..	0 6
Succulents	6 0	
Greenhouse plants 12s. to	.. 18 0	
Stove plants, 12s. to	.. 18 0	
Tree Carnations	12 0	

	Per doz s. d.	P. 100. £ s.
Pelargoniums, 6s. to	9 0	
Herbaceous plants	3 0 ..	1 0
Pelargoniums: Queen Victoria and Captain Raies	18 0	
Pansies, show	3 6 ..	1 5
,, bedding	2 0 ..	0 15
Pinks	3 6 ..	1 5
Paeonies	12 0 ..	4 10
Pentstemons	3 6 ..	1 5
Pyrethrums	10 0	
Salvias	3 0 ..	1 1
Sedums	3 0 ..	1 1
Saxifrages	3 0 ..	1 1
Violas	1 6 ..	0 10
Violets	2 6 ..	0 18
Roses, in pots, H P's	12 0 ..	4 10
Hardy Climbing plants, in pots	12 0	
Dactylis elegantissima	1 0 ..	4 6
Grape Vines 30s. to	60 0	
Begonias	4 0	
Achimenes	2 6	
Dracænas terminalis and Cooperi	18 0	
Caladiums	15 0	
Epiphyllums	12 0	

Trade prices on application.

GLOXINIA CRASSIFOLIA GRANDIFLORA.

Magnificent strain, quite distinct. The leaves, which are very broad and fleshy, recurve so as to almost cover the pot; the flowers are much larger than in the old sorts, and of very brilliant shades of colour, and fine form. By sowing now on a gentle hotbed they may be had in bloom in autumn, and seedling plants always yield much the finest blooms. Erecta and horizontalis, separate or mixed.

Per packet, 1s. and 2s. 6d., stamps or Post-office Order.
Seed CATALOGUE, sent free by post.
JAMES TYNAN, 68, Great George Street, Liverpool.

RHODODENDRONS.

FINE NAMED LEADING KINDS, 1½ to 3½ feet, from £7 10s. to £10 10s. per 100.
HYBRID SEEDLINGS, leading kinds, 1½ to 3½ feet, from 50s. to 75s. per 100.
ANDROMEDA FLORIBUNDA, 1 to 2 feet, from 50s. to 60s. per 100.
KALMIA LATIFOLIA, 1 to 2 feet, from 50s. to 60s. per 100.
AZALEA PONTICA, 1 to 2 feet, from 60s. to 75s. per 100.
All the above are very fine bushy, well grown plants, and are offered very cheap to effect a clearance.

CHARLES NOBLE, BAGSHOT.

FIRST PRIZE ROSES,

FROM
CRANSTON'S NURSERIES, HEREFORD.

Try our One Guinea, Two Guinea, and Three Guinea Collections.

ONE GUINEA COLLECTION contains Thirty Selected First-class Show Roses.

TWO GUINEA COLLECTION contains Sixty Selected, Distinct, and all First-class Show Roses.

THREE GUINEA COLLECTION contains One Hundred of the Finest Roses, New or Old, in cultivation, Selected from upwards of 600 Varieties.

Either of the above Collections will be carefully packed and forwarded, on receipt of Cheque or Post-office Order payable to
CRANSTON & MAYOS, HEREFORD.

N.B. Upwards of Fifty First Prizes, including the 25 Guinea Silver Challenge, open to all England, were awarded to us in 1875.

Vegetable & Flower Seeds
Seed Potatos, Garden Tools &c.
Superior quality, Carriage free
Descriptive Priced list post free;
James Dickson & Sons
"Newton" Nurseries and
108, Eastgate Street;
Chester.

RICHARD SMITH'S SEED LIST

CONTAINS
THE BEST KINDS
OF
VEGETABLE
AND
FLOWER SEEDS,
and forwarded Free on application.

SMITH'S No. 1 COLLECTION	£3 3 0
SMITH'S No. 2 COLLECTION	2 2 0
SMITH'S No. 3 COLLECTION	1 11 6
SMITH'S No. 4 COLLECTION	1 1 0
SMITH'S No. 5 COLLECTION	0 15 0
SMITH'S No. 6 COLLECTION	0 12 6
EXTRA LARGE COLLECTIONS from	£5 5s. to 10 10 0

The above are liberally and judiciously selected, and forwarded carriage free, excepting Nos. 5 and 6.

	Per packet.—s. d.
CUCUMBER, Smith's Fine Long Frame	1 0
,, Monro's Duke of Edinburgh	1 6
CAULIFLOWER, Veitch's Autumn Giant	1 6
CELERY, Sandringham Dwarf White	1 0
CABBAGE LETTUCE, Worcester Champion	1 0
COS LETTUCE, Worcester White	1 0
MELON, Eastnor Castle Green-flesh	1 6
,, Queen Emma	1 0
ONION, The Banbury	1 0
CYCLAMEN PERSICUM, splendid large flowering	1 0
POLYANTHUS, choice gold-laced	1 0
ASTER, Truffaut's French, 12 splendid colours	1 0
,, Victoria, 10 splendid colours	1 0
,, Betteridge's Globe Quilled, 12 splendid colours	1 0
GERMAN STOCK, large flowering, 12 splendid colours	1 0
PHLOX DRUMMONDII, 12 colours	1 0
PRIMULA, finest fringed	1s. 6d. and 2 6
CINERARIA, saved from finest flowers	1s. 6d. and 2 6
CALCEOLARIA, finest rich spotted	1s. 6d. and 2 6
CENTAUREA CANDIDISSIMA	1 0
PYRETHRUM, Golden Feather	0 6
ZINNIA, double, 8 colours mixed	0 6

The above Free by Post.
RICHARD SMITH, Seed Merchant, Worcester.

THE KNAP HILL CYPRESS,

Cupressus Lawsoniana erecta viridis.

ANTHONY WATERER

Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices :—

3 feet high, 2½ feet in circumference, 30s. per doz.
4 feet high, 3 to 4 feet do., 42s. to 60s. per doz.
5 feet high, 4, 5 and 6 ft. do., 10s. 6d., 15s. to 21s. each.
6 and 7 feet high, 6 to 7 and 8 ft. do., 21s. to 31s. 6d. each.

No cuttings have been taken from the plants here referred to, which are simply perfect in growth and splendidly rooted.

KNAP HILL NURSERY, WOKING, SURREY.

JOHN CATTELL

BEGS TO ANNOUNCE THAT HIS

ILLUSTRATED CATALOGUE

OF

KITCHEN GARDEN AND FLOWER SEEDS,

Including a Choice Selection of the latest Novelties for 1876,

Is now ready, and will be forwarded gratis and post-free on application.

NURSERY and SEED ESTABLISHMENT,
WESTERHAM, KENT.

FRANCIS & ARTHUR DICKSON & SONS.

106 Eastgate St. & The "Upton" Nurseries **CHESTER.**

Illustrated Catalogue of New & Select Farm Seeds,

Post free on Application.

Quality unsurpassed.

CERASUS LAURO-CERASUS CAMELLIÆFOLIA (the Camellia-leaved Laurel).—This extraordinary and elegant Laurel was raised by Mr. Wood, of Woodbridge, in Suffolk, on whose behalf we are now offering it for the first time to the public. The leaves are light green, like the common Laurel, but differ from it in shape in being elegantly curled, like a Camellia leaf, or more closely resembling in form the beautiful Croton volutum.

The effect of the plant, grown as a pyramid and well pruned, is peculiarly striking, and if planted close as an edging plant, and pinched well back, it produces a very neat and pleasing appearance.

We propose to distribute this well-known variety at the following low prices, being desirous of seeing it largely used, as it deserves to be, for the purposes above-mentioned :—Per plant, 5s. ; per dozen, 42s. Special offer to the Trade.

J. AND C. LEE, Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

JAMES SMITH, Darley Dale Nurseries, near Matlock, offers the following :—

10,000 CUPRESSUS LAWSONIANA, 15 to 18 inches, 35. per dozen, 18s. per 100 ; 2 to 3 feet, 5s. per dozen, 30s. per 100 ; 2½ to 3½ feet, 6s. per dozen, 40s. per 100 ; 3 to 4 feet, 9s. per dozen, 65s. per 100, also larger plants.
5,000 CRYPTOMERIA ELEGANS, a fine Conifer from Japan, perfectly hardy—15 to 18 inches, 8s. per dozen ; 1½ to 2 feet, 10s. per dozen ; 2 to 3 feet, 15s. per dozen ; 3 to 4 feet, 22s. per dozen. Also CRYPTOMERIA JAPONICA and LOBBII, of various sizes
10,000 IRISH IVIES, good plants, 3s. per dozen, 10s. per 100.
10,000 PICEA NOBILIS, in perfect health, 1½ to 2 feet, 8s. per dozen, 60s. per 100 ; 2 to 2½ feet, 22s. per dozen ; 3 to 3½ feet, 60s. per dozen.
5,000 RETINOSPORAS, fine plants, of various kinds.
100,000 FLOWERING SHRUBS, of various kinds.
10,000,000 RHODODENDRONS. See Catalogue.
60,000 HARDY HEATHS.
20,000 KALMIAS, various.
10,000 LEDUMS, various.
10,000 ANDROMEDAS, various.
30,000 GAULTHERIA SHALLON.
10,000 BOX, 1½ to 2 feet.
20,000 PRIVET, Evergreen, 2 to 3 feet.
20,000 PINUS CEMBRA, fine plants, of various sizes.
10,000 ARBOR-VITÆ, American, of various sizes, an excellent plant for Hedges ; also LOBBII and others.
10,000 HYPERICUM CALYCINUM.
CATALOGUES free by post.

HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,
KNAP HILL NURSERY, WOKING, SURREY.

CRANSTON'S NURSERIES

(ESTABLISHED 1785).

Special Offer to the Trade.

FRUIT TREES, extra strong, dwarf-trained, with from five to ten shoots.
PLUMS, Victoria and other leading kinds.
APPLES, ORANGE (Blenheim), &c.
PEARS, Williams' Bon Chretien, Louise Bonne, &c.
CHERRIES, Morello, Duke, Bigarreau, &c.
PEACHES and **NECTARINES.**
A quantity of fine Maiden Morello.

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CRANSTON AND MAYOS, HEREFORD.

THE
NEW PLANT and BULB COMPANY

BEG TO CALL ATTENTION TO THEIR

SPECIAL LIST,

Just Published, containing

New Flowering Shrubs, New Fruits, New Yuccas, [lis, Sweet-scented Amaryl-
New Ferns, Six New Lilies, Seeds of New Plants, Lilium auratum, &c.

All at extremely low prices. Post free on application.

LION WALK, COLCHESTER.

VINES.—A superior lot of fine CANES of all the leading sorts for Planting or Fruiting; will carry several fine bunches this year; 5s. each. L. W.'s system of packing saves half the cost of carriage.
LEWIS WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

To the Trade.

SEAKALE, for planting, very fine, 30s. per 1000. 100,000 COMMON LAURELS of all sizes, from 1 foot to 5 feet, price on application.
WM. WOOD AND SON, Woodlands Nurseries, Maresfield, Uckfield, Sussex.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000; and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.
Wonersh Nursery, Guildford, Surrey.

A. M. C. JONGKINDT CONINCK'S MAIDEN FRUIT TREES are extra strong, and all fit for Cordons. The greatest care has been taken to have the sorts true to name.
A great quantity of ROSES can be had very cheap.
WANTED, AZALEA PONTICA, fit for grafting this autumn. Send priced samples by post.
Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

ROBERT NEAL, JUN., and GEORGE NEAL, NURSERYMEN, Wandsworth Common, S.W., beg respectfully to call the attention of Gentlemen and Others who are planting this Spring to their large and varied stock of HARDY SHRUBS, FRUIT, FOREST, and ORNAMENTAL TREES, &c., which are now in fine condition for transplanting. An early inspection invited.
CATALOGUES may be had on application.

A BARGAIN is offered in a lot of very extra strong BLACK HAMBURGH VINES, which must, on account of alterations, be moved out of a border in which they were planted to be fruited this year. They have never borne a berry, and would ripen 20 lb. to 30 lb of fruit well. Strong Canes, with splendid healthy roots, 10s. 6d. each.
L. WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

Centaurea candidissima, or Ragusina.
WHOLESALE PRICE.

WOOD AND INGRAM offer fine summer sown plants of the above, thoroughly established in thumb pots, at 20s. per 100; package, 3s. 6d. per 100, or 2s. for 50, not less than which will be sold at the price
The Nurseries, Huntingdon.

SNOWFLAKE POTATO—Having grown and imported largely of this splendid new variety, we can offer FINE ENGLISH-GROWN SEED, price 6d. per lb.; 6s. per peck of 14 lb.; 21s. per bushel of 56 lb. Much cheaper by the sack or ton.
FINE IMPORTED TUBERS, same price. Orders of 21s. and upwards carriage paid.
P. M'Kinlay, Esq., Beckenham, a well-known authority, writing of this Potato in the *Gardeners' Magazine*, Jan. 15 last, says:—"My experience with American varieties has been somewhat extensive, and I find that they generally improve as they become acclimatised. . . . I have no doubt Snowflake will improve in quality, and will become one of the best in cultivation."
DANIELS BROTHERS, Seed Growers, Norwich.

Ex. Ex. Choice Prize Flower Seeds.
Each 1s. per packet, post-free.

JOHN SCOTT, The Seed Stores, Yeovil, has to offer:—ASTER, French Perfection, 18 vars., do. Dwarf Bouquet, 8 vars.; STOCKS, Giant, Dwarf Ten-Weeks; HOLLYHOCK, 8 vars.; PETUNIA, 12 vars.; PHLOX DRUMMONDII, 12 vars.; WALLFLOWER, double; ZINNIA, double; CALCEOLARIA, dwarf, 20 vars.; CINERARIA; PRIMULA SINENSIS, 8 vars.; POLYANTHUS; DOUBLE SWEET WILLIAM; DOUBLE CONVOLVULUS MINOR.
The above are not to be surpassed.

CHOICE SEEDS, &c.—
CUCUMBER, Beauty of St. Albans, the best of the Telegraph section, 1s. 6d. per packet.
" Telegraph, true stock, 1s. per packet.
" Duke of Edinburgh (Daniels), 1s. per packet.
SOLANUM CAPSICASTRUM, hybrids, from plants selected from the three best stocks in Covent Garden, 6d. and 1s. per packet.
LOBELIA PUMILA MAGNIFICA, 1s. per packet.
CELOSIA PYRAMIDALIS, saved from Mr. R. S. Yates' fine strain, 6d. and 1s. per packet.
LOBELIA PUMILA MAGNIFICA, seedling plants, 5s. per 100; plants from cuttings, 12s. 6d. per 100.
All orders prepaid.
J. BESTER, White Hart Lane, Tottenham, N.

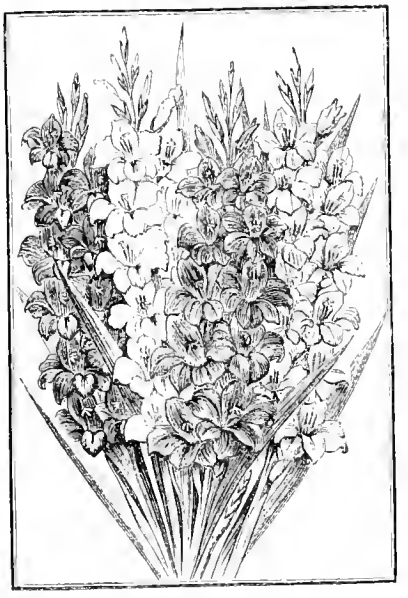
DAVID LLOYD AND CO. (LIMITED)
CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.
Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following:—
J. T. RUBERY, 88, Rumford Place, Liverpool.
SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
R. AND J. TAYLOR, 17, Vachel Road, Reading.
AGENTS WANTED.

JOSEPH SMITH, SEN., Tansley and Scotland Nurseries, near Matlock, Derbyshire, has for Sale:—
RHODODENDRON PONTICUM, 4-yr. old seedlings, not grown on bog, but on heath soil, with fine roots; stiff healthy plants, 3 to 4 inches high, 5s. per 1000. Also Hybrid Catawbiense, named sorts, 7s. 6d. per 1000; with transplanted, from 1 to 1½ foot up to 3 and 4 feet, at very low prices, which can be had on application.
OAKS, large quantity, 3 to 4 and 4 to 5 feet.
With a GENERAL NURSERY STOCK. Prices on application.

THE ROYAL NORFOLK SEED ESTABLISHMENT
ESTD 1844

DANIELS BROS.'
CHOICE GLADIOLI FOR 1876.

Our Collection of choice named Gladioli is one of the most varied and extensive in the United Kingdom, and comprises many thousands of the newest and best varieties in commerce. A fully descriptive list is published in our "Illustrated Guide for Amateur Gardeners," and will be forwarded gratis and post-free to all intending Purchasers.



Choice Named Gladioli,

In Collections carefully arranged to ensure a fine variety of colour.

100 in 50 choice vars.	£5	0	0	24 in 12 fine named sorts	£1	1	0
50 in 50 choice vars.	2	15	0				
50 in 25 fine sorts ..	2	10	0	24 in 12 superb exhibition vars. ..	1	0	0
25 in 25 fine vars. ..	1	10	0				
50 in 25 superb exhibition vars. ..	3	10	0	12 in 12 fine named sorts	0	12	0
25 in 25 superb exhibition vars. ..	1	17	6	12 in 12 good named vars.	0	9	0
24 in 12 superb exhibition vars. ..	1	15	0	12 in 12 popular sorts	0	6	0

Gladioli in Mixtures.

Per dozen—s. d.		Per dozen—s. d.	
White ground varieties ..	4 0	Brilliant Scarlet and Dark Red	4 0
Rose and Light Red varieties	4 0	Yellow ground	5 0

Choicest mixed, all colours, per dozen, 3s., per 100, 20s.; per 1000, 160s.

From Mr. WM. LAW, *Head Gardener to* His Grace the Duke of Grafton, *Euston Park, Thetford, Oct.* 20, 1875.

"The collection of Gladioli you supplied us with last spring I am very pleased to say, turned out to my entire satisfaction. Your selection was rich and varied and altogether excellent, not an indifferent flower amongst them. They were much admired by the family."

The Illustrated Guide for Amateur Gardeners,

Containing 100 pages of beautifully illustrated Letterpress, two superb coloured Plates, and Original Articles on the successful Management of the Flower and Kitchen Garden throughout the year. This is at once the most beautiful Seed Catalogue and the best Guide for the Amateur ever issued.

Gratis and post-free to all intending Purchasers.

DANIELS BROS.
Seed Growers
NORWICH.

The Most Beautiful new Pelargonium is

BEAUTY OF OXTON.
Price, 1 guinea each.
A pretty and charming novelty is the new double-flowering IVY LEAVED PELARGONIUM, "KONIG ALBERT." Price 7s. 6d. each.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

CABBAGE PLANTS for Sale.—Good strong well-rooted Plants of Early Battersea, Enfield Market, Improved Nonpareil, and Robinson's Champion Cattle Cabbage, delivered free on rail at 3s. per 1000, package included. Cash to accompany all orders.
S. BIDE, Alma Nursery, Farnham, Surrey.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.
Mr. WEBB, Calcot, Reading.

PANSIES, Show and Fancy, the leading sorts, per 100 or 1000.
Bedding Pansy, "Royal Blue," awarded "Best Blue Pansy," Scottish Pansy Show, Edinburgh, June, 1875. Prices on application.
WM. PAUL, Crossflat and Greenlaw Nurseries, Paisley.

RICHARD SMITH'S FRUIT LIST contains a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c. Free by post for one stamp.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester

TO THE TRADE.—LARCH, strong, 2 to 2½ and 2½ to 3½ feet, clean grown and well-rooted. PEAR STOCKS, twice transplanted: 2-yr. seedling PEAKS. ASH, 1½ to 2½ feet, and 1-yr. seedlings. GEANS, 1-yr. seedlings. VIOLAS and PANSIES, bedding; and Show and Fancy do. PHLOXES, early and late.
DICKSONS AND CO., 1, Waterloo Place, Edinburgh.

Pelargoniums, Pelargoniums.

JAMES HOLDER'S unrivalled Collection—strong healthy Plants, Show, French, and Fancy varieties, at 35s. per 100, cash, Hamper and Packing included. Extra strong plants, in 48's and 32's, at 9s. and 12s. per dozen, Basket and Packing extra.
Crown Nursery, Reading

120,000 Vesuvius Geraniums for Sale.

F. C. WOOLVEN, Langhedge Nurseries, Church Road, Upper Edmonton, London, N., has strong AUTUMN STRUCK PLANTS of the above to Dispose of, at 8s. per 100. Packed and forwarded to any London railway station gratis on receipt of Post-office Order for number required, payable at the Upper Edmonton Post Office, London, N. Also several thousands of CHRISTINE and DOUBLE GERANIUMS, at the same price.

To the Trade.

VICTORIA PLUMS, dwarf-trained, by the 100, and other leading sorts—the finest trees in the trade, having five to fifteen strong vigorous branches each, 120s. to 150s. per 100; also Maiden Victoria, 5 feet high, fine, 40s. per 100.
EWING AND CO., Norwich.

Genuine Seeds.

JOHN AND CHARLES LEE, Seedsmen to the Queen, invite attention to their new and extensive CATALOGUE of SEEDS for 1876. This Catalogue has been prepared with their usual care, and contains every novelty, whether home-grown or foreign, with the most minute and useful descriptions of both Vegetable and Flower Seeds. The prices of every article are the very lowest, considering the first-rate quality of the various stocks offered. The long standing of the house of LEE (125 years) is a sure guarantee of the excellence of their seeds and the soundness of their trading. Catalogues may be had post-free on application.
Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

MESSRS. BROWN AND CO. will forward the following Choice Plants to any part:—
25 AZALEAS, new hardy Belgian varieties, one of a sort, on their own roots, by name, 20s.
25 AZALEAS, American varieties, do., do., 15s
12 Hardy RHODODENDRONS, including Scarlet, White, and Rose, one of a sort, 12s.
12 fine hardy Scarlet RHODODENDRONS, 10s.
Hardy HEATHS, LEDUMS, and KALMIAS, 6s. per dozen.
ROSES and FRUIT TREES of all kinds cheap.
American Nursery, Farnham, Surrey.

Mulberries.

March and April are the two best months for Transplanting.
KINMONT AND KIDD have a large and very fine stock of these to offer, with fine clean stems and excellent heads, which they are prepared to Dispose of to the Trade and others on very liberal terms. Particulars on application. Also a few hundred YUCCA RECURVA, cheap.
Exotic Nursery, Canterbury.

HANDSOME LAWN TREES and EVERGREENS.
PICEA MAGNIFICA, true, 2 to 5 ft., 21s. each and upwards.
P. AMABILIS, true, 2 to 3 feet, 10s. 6d. each and upwards;
P. NOBILIS, 1 to 6 feet, 2s. each and upwards; P. NORDMANNIANA, selected varieties, 5 feet, 7s. 6d. each and upwards; P. PARSONSI, 4 to 10 feet, 15s. each and upwards;
P. NOBILIS GLAUCA, 2 to 5 ft 7s. 6d. each and upwards.
CUPRESSUS LAWSONIANA, in fine selected variegated and other varieties.
RETINOSPORA, in great variety, variegated and others.
THUJA, CUPRESSUS, CEDRUS, and ABIES, in many varieties, and nearly every variety of CONIFERÆ, offered at very low prices, to effect a clearance.
Some of the above, being selected seminal varieties, are very magnificent specimens. They have been carefully transplanted and grown for Sale. Application, either personally or by letter, at The Gardens, Whitchurch Rectory, Edgware, N.W., will receive every attention.

FOR SALE, at a Low Price for Cash (from a Private Nursery, over-stocked), about—
500 LAURELS, 4 to 5 feet.
300 BOX, 2 to 3 feet.
200 YEW, 3 to 5 feet.
4000 ELM TREES, 4 to 6 ft.
7000 ASH, 3 to 6 feet.
4000 MAPLE, Norway, 5 to 8 ft.
1000 HAZEL, 3 to 4 ft.
1000 HORNBEAM, 3 to 4 ft.
Apply to Mr. W. S. HOSLEY, Audley End, Saffron Walden, Essex.

Enormous Reduction.

LILIUM AURATUM.—Magnificent Bulbs of these exceedingly beautiful Lilies, just arrived from Japan in the finest possible condition—sizes Nos. 1 to 4, at 45*s.*, 65*s.*, 85*s.*, and 125*s.* per dozen. Single samples sent post-free on receipt of two extra stamps to the Importer (with whom samples may be seen)—
WM. GORDON, 10, Cullum Street, E.C.

JAMES DICKSON AND SONS, 32, Hanover Street, EDINBURGH, have to offer :—
ABIES DOUGLASII, 1-yr. Seedling, 1-yr. transplanted, at £3 per 1000. This is one of the finest of the new Pines.
LARCH, 1-yr. Seedling, 1-year transplanted, 8*s.* per 1000. They are vigorous and healthy, fit for Hill Planting or for the Nursery.

PINES.—For Sale, 60 Queen Pines, succession—clean, healthy Plants, several of them in fruiting pots. Apply to
The LAWSON SEED AND NURSERY COMPANY (Limited), Edinburgh.

Surplus Stock

H. LANE AND SON can offer the following at greatly reduced prices, all fine, well-grown trees :—
CUPRESSUS LAWSONIANA, 3 to 15 feet.
THUJOPSIS BOREALIS, 3 to 15 feet.
THUJA LOBBII, 3 to 15 feet.
„ GIGANTEA, 4 to 9 feet
WELLINGTONIA GIGANTEA, 5 to 10 feet.
PICEA GRANDIS, 8 to 15 feet
„ NORDMANNIANA, 2 to 12 feet.
„ NOBILIS, 2 to 8 feet.
YEWS, Irish, 4 to 8 feet.
LAURELS, Portugal, 2 to 5 feet.
CEDRUS DEODARA, 3 to 5 feet.
ARBOR-VITÆ, Siberian, 4 to 6 feet.
HOLLIES, Variegated, 2 to 7 feet.
RHODODENDRONS, named, Seedling Hybrids and Ponticums, blooming plants; Standard WALNUTS, PRUNE DAMSONS, CHERRIES, and THORNS; Dwarf-trained APPLES, PEARS, and PLUMS; Horizontal-trained APPLES and PEARS; Pyramidal APPLES, PEARS, PLUMS, and CHERRIES.
CATALOGUE and price on application.
The Nurseries, Great Berkhamsted, Herts.

Carnations, Picotees, and Pinks.

ISAAC BRUNNING AND CO. beg to announce they are in a position to supply strong healthy Plants of their choice and extensive Collection of the above as follows :—
CARNATIONS, 18*s.* to 24*s.* per dozen pairs.
PICOTEES, 15*s.* to 21*s.* per dozen pairs.
PINKS, 9*s.* to 15*s.* per dozen pairs.
Our One Guinea Collection of the above, which gave general satisfaction last season, contains six pairs choice Show Carnations, six pairs choice Show Picotees, twelve pairs Show Pinks, and twelve choice Carnations and Picotees mixed, for borders, sent Carriage and Package Free on receipt of Post-office Order for 21*s.*; double above quantities, 40*s.*; half ditto, 11*s.*

CHOICE HYBRID GLADIOLI.

I. B. & Co have now ready for delivery a very large and choice Collection of the above, which they will be pleased to supply in Collections as under :—
No. 1 Collection contains 100 bulbs, in 50 choicest kinds, with names, £5.
No 2 Collection contains 100 bulbs, in 25 choicest kinds, with names, £3 10*s.*
No. 3 Collection contains 50 bulbs, in 25 choicest kinds, with names, £2 10*s.*
Fine selections can also be supplied at 6*s.*, 9*s.*, 12*s.*, 18*s.* to 30*s.* per dozen.
GLADIOLUS BRENCHLEYENSIS, splendid scarlet, 9*s.* per 100, 1*s.* 6*d.* per dozen.
For detailed List of varieties and prices of Carnations and Gladioli, see our NEW ILLUSTRATED SEED CATALOGUE for 1876. Gratis on application.

FASTOLF RASPBERRY (true).

We have a limited quantity of the above (for the stock of which our Nurseries have for years been famous), to offer, in strong well-ripened Canes, at 9*s.* per 100.
Goods Carriage and Package Free for cash with Order for all parcels value 20*s.* and upwards. The usual discount to the Trade.
ISAAC BRUNNING AND CO., Great Yarmouth Nurseries.

WM. PAUL AND SON
HAVE TO OFFER :—

SPECIMEN ROSES,
2 to 5 feet, 5*s.* to 10*s.* each, loaded with incipient flower-buds, suitable for exhibiting this year.
** Thousands of young plants, Standards and Dwarfs, at the customary nursery prices.

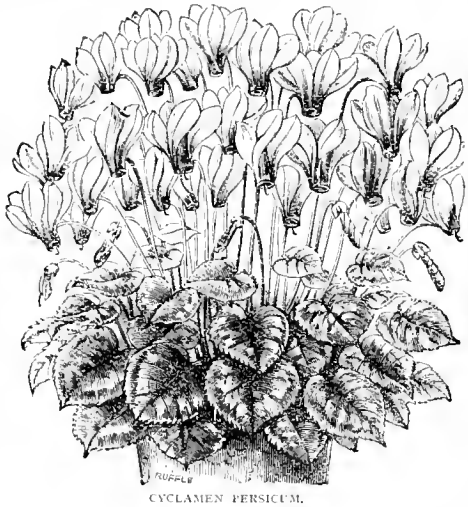
SPECIMEN CAMELLIAS,
3 to 10 feet, 21*s.* to 30 guineas each; handsome trees, with bloom.
** Thousands of young plants of all the best sorts, with bloom, at the ordinary nursery prices.

SPECIMEN FRUIT TREES.
Apples, Pears, Cherries, Plums, &c., pyramids, well set with fruiting buds, will bear a crop this year; 3 to 8 feet high, well balanced trees, 30*s.* to 60*s.* per dozen.
* Thousands of young trees of every kind at the usual Nursery prices.

SPECIMEN EVERGREENS and SHRUBS
of all the best sorts; acres to select from; 1000 species and varieties; individual prices on application.
SPECIMEN LIMES, 12 to 14 feet, 36*s.* to 48*s.* per dozen.
„ PLANES, 12 to 18 feet, 7*s.* 6*d.* to 15*s.* each.
„ ELMS, 12 to 14 feet, 24*s.* per dozen.
„ TURKEY OAKS, 12 to 14 feet, 36*s.* per dozen.
* A large collection of Avenue, Roadside, and Park trees, &c.
Priced descriptive CATALOGUES post-free on application.
IMPORTANT—Observe the Christian Name—
WM. PAUL AND SON, Paul's Nurseries, Waltham Cross, Herts.

B. S. WILLIAMS' Choice FLOWER and VEGETABLE SEEDS for 1876:—

	Per Packet.—*s.*	*d.*
BEANS, Williams' Early Prolific Dwarf French, in sealed half-pints	1	6
BRUSSELS SPROUTS, Welch's Giant, one of the finest in cultivation	1	0
CUCUMBER, Tender and True	2	6
„ Osmaston Manor (new), one of the Finest Varieties, either for Summer or Winter use; 26 to 32 inches long, very prolific	2	6
MELON, Osmaston Manor Hybrid (new), a splendid Green-fleshed Variety, beautifully netted, globular in form, and of delicious flavour	2	6
ONION, Williams' Magnum Bonum, the heaviest cropping and longest keeping Onion in cultivation	1	6



CYCLAMEN PERSICUM.

CHOICE FLOWER SEEDS.

	Per Packet.—*s.*	*d.*
BALSAM, Williams' Superb Strain	2*s.* 6*d.* and 1	6
BEGONIA FROEBELII (new).—This is a new and distinct species	2	6
CYCLAMEN PERSICUM, Williams' Superb Strain,	5*s.*, 3*s.* 6*d.*, 2*s.* 6*d.*, and 1	6
CELOSIA PYRAMIDALIS PLUMOSA	1	6
CALCEOLARIA, Williams' Superb Strain, 5*s.*, 3*s.* 6*d.*, 2*s.* 6*d.*, and 1	6	
CINERARIA, Weatherill's Extra Choice Strain, 5*s.*, 3*s.* 6*d.*, 2*s.* 6*d.*, and 1	6	
GLOXINIA, Finest Drooping Varieties	1	6
„ Finest Erect Varieties	1	6
PRIMULA, Williams' Superb Strain, Red, White, or Mixed 5*s.*, 3*s.* 6*d.*, 2*s.* 6*d.*, and 1	6	
PYRETHRUM GOLDEN GEM	1	0
STOCK, Williams' Improved Giant Scarlet Brompton	1	6
WALLFLOWER, Harbinger, Autumn and Winter Flowering	1	0

Illustrated SEED CATALOGUE gratis and post-free on application.

Packets of Flower Seeds, excepting heavy kinds, Free by Post.

FREE DELIVERY.—All Orders for Seeds, amounting to £1 and upwards, will be delivered, Free of Carriage, to any Railway Station in ENGLAND; and all Orders of £2 or more in value, to any Railway Station in SCOTLAND or WALES, and any Steam Port in IRELAND.
VICTORIA AND PARADISE NURSERIES,
Upper Holloway, London, N.

DICK RADCLYFFE & CO.,
SEED MERCHANTS,
GARDEN FURNISHERS
And Horticultural Decorators.
PRIZE MEDAL SEEDS.

Complete Collections of Vegetable Seeds.

No. 1.—Suitable for a very Large Garden	£3	3 0
No. 2.—Suitable for a Large Garden	2	2 0
No. 3.—Suitable for a Medium-sized Garden	1	1 0
No. 4.—Suitable for a Small Garden	0	10 6

Carriage free as per terms of Catalogue.

Choice Collections of Flower Seeds.

Containing only popular kinds of easy growth, which will make a pretty and effective show during the summer months.
5*s.*, 10*s.* 6*d.*, 21*s.*, 31*s.* 6*d.* and 42*s.* each.
All Flower Seeds sent post-free.

For full Detailed List of Collections, see D. R. & Co.'s Illustrated Flower, Vegetable, Agricultural and Garden Requisite CATALOGUE, sent gratis and post free on application to

DICK RADCLYFFE & CO.,
128 and 129, HIGH HOLBORN, LONDON.

Seed Potatos, Seed Potatos.

JOHN PERKINS AND SON beg to offer the following :—
RIVERS' ROYAL ASHLEAF,
MYATT'S PROLIFIC ASHLEAF,
EARLY ROSE,
HUNDREDFOLD FLUKE.
Having large stocks of the above, they will be offered at very low prices. 52, Market Square, Northampton.

New and Genuine Seeds Only.

Now ready, gratis and post-free,
BRUNNING AND CO.'S New Illustrated and DESCRIPTIVE CATALOGUE of the above for the present season, containing a selection of the choicest novelties, together with the most approved older varieties, profusely Illustrated, and contains a splendid Coloured Plate representing a group of choice Hybrid Gladioli, for the growth of which their Nurseries are noted. Forwarded post-free to all applicants.
ISAAC BRUNNING AND CO., The Yarmouth Seed Establishment, 1, Market Place, Great Yarmouth.

CHOICE HYBRID GLADIOLI.
The Gladiolus being a special feature in our business, we respectfully invite Growers of this magnificent Autumn Flower to send for our CATALOGUE of Prize Varieties before making their annual purchases. In it all the best sorts are described, and the prices quoted are very moderate.
ROBERTSON AND GALLOWAY, Seed Merchants and Nurserymen, 157, Ingram Street, Glasgow.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of
WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

Abies excelsa aurea (the Golden Spruce).

MESSRS. J. AND C. LEE beg to announce that they now intend to send out this magnificent tree. When planted in the full sunlight the whole tree is suffused with the richest gold. First-class Certificate from the Floral Committee of the Royal Horticultural Society. Well-established plants, 21*s.* each. A few of extra sizes, 31*s.* 6*d.* and 42*s.* each. The usual allowance to the Trade.
Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

Cheap Gladioli from Paris—Named and Seedlings.

LÉVÊQUE AND SON, NURSERYMEN, Ivry-sur-Seine, near Paris, have a large and splendid stock of good and strong flowering bulbs of GLADIOLI SEEDLINGS, equal in flower to the collection, at 8*s.* per 100, £3 per 1000, and £26 per 10,000—mixed, white, red, and pink; per colour, 12*s.* to 20*s.* per 100; yellow, 24*s.* per 100; per names (100), ten sorts, 8*s.* per 100; 25 sorts, 14*s.* per 100; in 50 or 100 sorts, the best, from £1 to £6, less or more, according to the novelty of the sorts. All good flowering bulbs. English cheque on London, or Post-office Order on Paris, accepted in payment.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving Size, Price, Popular and Botanical Names, Derivations, Description, Form, Colour, Foliage, Growth, Timber, Use in Arts, Native Country and Size there, Situation, Soil, and other information, with copious Index of their many Synonyms. Free by post for six stamps.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

AUSTIN AND MCASLAN, 16, Buchanan Street, Glasgow, beg to offer the following—samples and prices on application :—
THORN QUICKS, 2½ to 3 feet.
BEECH, 2½ to 3 feet.
ENGLISH ELMS, 2½ to 3 feet.
OAKS, Common, 2½ to 3 feet.
LIMES, Red-twigged, 5 to 6 feet.
SPRUCE, 2-yr. seedlings, very fine.
TREE BOX, 1½ to 2 feet.
ENGLISH YEWS, 1½ to 2 feet.

AVENUE TREES.

	Girth 4 ft. from ground.	
LIMES, 12, 14, 15, 16 and 18 feet high	6 to 10	inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8	„
MAPLES, Norway, 12 to 16 feet high	5 to 8	„
CHESTNUTS, Horse, 10 to 14 feet high	8 to 10	„
„ Scarlet, 10 to 14 feet high	8 to 10	„
„ Double, 10 to 14 feet high	8 to 10	„
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10	„
ELMS, 15 to 18 feet	7 to 9	„

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.
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SALE of the COLLECTION of ORCHIDS formed by the late S. RUCKER, Esq., of Wandsworth.

MR. J. C. STEVENS has received instructions from Messrs. JAMES VEITCH & SONS, of Chelsea, to offer for SALE, on WEDNESDAY and THURSDAY, April 12 and 13, the COLLECTION of ORCHIDS recently purchased by them from the Executors of the late S. Rucker, Esq.

This Collection comprises many fine and rare kinds. It was formed by Mr. Rucker during the last five years, and it is not too much to say that almost every plant was selected for its variety. The plants are healthy, vigorous, young, growing Specimens, and well worthy the attention of all Orchid Growers.

Amongst others will be found the following :—

ONCIDIUM ROGERSII (true, the only plant at present saleable in England)
LÆLIA ANCEPS DAWSONI
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,, TOVARENSIS
,, HARRYANA
,, LINDENI
,, VEITCHII
DENDROBIUM WARDIANUM
,, CRASSINODE
,, AGGREGATUM MAJUS (splendid masses)
,, LAMELLIANUM (very fine)
PHALÆNOPSIS GRANDIFLORA
,, AMABALIS
,, SCHILLERIANA (a very fine lot of all the kinds)
CATTLEYA LABIATA (true autumn-flowering varieties)
,, MENDELII (splendid plants), &c.

On view the mornings of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

Important Sale of Cattleya gigas and Odontoglossum vexillarium.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, March 13, at half-past 12 o'Clock precisely, imported Plants of the rare and most lovely Odontoglossum vexillarium, Cattleya gigas, Uropedium Lindeni, just received by R.M.S.S. *Nile;* also splendid Established Plants, many of them in Flower, of Phalænopsis amabilis, P. Schilleriana, P. roseus, P. Luddemanniana, P. grandiflora, P. leucorrhoda, Dendrobium Wardianum, D. crassinode, D. Falconeri, Cymbidiums, Vandas, &c.

The CATTLEYA GIGAS and ODONTOGLOSSUM VEXILLARIUM are worthy of special attention, the Plants of this grand Odontoglossum being by far the finest hitherto offered, and in the best possible condition, the leaves and young breaks being fresh and green.

On view the morning of Sale, and Catalogues had.

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Awarded a First-class Certificate by the Royal Horticultural Society, October 6, 1875.

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Maiden Trees, 10s. 6d. each; Pyramid or Trained Trees, 21s. each. Coloured Plates, 6d. each.

RED HAWTHORNDEN APPLE.—Dr. Hogg describes this as large, oblate, and angular; skin smooth, greenish yellow, with a red blush next the sun; flesh white, tender and juicy, with a sprightly and agreeable acidity. A very early and valuable culinary Apple; ripe August and September. Maiden trees, 7s. 6d. each; Pyramid or trained trees, 10s. 6d.

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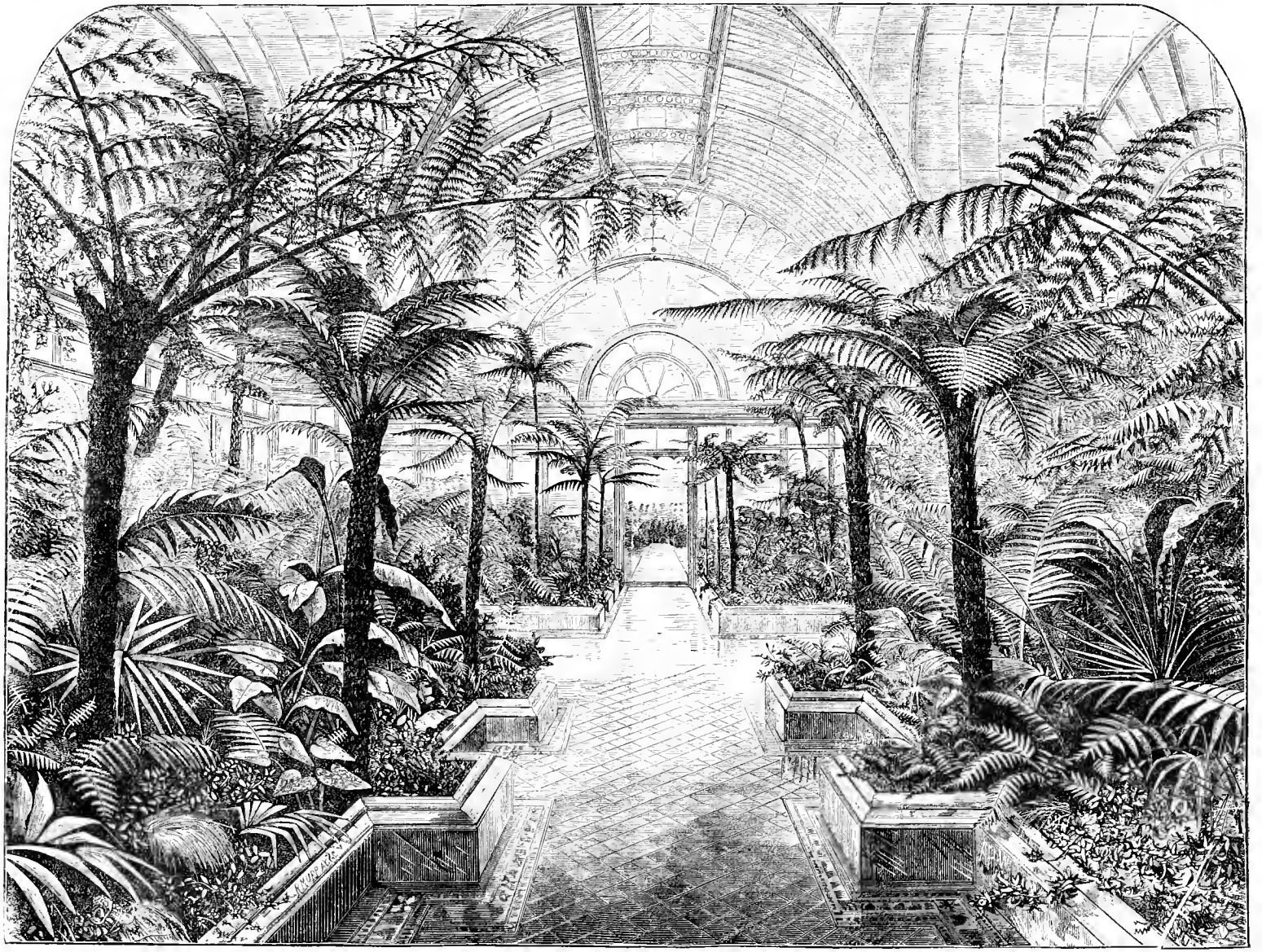

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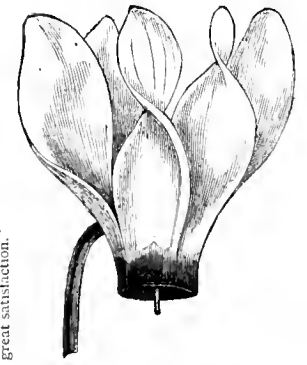

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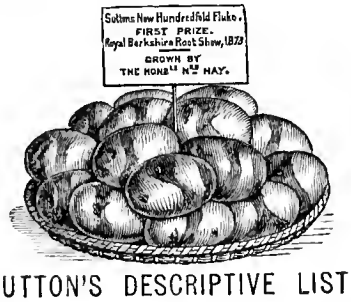

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SATURDAY, MARCH 11, 1876.

ROSIÈRES.

THE custom of crowning a young girl as Rosière, for her good conduct, referred to in a recent number, even if it did not originate there, is old-established at Nanterre, a village near Paris, celebrated as the birthplace of St. Geneviève, the patron saint of the French capital, for its firemen (the subject of jokes and caricatures), its cakes, and the crowning of its Rosière, which last has furnished subjects for the theatre. From Nanterre the institution has spread, as recorded; but that being the fountain-head of Rosières, you may perhaps find room for the account of a witness, M. E. Martineau, who has kindly imparted to me what he saw at a recent celebration.

"Although," he says, "the ceremony did not commence till two in the afternoon I was in the church at a quarter to one, in order to get a good place, and be able to supply you with an accurate report. In the church, between the choir and the pulpit, was a raised platform filled with benches, and surmounted with three armchairs of crimson velvet and gold. The benches were destined for fifty young girls dressed in white, with blue ribbons, and for the members of La Petite Sainte Geneviève. Six steps, covered with carpet, led to the said platform, which, and all about it, was hung with crimson velvet fringed with gold. The interior of the church was divided into four distinct portions—the choir for the high authorities and the persons invited, the mayor, deputy mayors, justice of the peace, officers of the army, municipal council, and others. The front of the platform was reserved for the ladies of the Nanterre aristocracy, such as the mayoress, the deputy mayoresses, the ladies who had crowned the Rosières in years gone by, the ladies of the officers, and the other grand functionaries of the parish. Places, also facing the platform, were assigned to ladies and gentlemen of a subaltern class, rural policemen, town-hall officers, beadles, Sisters of Charity, and their friends and guests. The nave and the gallery in which the organ stands, was occupied by the paying public, admitted by tickets. That was my place, commanding a capital view of the three splendid armchairs, the central one being for Madame Mayer, the Dame de Charité, who undertook to perform the act of crowning; that on the right for the last year's Rosière, and that on the left for the lucky new one. At two precisely the procession entered the church, headed by the Nanterre choral band, a detachment of the 103d Regiment of the line, and all the authorities, preceded by M. Paul Morin, deputy and mayor, with the new Rosière on his arm, and the Justice of the Peace with the last year's Rosière. The regulations inside the church were conducted by the Members of the Society of Mutual Assistance, wearing a blue armlet fringed with silver, and a red and white ribbon with a like fringe at their button-hole. The celebration was conducted by a prelate or chaplain of St. Denis; the Curé of Nanterre did no more than make a speech for the occasion, which would have been all that could be wished had it not been full of double meanings from his discoursing at length about virtue, and so on. When the *cortège* entered, the new Rosière advanced to the high altar to say her prayer and receive the prelate's benediction, nor did she mount the steps of the platform till M. le Curé had finished his address. She then knelt before Madame Mayer, who placed the white wreath on her head, a pair of ear-rings in her ears, a brooch on her breast, and a watch and chain round her neck. At the instant of receiving her virgin crown, the former Rosière took off hers and slipped it on her arm; her year's dignity had passed away. In this case, you see, there was no question of marrying. The new dignitary was conducted to her home with the same honours, and at half-past 3 all was over. This young lady, passably pretty, was a seamstress or dressmaker who maintains her parents, short and dark—in the language of the place, *une petite châtaigne*, a little Chestnut.

"In 1874 no crowneress lady (*couronneuse*) was forthcoming, in consequence of the expense involved. The municipal council removed the difficulty, supplying the deficit by a vote. At the outset, things were done in more modest style. The first Rosière, who we hope is still alive, though a little out of bloom, 'created,' as the French say, in 1819, had only a present of 300 francs, and a little cross hung round her neck with a simple white ribbon. A list of their Rosières is recorded in the chronicles of Nanterre, with the names also of their *couronneuses*, like the lines of kings and queens in the histories of France or England.

"A local newspaper observed: 'Ridicule, which nothing in France can resist, seems to be directing its shafts against the crowning of the Rosière; and it is the people of the place who, by their ill-favoured jokes, are sapping the foundations of this pleasing institution. In the church itself pleasantries in unquestionably bad taste were bandied about from mouth to ear; in the streets the same thing happened. Fun was made of the procession, the native band, the banner-carriers—of everything. All we can say is—so much the worse. It will be a great pity if vulgar coarseness should suppress this charming *Fête de la Rosière*, whose origin is so ancient as to be lost in the night of ages. Of all the spectators, those who regarded it the most seriously were the soldiers posted along the line of the procession. Their honest faces gazed with pleasure on the young Rosière escorted by the firemen in uniform and the constituted authorities. Not one of them thought of talking nonsense. On the contrary, you could see that they presented arms with respect and conviction as Mdlle. Bachelet passed by.'"

The above, as a promising get-up, seems worth the attention of the Royal Horticultural Society. It is at least as horticultural as a skating rink. By the way, what is the derivation of the euphonious monosyllable, "rink"? [A perversion of "ring," probably.] It is new to London, and might draw money. Chiswick could supply Rose bushes, and it would be strange if all South Kensington could not furnish a Rosière. The Society might at the same time crown Rosiers, Rosières, and fill its own pockets, thereby killing three birds with one stone. *E. S. D.*

Spring Primroses.—If the question were asked, "How would a gardener produce the earliest and finest wild Primroses during February and early March?" the answer would doubtless be, "Grow and well ripen them upon the most sheltered and sunny site, where the earliest warmth of spring can best reach, and the cold north winds are least open to them." Nevertheless, I give two facts at variance with these deductions. I have here a wild seedling Primrose amongst a bed of Pansies on a northern aspect. It is, in fact, at the very foot of a wall, and has never yet, owing to the shade of a house, received the direct rays of the sun. This plant afforded blooms to a water-colour artist on the Kentish coast last December, whilst last month it was full of bloom, and is now a veritable ball of yellow. As another instance I may mention that I have seedlings of garden Primroses of the usual Polyanthus type, planted at the base of the north-west angle of a wall, where likewise no sun reaches; and though similar plants in more sunny sites show very short-stemmed blooms, these possess flowers the stalks of which are 4 or 5 inches long, standing well out of and bending over the foliage. *William Earley.*

PEACH FORCING.

In reply to "Beginner" as to the meaning of the words "stuff of the right sort," at p. 173, in my previous article on early Peach culture, I may say that I alluded to the composition of the border in which the trees were planted, which consisted of nothing but pure maiden loam of a rather sandy texture, with a slight sprinkling of lime rubbish and broken brick-bats. No greater evil can possibly exist than that of applying exciting manures to borders on which it is intended to plant young Peach trees; indeed, it is often difficult to regulate and manage the young growth of trees which are planted in a border such as I have indicated, and it is especially so in the hands of amateurs, who in a general way are great believers in over-doses of manure. Re-invigorating old trees is a very different thing.

Turning my attention to the outspoken remarks of your correspondent, Mr. Miller, I will reverse the order of things generally, and begin with the latter part of his article, in which are the only two points upon which we seem to differ. Before doing so, however, I have to thank your correspondent for the encouragement he so kindly accords to a beginner; and I venture to suggest that, if men of Mr. Miller's experience would chronicle more of their failures as well their successes they would confer a great benefit on a considerable percentage of their brother gardeners. It is men of tried and undoubted reputation like Mr. Miller who can afford to report their failures without injury to themselves.

I have very reluctantly to dissent from the opinion so generously put forth by your correspondent, that old gardeners are not in as much need of his advice as some of the young ones. At all events, I know that the productions of some of the young ones would bear very favourable comparison with those of some of the old ones.

With regard to the setting of Peaches by the application of a "cold-water bath," I never expressed the slightest doubt but that people possessed of sound practical knowledge might safely apply it, but the instance I cited was one of a very different character. It was the case of a man who had gained a position by his "wits" rather than by his practice. He was a round man in a square hole, and people of this class are very likely to grapple at anything which may appear to them as new practice before they have studied the conditions under which such practice should be carried out. I am sure Mr. Miller would scarcely recommend us to syringe a Peach-house in bloom, with our front ventilators open and a cutting February wind with its paralysing effects acting on the fertilising powers of the fully expanded blossoms.

When Mr. Miller asks the question whether I put him down as a "usurper" or not, I suppose he is having a good-natured jest at my expense, and as such I will pass it over, but it is no jest for an employer who loses his crop of Peaches by his gardener adopting a system of culture which he does not understand. I need not remind your readers that in great commercial communities, such as Liverpool, London, Manchester, &c., there are new gardens and gardeners of a very "doubtful training" cropping up every year, and for the benefit of this class alone we cannot be too explicit in laying down rules by which to guide people who owe their very existence to the information contained in the pages of our horticultural journals.

After all my convictions are still unaltered with respect to this syringing as a general practice, and the most the promoters of the system can claim for it is that if it does no good it does no harm, in the hands of experienced cultivations. The same may be said of the time wasted with "camel's-hair brushes;" hours, nay days, are wasted in some extensive places at this "time-killing" operation. I have wasted days at it myself, but now the only artificial means I use is merely to give the trees a good shaking in bright sunny days, in addition to the general treatment laid down in my previous remarks on the setting of Peaches.

As to root-pruning I quite agree with Mr. Miller that with good management such an operation is unnecessary, but does it follow that we are not to have recourse to such means when we find it absolutely necessary? The young trees I referred to had grown for a number of years without ever bearing a fruit; their summer management was "grow as you will," to be followed up by knife slaughtering the following winter; the border in which the trees grew would have done very well for Rhododendrons but leaf-mould and peaty soil never yet produced magnificent Peaches, nor indeed will any fruit-bearing tree ever make roots calculated to supply a fine mass of healthy foliage and fruit with nourishment from a border of such a composition. Young trees especially fed from such a source are more likely to produce long lanky roots and suckers rather than masses of fibre, which I suppose all are agreed upon as the right road to success, and I also suppose that few will disagree with me upon the point of firm borders for fruit trees. "Stubborn facts" have banished a good many old-fashioned notions out of our heads, and we are nearly all agreed that the harder the border the greater will be the quantity of fibre, only care must be taken that the border is at all times in a fit state to admit of being thoroughly watered.

I consider it highly interesting to follow your correspondent in the report of his failure in 1865. Would the premature yellowness in the leaves not indicate premature ripening of the wood? which in an early Peach-house is nearly sure to be followed by a kind of second growth in the autumn, which if mild would increase the evil. The buds swell unusually large, and when started the following spring are certain to drop off. I had a similar case to the above last year myself, but before I proceed to describe it I may say that when I came here eighteen months ago it was decided to renew all the fruit-houses on the place, and we had, of course, to come to some conclusion as to the plans we were to adopt to keep up at least a moderate supply of fruit whilst the bulk of the houses were being replanted.

Having, as we thought, matured our plans for future operations, we decided upon not interfering with a Peach and Nectarine which were the sole occupants of one little house, and I had better state that I had heard a very poor account of the behaviour of this particular Peach tree previously. I, however, thought nothing impossible till I had tried, and I determined to fruit this tree if I could. Both trees were planted in an inside border, and during the summer I had "arches" cut in the front wall, to allow the roots to pass out into a new outside border, some 3 feet in width. This was to encourage fresh root action, as we had a strong opinion, from the character of the wood, that the principal part of the roots inside were fleshy tap-roots. Calculating a good deal on a host of young rootlets being formed in this new border during the growing season, we had formed great hopes of success the following season, but, much to our disappointment, the buds began to swell in the autumn, as if the natural spring growth had actually commenced. After such symptoms we had nothing to look forward to but a complete failure, as the result proved to be—nearly every bud dropped, and the few that remained did not even set, so that we were left with three fruits for a crop on a good-sized tree. It must be borne in mind that this particular tree had never carried beyond two or three fruit each year for over two years, so that it had got into a thoroughly barren state, and when it was rooted out my opinion was confirmed by the fact that we only found three or four great roots as thick as one's arm. I did everything I could in the shape of watering and summary pinching with my own hands, and failed, but I have no doubt but that I could have fruited the tree in a year or two by lifting it. Time is, however, too valuable to be wasted on such experiments with limited means, so I planted the house with young Vines in May, and consigned the old Peach tree to its proper quarters—the rubbish heap.

I may give another instance of a Peach tree in the second Peach-house at Roby Hall, from which (when I was gardener there) I could never manage to get a full crop. We could always depend upon from eighteen to twenty-four fruit of enormous size and fine colour. I was too hard pressed for early fruit to run any risks, otherwise I had great faith in being able to work the tree into a satisfactory bearing state. One does feel puzzled at times with such cases; but if I could have my way, I should always take care to remove the lights from early Peach-houses after the wood is thoroughly ripened, so as not to incur any risk of second growth: it is not always practicable, but where it is the plan is a safe one. The trees are kept cool, and there is little chance of excitement to second growth, but care should also be taken to throw off the late autumn rains.

I am glad to see that Mr. Miller is so emphatic upon the treatment of Peach trees after the fruit is gathered. We should hear less of bud-dropping if people could be got to understand the quantity of water that a healthy Peach tree will absorb in a season, and even when at rest dust-dry borders are the sure forerunner of coming evil. When such a state of things occurs, let me impress upon your young readers not to over-dose their fruit borders with gallons of water, which trees that have undergone a species of semi-starvation are unable to use. Give a man who has been half-starved for food for any length of time an extra hearty meal, and it will almost kill him; therefore, let us bring our common-sense to bear on our treatment of vegetable life, and be something like rational in our applications; excesses, in whichever way they are brought about, are sure to end in failure.

Then again we observe people promising their employers fruit at a certain time from trees whose constitutions are already impaired: the borders get an extra quantity of cow-manure to make up for the worn-out state of the subjects which are to yield those fine fruit on a certain day. What a pity that he who administers such treatment could not see these things in the same light as giving an infant a beefsteak. We only want to study vegetable life a bit to become thoroughly conversant with the applications that will meet the requirements of Peach trees or anything else, according to the health and constitution of the various kindred subjects with which we have to deal.

One of my own late pupils told me some days ago that he was determined to have some enormous Peaches last year, and with this end in view he had his Peach border covered to the extent of several inches with fresh cow-manure about the time the trees were coming into flower. Well, I have no need to tell the majority of your readers what effect an atmosphere charged to such an extent with pent-up ammonia would have upon the setting of the fruit. Evidently this man did not agree with my practice, and had quietly made up his mind to try a different method on his own account. He did so, and instead of having a crop of "giant" Peaches, he had none at all. A lesson like this is not likely to be soon forgotten, but the price at which it is bought is rather a dear one. *W. Hinds, Otterspool Gardens, Liverpool.*

AN ORCHID PALACE.

So many inquiries are made as to the construction of my Orchid Palace, that perhaps you will allow me to save repetition by describing it in your columns. On the outside wall of the house, which is the end wall of the drawing room, and in the centre of which is the fireplace, a conservatory is built and furnished with a heating apparatus. The wall of the room on either side of the fireplace was then taken down, and plate glass substituted: in fact two glass walls occupy the place of the brick ones. Thus, when sitting in the room, all the glories of the Orchid-house are to be seen without the inconvenience of the hot and moist atmosphere, and yet as if nothing was interposed. This conservatory, it may be noted, is used only for Orchids, and beautiful stove plants and Ferns, with Bougainvillea covering the roof with its exquisite mauve flowers.

A stage rising from the floor by stairs receives the large plants, according to their heights. To place the smaller ones in a position in which their beauties can best be seen (for most of the Orchids droop, and therefore should be looked at from below) a number of brackets of various sizes are hung against the wall at various heights, and the Dendrobes are suspended from the roof. By this contrivance, the smallest as well as the largest flower is exhibited to the best advantage, and on entering the house so dedicated to them you are surrounded on both sides, and overhead, by a blaze of beauty, for no plant is brought there until its flower has opened. When I planned it all my horticultural friends prophesied that, however good as a show-house, it would fail to be the unique sight it was hoped to be from the sitting-room, for the moisture, they said, would inevitably condense upon the glass, and exclude any view of the floral wealth within. In this fear I shared; but happily it was groundless — the glass is never dimmed for a moment, day or night, summer or winter, fire or no fire.

The Orchid-house is kept at a temperature ranging from 55° to 62°. The air is not very moist, but the roots of the plants should be well supplied with

water, so as not to check growth, especially in the case of the Dendrobes. It is found that the plants are uninjured if not kept too long. The Phalænopsids are the most sensitive in this respect, and should be removed after a visit of a fortnight. The Oncidiums and Odontoglossums preserve their health for a month or more, and are even benefited by the change. The house is, of course, shaded from the sun. How fine the effect of this arrangement is, will be understood when I state that at this time (March 4) the following are in flower there, charming the eye by their beauty, and filling the air with their fragrance :—

Dendrobium Wardianum
,, crassinode
,, aggregatum majus
,, Pierardi
,, Linawianum
,, japonicum
,, brachystachyum
Angræcum eburneum
Cypripedium nævium
,, barbatum
,, nigrum
,, venustum
,, Bullenianum
Epidendrum aurantiacum
,, atropurpureum
,, fragrans
,, cochleatum
,, recurvatum
,, species
Comparettia falcata
Calanthe Turneri
,, Masuca
,, cristata
Odontoglossum Insleayi leopardinum
,, bictonense
,, Reichenheimii
,, pulchellum
,, Rossii
,, ,, majus
Odontoglossum Alexandræ
,, Pescatorei
,, stellatum
,, crocidipterum
Oncidium aureum
,, Barkeri
,, barbatum
,, cucullatum
,, Cavendishianum
,, cæsium
Cattleya citrina
,, Trianæ
Lælia albida
,, autumnalis
,, chocoensis
Vanda tricolor
Saccolabium giganteum
,, violaceum
,, guttatum
Stenia fimbriata
Limatodes rosea
Phalænopsis Schilleriana
,, grandiflora
Lycaste Skinneri
,, leucoflavescens
Cœlogyne cristata
,, flaccida
,, media
Ada aurantiaca
Zygopetalum Mackayi

The D. Wardianum was one of the importations of last spring. It has thirty flowers on one pseudobulb, measuring 3¾ inches across, richly tipped with purple, with a full dark eye. The D. brachystachyum was bought at Stevens' last year by that name ; it proves to be a small but very beautiful variety of Devonianum. Can it be true? If any Orchidist would like to see the house that has proved so successful, with a view to its adoption, my gardener, Mr. Beattie, will be pleased to show it to him at any time, should I not be at home. This place is only 1½ mile from the Mill Hill Station, on the Midland Railway. *Edward W. Cox, Moat Mount, Mill Hill, N.W., March* 4.

LIMESTONE AS FUEL.

It is a somewhat serious matter to gainsay our results attained by practice, and a theory opposed to those results should be fraught with the utmost accuracy and undeniable calculations. Mr. Boyd Kinnear should have been certain beyond a doubt that his calculations were perfect, and that the apparent results of Mr. Moule and others were erroneous, before venturing to state as the result of the process, a loss of 50 per cent. of heat. Mr. Kinnear, although not doubting his own calculations, apparently thinks there is something unexplained, for he says, "There is something very instructive and valuable in the system of kiln-heating, for it appears certain that in many cases actually less coal is employed in the kiln, where it has to perform the double duty of burning the lime and heating the boiler, than was previously employed in the single duty of heating one boiler alone." Now if, under any conditions, a gain of heat is effective in the coals employed in performing this double duty in practice, why should a loss of heat be shown in figures to the enormous extent of 50 per cent. when those conditions can be placed in the most favourable aspect, and when points in theory can be taken advantage of, which in practice is often found untenable, at all events difficult to produce?

My contention is that Mr. Kinnear has failed, as I will show, to produce the correct rendering of the problem he undertook in his paper (p. 139).

Now the theory is this : If limestone be heated by a certain proportion of coal, the carbonic anhydride is expelled from its union with the limestone ; this gas is made to pass through a layer of incandescent coal or carbon, the result being a decomposition of the carbonic anhydride and production of carbonic oxide, which on reaching the surface of the incandescent mass will extract oxygen from the atmosphere, and become again carbonic anhydride—a blue flame and much heat being the result of this union. This is a summary of the process described by Mr. Kinnear, in which there is an interchange of heat ; he mentions no other chemical action in the burning of limestone by which an interchange of heat may be effected, although it is well known to chemists there are other two actions quite different from the one summarised, in which there is a considerable evolution of heat. The most important is that in which the aqueous vapour derived from the water always present in limestone, mechanically combined, plays an important part, for in the presence of aqueous vapour an interchange between the steam and carbonic anhydride of the limestone appear to be effected, and calcic hydride is formed, but the hydride produced is again quickly destroyed. This and the other process I will not produce in detail ; suffice it to say, there is decidedly a gain of heat in the coals employed in limekilns properly adapted with the simple intention of producing heat. We will only examine the carbonic oxide process to prove this. Let us take 1 lb. of coals, which will develope 14,432° units of heat in combining with oxygen ; 4 lb. of limestone under the action of this heat will be decomposed into calcic anhydride and carbonic anhydride—nearly 2 lb. of the latter will be evolved. This gas on passing through the incandescent coal above will combine with ½ lb. of carbon, the production being 2½ lb. of carbonic oxide (in this decomposition and combination we have, however, a loss of about 280° units of heat). On the carbonic oxide reaching the surface carbonic anhydride is again formed, the production of heat being 10,972° units.

It will be seen from the foregoing that 14,432° units of heat were evolved by the coal in the first instance, that 4 lb. of limestone were subjected to the action of this heat, 2 lb. of carbonic anhydride being thus expelled from the limestone. Now, to suppose that all this heat is rendered latent in 2 lb. of carbonic anhydride is not simply incorrect, but it will not stand the test for a moment. Take for instance the direct solidification of carbonic anhydride. The amount of heat absorbed by this gas in passing from a solid to a gaseous state is not one-sixth of the units here represented, and at the same time the particles are in a greater state of cohesion than they are when the gas is solidified in chemical union with a base ; therefore, less heat will be required when the gas is expelled from the latter condition than would be if the carbonic anhydride passed from its own solid condition to that of a gas. We must take this into account. When limestone is subjected to a certain amount of heat, the atmospheric pressure is reduced to a minimum, the molecular cohesion of the stone has undergone a change, and when this has been accomplished the carbonic anhydride is liberated with great rapidity, of course rendering latent the necessary amount of heat to sustain it as a gas. The amount thus rendered latent in 2 lb. of carbonic anhydride, after careful investigation, does not exceed 2500° units. In the whole process we have, therefore, 22,624° units of available heat. Now, in the process 1½ lb. of coal or carbon has been employed : this will produce 21,816° units of heat. This will show a gain of 808° units. Of course I am perfectly aware that this result is not assured in all cases of lime-burning, but with judicious management and a proper construction of kiln, even greater results may be obtained, taking advantage of other chemical actions which may be made to operate.

I do think when an apparently useful invention, or anything which may ultimately prove a further benefit is brought forward, we ought to stimulate and, consistent with facts, support it to the utmost, and upon its merits it will stand or fall. *Wm. D. Cochrane, Bingley.*

STORAGE OF RAIN-WATER.

Those who own, as well as those who are entrusted with the management of extensive garden establishments, more particularly where they happen to be situated in light land districts, must doubtless have seen with regret the immense amount of rain-water which, during the last year, was allowed to run to waste for want of the necessary means to store or retain a portion of it for future use.

An abundant supply of soft water is evidently an essential condition towards successful cultivation, and yet in too many instances the sites of gardens appear to have been selected without any regard to this important matter.

Horticultural structures are also very frequently erected without anything like adequate provision being made for the supply of this indispensable element. Some few gardens, it is true, are so favourably situated, that an unlimited supply of pure water can be obtained for them from adjacent lakes or rivers ; in some cases this can even be secured by gravitation alone, where water in the form of lakes or ponds may exist upon levels higher than that of the gardens or grounds, or in the vicinity of streams where water-towers may be readily furnished with the necessary supply of water, forced up by water-power ; but even in such cases the best use is not always made of these advantages. In the case of gardens so circumstanced, however, the storage of rain-water to any great extent will, of course, be unnecessary. There are, however, on the other hand, very many gardens where, from their position, supplies of river or lake water are simply out of the question ; and all such can ill afford to allow the rain which falls upon glass structures or other adjacent buildings to run to waste. With regard to the former, or to gardens so fortunately placed as to command an abundant supply of soft water at all times when required, all that is in their case necessary is the judicious distribution of the same, and this should be accomplished by means of underground pipes, to which at convenient stations hose or gutta-percha pipes could be readily attached, and by this means crops of all kinds, including fruit trees, &c., could be effectively watered without even treading upon the soil, and the use of the watering-pot would to a great extent be found unnecessary.

An arrangement of this kind may generally be effected at much less cost than would be required for the formation of tanks or cisterns, from which the water used must necessarily be drawn and carried to where it may be required—an operation involving much time and labour, without always securing a satisfactory result.

But it is to gardens which are entirely destitute of the advantages which have been alluded to—and there are many in this position—that the storage of rain-water is of the greatest importance. There are, it is true, in most gardens soft or rain-water cisterns, but unfortunately they are generally so insufficient in capacity that even a short period of dry weather exhausts their contents ; when recourse must be had to hard, or spring water, drawn or pumped from wells of more or less depth, and frequently so impregnated with chalk or injurious mineral deposits that it is utterly unfit to be applied to plants, or to crops of any kind, although necessity in too many instances compels the use of it for such purposes. Water is doubtless the most important element of plant food, as well as being the only medium through which to convey other soluble matter into their system. It is consequently of the greatest importance that this medium should be as pure as possible, or at least free from all deleterious contaminations, and cultivators of tender and delicate plants are only too well aware of the difference which exists in the quality of one kind of water over another ; as is very frequently exemplified by the healthy condition, or otherwise, of the plants to which they are applied. Rain-water, however, if not always quite free from atmospheric impurities, can nevertheless contain nothing that will prove in any degree inimical or injurious to plant life. And this is more than can be said with regard to that of rivers or water-courses, which are too frequently contaminated to a very great extent. And it appears almost inexplicable to think that an element so valuable and of such importance as rain-water should be allowed to run to waste, when all that is required to preserve it for future use is merely brick and cement tanks of sufficient capacity, placed underground or elsewhere as may be most convenient, and into which the rainfall from the roofs of glass structures, as well as that from the roofs of other buildings within convenient distances, should be conveyed by means of earthenware pipes, and this can of course be done at a trifling outlay. Such tanks may of course be placed under sheds, or in any other convenient situation, taking care to provide them with suitable waste or overflow pipes to carry surplus water to where it would be likely to find its way without causing injury to the nearest watercourse. Many years since I saw a large greenhouse being erected in the centre of an extensive range of glass structures, and the entire area under the floor of this greenhouse, to a depth of some 6 or 7 feet, formed one vast cistern, into which the rainfall from the various glass-houses is conveyed ; and, although the rainfall of that

part of the country is by no means excessive—and although more than one exceptionally dry summer has been experienced since the formation of this cistern, it has never failed to furnish the necessary supply of pure rain-water. It has already been said that the quality of the water used has much to do with the health of the plants and crops to which it is applied. It is also essential that water before being applied to plants, &c., should be thoroughly aërated, and when applied to plants under glass, whether in the form of syringings or in applications to the soil containing the roots, should be of a temperature corresponding with that of the atmosphere of the structure containing the plants. To secure this desideratum every structure should be furnished with a cistern in connection with the principal tank or reservoir, and capable of holding sufficient water for at least one day's consumption; and by means of a small pump this cistern should be kept always full, in order that the water, before being used, may have acquired a temperature similar to that of the atmosphere of the house. This cistern may, of course, occupy any convenient position—may, if desired, be concealed under a greenhouse stage or elsewhere, or it may be rendered ornamental, and as a medium for the culture of interesting species of aquatic plants, &c. *P. Grieve.*

RARE CONIFERS.

Pinus Balfouriana.—In writing of Pinus aristata not long ago I exposed myself to the gentle criticism of my friend Mr. Meehan for not claiming for it the prior title of Pinus Balfouriana, given by the Committee of the Oregon Botanical Association to a species sent home by Jeffrey. My reply was that I had not overlooked a certain resemblance between that species and aristata, but that they did not appear to me to be the same; and I suggested to the Editors of this journal that it might be worth while to give their readers an opportunity of judging for themselves by reproducing the figure given by the Oregon Committee, which is now scarce. They have adopted my suggestion, and a figure of the cone and leaves of P. Balfouriana is now given herewith (fig. 58). A figure of P. aristata will be found in the *Gardeners' Chronicle*, 1875, n.s., vol. iv., p. 549.

The description given by the Oregon Committee is as follows:—"No. 618. Pinus Balfouriana (Oreg. Com.).—Leaves crowded, in clusters of two, three, four, and five, about 1 inch long; curved, glaucous below. Cones dark brown, 4½ to 5 inches long, narrowing gradually towards the summit. Scales 1½ to 1¾ inch long, and about half an inch broad. Apophysis flattened, four-sided; umbo dark brown, transversely elliptical. Seed with a mottled spermoderm, winged, three-tenths of an inch long, with a wing about an inch in length. Tree 80 feet high, by 3 feet in diameter. Mountains between Shasta and Scot's Valley, North California, lat. 40° 30′ to 41° 50′. Elevation, 5800 feet. The plate represents the cone, the leaves in a cluster of four, and the mottle-winged seed."

There is not only a great difference in the appearance of the cones themselves, but a very wide separation between the locality of the two. P. aristata is found far to the east in the Rocky Mountains of Colorado, P. Balfouriana not in the Rocky Mountains at all, nor yet in the next range to the west (the Sierra Nevada), but at the point at their northern termination where they unite with the Coast range to form the Cascade range. The altitude, too, at which aristata grows is nearly double that of Balfouriana, although the difference of latitude is little more than a degree. The height of Balfouriana is also greater than that of aristata.

It does not necessarily follow from this that they are not the same species. The variations in the species of Conifers in Western America are very great, and if transition specimens can be found, it would not be safe to hold that P. Balfouriana is not an extreme climatal form of Pinus aristata. This is a point rather for the determination of our American botanical friends than us. They have much greater facilities for ascertaining such points than we have. If they fail to find transition varieties and transition localities I think we must hold the two as distinct species, although no doubt at one time proceeding the one from the other or both from a common stock. In the meantime, I have endeavoured to ascertain the views of one or two of them after they should have seen the figures of them in the circular of the Oregon Committee. I sent a copy to Mr. Meehan, and although he acknowledges that he is somewhat staggered by the obvious dissimilarity in the cones and distance of locality, I can see that he still inclines to the view that they are identical, and is fortified therein by the opinion arrived at by Dr. Engelman to that effect after having seen the living plants and male flowers growing in the Edinburgh Botanical Garden. He mentions, however, that he did not see the cones there. It appears, moreover, that there is great variation in the cones of aristata. Mr. Meehan, however, promises to look out for more materials for forming a judgment, by endeavouring to procure specimens from the quarter where Jeffery found his; and we think the reader will do well to reserve his judgment, as we shall ours, until such additional material be obtained, either by Mr. Meehan or some one else. *Andrew Murray.*

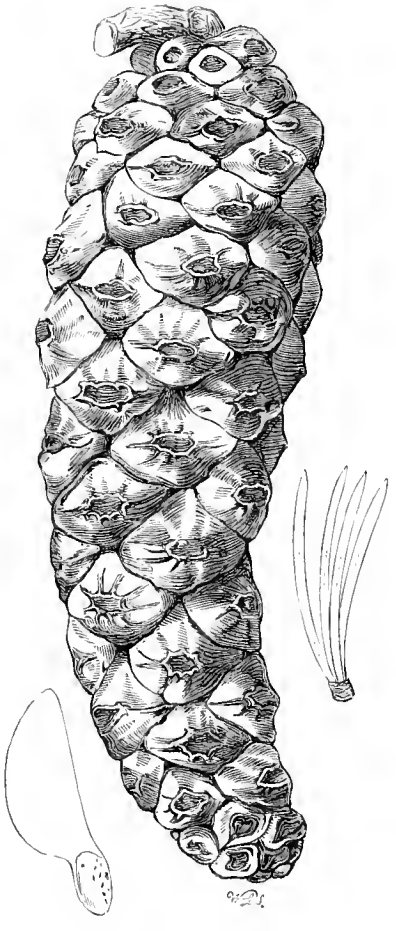


Fig. 58.—Pinus Balfouriana.

THE CLAPTON NURSERY.

We called attention in our columns on February 5 to an extraordinary display of Phalænopsids to be seen in bloom at this wonderful Orchid emporium at that time; and we now have the pleasure of placing before our readers an illustration (fig. 59) of the Phalænopsis-house, prepared from a photograph taken at the time. There were nearly 300 plants in flower when we saw them, and at the present date the display, we hear, is finer and more extensive than at any previous time. The plants for the most part had from three to six leaves, and were grown in small baskets. The house is an ordinary, rather low, span-roofed structure, and the baskets, hung from the roof in a line with the path, made such a display as has perhaps never been seen before. The greater number were of P. Schilleriana, which included many fine varieties, some of them sweet-scented; and one in particular must certainly be considered the finest type in cultivation, so smooth were the flowers, and so pure their colours. P. amabilis came next in bulk, followed by the new P. leucorrhoda, which has the leaves of P. Schilleriana, and the segments of the flowers resembling those of P. amabilis. There cannot be much doubt, we should think, about its being a natural hybrid between the two. Of Phalænopsis grandiflora there was a fine stock of plants coming into bloom. P. Luddemanniana may be seen in hundreds, and last, but not least, we must mention one of the finest coloured varieties of what is believed to be the rare P. intermedia, which is now finely in flower. The plants are in the highest possible condition, and they evidently luxuriate in a moist atmosphere.

What strikes one most at all times when visiting this nursery is the immense quantity of Orchids which are grown, all the finer species and varieties being counted by the hundred; and where will you find them more healthy and vigorous, though grown in houses evidently not made for show? Of Saccolabiums we saw a grand lot, and the centre stage of one large house was solely devoted to Dendrobium Wardianum, then full of buds, and which will present in April no doubt a unique show of blooms. A plant in flower early in February had been in blossom for six weeks, and had eight flowers on a spike; fine, indeed, but what must the plant have been like which one of Mr. Low's collectors saw with forty flowers on a bulb? The entire roof of another house, not of the smallest dimensions, was devoted exclusively to Dendrobium Falconeri—a perfect thicket of this grand Orchid. On the side stages in the house in which were the plants of D. Wardianum above alluded to, Odontoglossum Alexandræ might be counted by the hundred, in company with unnamed New Grenadan Odontoglots; and the same house contained besides a splendid lot of Dendrobium thyrsiflorum. Then came a house containing large batches of D. Parishii, a fine lot; D. Bensonæ, Cypripedium caudatum, C. Parishii, and C. villosum, all in considerable quantities. Yet another similar structure contained chiefly Dendrobium Devonianum, showing buds enough to produce a mass of flowers and occupying the whole of the centre stage, while at the sides were D. crassinode, a splendid batch, coming into flower; varieties of D. Farmeri and D. primulinum, both in considerable quantities. In the Cattleya-house were another fine batch of Dendrobium Falconeri, and the same of Lælia purpurata, Odontoglossum pendulum, Cattleyas Mendelii, labiata, and intermedia. These are not a tithe of the Orchids to be seen here, yet room is being made for more; a new house, three-quarter span, about 250 feet long and 15 feet wide, being rapidly constructed to meet the growing requirements of the establishment. We know where all the Orchids come from; but who can tell what becomes of them? Perhaps Dr. Hooker was not far out when he said England was the grave of Orchids; but one thing is certain—the Clapton Nursery has no hand in the melancholy business.

The Orchids—grand as they are—form only one feature in this immense plant manufactory, many other subjects, principally hard-wooded plants, being cultivated in enormous quantities to meet the growing demands for the same which annually arises amongst the thriving provincial traders. The propagating-house under such circumstances is a matter of some importance; and there is not a better house in Europe for hard-wooded plants than the one in use here, and nowhere are the strikes more successful. The finer and more free-flowering varieties of Heaths and Epacris are struck annually to the number of over 100,000. Erica hiemalis still holds the first place amongst winter flowering varieties, and it is here grown in prodigious quantities. All the best New Holland plants are annually grown in batches counted by hundreds, and of Camellias upwards of 10,000 are usually required every year, Azaleas being wanted in even greater numbers.

A very large span-roofed house is devoted solely to Cytisus, two to show Pelargoniums, and another to Bouvardias. The latter are done remarkably well, the principal sorts grown being Bridal Wreath, Vreelandi, Jasminiflora, Hogarth, Humboldti, corymbiflora, and elegans, which are grown in thousands for autumn and winter flowering. Bouvardias are indeed a special feature, and so also are Tree Carnations and Cyclamens, which are turned out in a style second to none. Cuttings of the Tree Carnations are put in in March, and grown on into grand stuff. The number grown yearly is between 5000 and 6000. Epiphyllums, of which there is a very fine collection, are also grown in very large quantities.

Solanums, which are grown to the number of about 10,000, form another special culture ; and Hydrangeas and double white Primulas are also well done.

In the stoves may be found good numbers of the best of everything—Palms for decorative purposes, Ficus elastica, Dracænas, and other ornamental-leaved plants being grown in large quantities. The Ferns alone form a branch of no small importance, as may be gathered from the fact that Adiantum cuneatum and other Ferns which sell in large numbers, can be seen in thousands. The Tree Ferns, chiefly Dicksonia antarctica, are also numerous.

The limits of our space will not allow us to go further now, though we have not said half that we had intended, or that the importance of the place deserves, but we hope to return to the subject on another occasion.

Fig. 59.—Phalænopsis house at the Clapton Nursery.

Forestry.

Planting large forest trees for the sake of producing immediate effect in the landscape is a department of forestry which deserves much more attention than has hitherto been bestowed upon it. When it is considered that we can derive an equal amount of pleasure from planting by a little skill and a few days' labour as we could in the ordinary way receive in half an average life-time, it certainly behoves every one to whom the beauties of the landscape and adornment of the country afford delight and pleasure to consider whether or not it is worth their while to enter upon and reap such a harvest of real enjoyment. Though almost every one delights in beholding a noble tree, and is equally pleased and gratified at the prospect of a well-designed, healthy, and flourishing plantation, young or old, within their prospect, yet such is the comparatively slow and unobserved development of plantations, even of the most rapid growth, that they seldom or never produce anything approaching rapturous admiration on the part of their constant beholders and most intense admirers.

The growth of trees, in this country at least, is comparatively slow, varying from 1 to 2 feet per annum. During the short period of growth most species grow rapidly, but their season's growth is soon over, and before another succeeds the former growth is lost sight of and quite forgotten. It is, therefore, not those who reside near or in sight of a young plantation that best observe its progress, and are most conscious of the pleasant and improved change it is undergoing ; it is only he who plants a plantation, and leaves the scene of his labours for a period of ten or fifteen years, and returns to it, that can fully realise the progress made and the change produced.

Those only whose minds are thoroughly imbued with the charms of the woodland can testify to the joy and delight of opening their eyes upon a now well-wooded landscape with which they were familiar prior to its adornment with trees, and on seeing the whole aspect so completely changed as to constitute it in their mind an altogether new and better world. In order then to allow us to enter upon and at once enjoy all those pleasures and delights which in the ordinary way we must wait ten or fifteen years to accomplish, we have only to attend to the following directions :—

For many years I have had the transplanting of a great number of large trees annually, and such trees were generally dug round and prepared for transplanting several years previously, under the conviction that their future success would be thereby promoted. Within the last few weeks, however, I was induced to look carefully over all the large trees thus removed, and was not a little surprised to find that those trees dug round and lifted the same season, and generally the same day as dug round, were growing better than most of those that had been previously prepared.

The only principle upon which this can be accounted for is that the one check, sudden and severe though it is, is less injurious to the trees than the two lesser checks, with an interval between. If a tree in full vigour of health is dug carefully round, growing upon a dry open soil, and removed forthwith to other suitable soil and set, the roots, cut, bruised and mutilated though they be, will heal up and recover better than if the operation had been performed at twice, as is commonly practised and generally recommended. Any heavy top branches should be lightened after the tree is placed in its permanent position. By doing so, much of the strain is taken off the feeble and imperfectly established roots, and thus Art accomplishes what Nature would otherwise be induced to do, for it is a common result that large trees on being transplanted lose some of the extremities of their top branches, and thus they are better removed by the hand-saw or pruning-chisel.

The machine or implement I use for the removal of large trees is the common "janker," which consists of two high wheels, axle and pole, or lever ; upon the end of the pole next the wheels a block of strong iron-work is fixed, which stands up so as to receive the stem of the tree as between two horns. The horns are bound round and padded with garden matting so as to prevent galling or bruising the bark in the transit, which the iron would do unless well covered with something soft. The height to which the horns raise the tree from the ground admits of a ball being carried of from 8 to 10 feet diameter. By this simple appliance I have successfully removed trees of fully 3 tons weight, with the aid of six active able-bodied men and two strong horses. In places, however, where it is difficult to get horses to work, a steam-engine may be found necessary to remove very large trees.

The pits into which the trees are to be placed should be prepared both deeper and wider than merely to admit the ball of the tree ; this allows a necessary quantity of fresh earth to be put in around them, which greatly benefits the tree hereafter, especially if the subsoil is of an inferior quality.

Deep planting is objectionable under any circum-

stances, but in all cases where trees are to constitute objects of beauty, as in the case of single trees, it should be studiously avoided. When there is likelihood of the tree subsiding after planting, allowance should be made for it to the extent of 3 or 4 inches; better that the roots be placed too high than too deep in the ground.

The next important matter to attend to is that of fixing or sustaining the trees against winds, and for this purpose, after trying many expedients, I find stones laid over their roots the best. If the top is heavy it may require 2 or 3 tons of heavy, flat stones to sustain it properly, but less if the trees are smaller. In placing the stones care must be taken to preserve 3 or 4 inches of clear space between the stones and the tree, otherwise friction might fatally injure them. In addition to adding momentum to the roots of the tree, the stones preserve moisture and keep out the drought. I have scarcely ever seen a tree fail in producing satisfactory results of growth where stones were judiciously and properly laid over the roots.

The best size of trees for transplanting for immediate effect are those between 20 and 25 feet high, and otherwise proportionable in stem, root, and branch. Trees of this size succeed at least equally well with those which are smaller.

Elm, Lime, Sycamore, Ash, and Oak are the safest species to remove, and the work may safely be carried out any time between October and April, both inclusive, but autumn planting is withal most successful. *C. Y. Michie, Cullen House, Cullen, Feb.* 29.

The Villa Garden.

Town Gardening: Outside Gardening.—In previous papers we have dealt with the contrivances that can be set up on the outside of windows, on leads, and in other suitable places, for the growth of plants. It is almost impossible to specify all the positions in which a few plants can be cultivated if only they have the necessary attention. Let any one walk about London, and note some of these, and he will be both surprised and gratified to find how much of human ingenuity is expended on devising means for the accommodation of a few plants. Rude shelves are put over and at the sides of doorways, and also at the sides of windows, plants are suspended from any available place, and all sorts of homely methods are brought to the service of him or her who is devoted to the culture of some favourite plants. A love for plants, and a desire to grow them, will call into play a remarkable fertility of resource. It is not uncommon to find in unexpected localities houses, the fronts of which illustrate gardens in suspension, and they sometimes excite feelings of contempt on the part of thoughtless persons who are apt to speak of them derisively as examples of "Cockney gardening," but little do they wot of the trouble taken and the labour involved in the construction and disposition of many of the contrivances employed, or the ardour that will not be baffled or defeated. Could those who criticise in hostile manner be placed in the midst of similar unfavourable conditions, the results might not be so assuring.

Area Gardens.—Some very pleasing illustrations of area gardens are frequently to be met with in some of the quieter parts of genteel London, such as are to be found in Paddington, Marylebone, &c. The denizens of the kitchen are in many instances most tasteful gardeners, and must extract a great deal of pleasure from the attempts they make. A Virginian Creeper, Sweet Jasmine, Ivy, or some such creeper, is grown against the wall; there are hardy evergreen plants in pots, such as Rhododendrons, Arbor-vitæs, Euonymus, Aucuba, Box, and other plants of a similar character, on the window-sills, in the corners of the area steps, on rude stands, &c.; and in summer, flowering plants, such as Fuchsias, Pelargoniums, Calceolarias, Hydrangeas, Cytisus, and such like, that can be purchased of the itinerant vendor, mingle pleasant hues with the shades of green. Then from the wall round the sides of the circumscribed area yard, and from the iron support across the top, hang suspended certain plants in pots, some of erect and some of trailing growth. The latter are most abundant, and appear to be best in keeping with the surroundings. As we shall presently treat of hanging plants, there is no necessity to specify them now; but it may be observed that it is a question of attention more than anything else, if the area garden is to maintain a fresh and inviting appearance. On hot, sunny days in summer the heat is intense, and there is always, except the weather is very still, a brisk rush of air, promoting dryness, and carrying deposits of dust, which soon load the leaves of the plants. This makes sprinklings overhead, at least, a daily necessity—better still if they could be administered morning and night, or in early morning and at mid-day. The brightest and most effective area gardens are those which have the best attention in the matter of watering and cleanliness; and not only are these larger attentions scrupulously bestowed on the plants, but the pots also are kept clean, the surface soil stirred and kept free from weeds, top-dressings given, decayed wood cut away, and leaves picked off as they fade. And the regard for plants which works out such cheering results in summer does not slumber during winter, for on inside shelves to areas windows plants are wintered, and so made to do service two or three or more summers in succession. One of the greatest drawbacks to their preservation in this way is the amount of gas burnt in the servant's offices, which sometimes proves very injurious to the plants when placed high up in the windows. The lower they are kept the better they in all probability will be. So long as they can be kept pretty near the light the safest winter quarters is an attic, from which frost can be excluded without necessity for much precaution.

Hanging Plants.—This subject comes as a kind of corollary to the remarks just made respecting area gardens, and what might be appropriately termed suspended gardens. A select but very suitable list of hanging plants suitable for town gardens will be found in the following:—Campanula Barellieri, a perfectly hardy species, of dwarf pendent growth, and producing freely large and bold grey-blue saucer-shaped flowers, and a plant that will bear great exposure to drought without receiving much injury; Campanula fragilis, Campanula garganica, and the dwarf and showy Campanula turbinata; Lysimachia nummularia, the well-known Creeping Jenny, known also as The Wandering Jew—one of the best of drooping plants for growing in London in shady, cool, and confined places, its long slender branches hanging down over the sides of the pot in which it is growing, and being well laden with yellow flowers at the blooming time; Linaria Cymbalaria, the Ivy Toad-flax, known as the Mother of Thousands, because it is constantly throwing out during the growing season a number of small tufts on slender stems that form plants. This thrives well with but little soil about the roots, and indeed in crevices and on ledges in walls, where it soon establishes itself: the flowers are very small, and of a pale lilac colour. Some of the Saxifrages that have a drooping growth also make good hanging plants; among them can be mentioned Saxifraga Fortunei, which has handsome variegated foliage, and it is a plant not requiring a great deal of pot-room, and it will hang down in elegant tufts from the sides thereof. The Rat-tailed Cactus, Cereus flagelliformis, the common trailing Cactus, is one that grows freely in pots, and makes a capital plant for hanging purposes. Several of the hardier Mesembryanthemums—Ice-plants, as they are termed—can also be grown for permanent service; while for flowering in the summer there come in the blue Lobelia, dwarf Nasturtiums, Verbenas, Petunias, and other free-blooming and easily cultivated plants for decorative effect. This list will serve to suggest others, for suitable subjects are all plentiful enough. As a matter of course, whatever may be the position of the hanging-basket, it should be such as to admit of its being readily watered; and if the plants could be occasionally immersed in a vessel containing water, in order to get rid of the deposits of dust, the plants would be much the better for it.

Florists' Flowers.

The Mimulus.—I feel that I am hardly wrong in ranking the Mimulus amongst neglected plants. Probably there are a few persons who cultivate it as a favoured thing, out of which they extract no small amount of pleasure and gratification, but in the mass of gardens it is a plant rarely, if ever, seen, unless we except the old sweet-scented Musk, and even this is seldom cultivated, but only tolerated in deference to the taste of some member of the family. And yet this, if it must be grown as a pyramidal plant in good sized pots, as has been shown frequently in these pages, specimens are obtained with comparative ease that would not only do credit to, but would be viewed with delight at any flower show. The Mimulus might be fairly described as semi-aquatic, for it delights in moisture and a cool place. In its habit of growth it not a little resembles the Watercress, as each new shoot throws out rootlets in search of food and moisture, and if these be fed the plant becomes proportionately robust. Shallow pots or pans are most suitable for their growth, and if these are not to be had ordinary pots stood in shallow-pans will do well. As a rule, however, an abundance of top moisture is of more value than depth of root-room. Good kinds of the Mimulus seed freely, and if seed be sown in a shallow pan on fine sandy soil about the middle of September, and be placed near the light but kept moist by occasional gentle sprinklings with water, the seed will germinate freely, and by Christmas or even earlier, furnish plenty of plants to pot up into small 60's. To keep these robust and dwarf they should still be put on a shelf close to the glass, and if with a northern aspect so much the better. The necessity of want of space has compelled me to place a number of strong plants, now being established in 48's and 32's, out into a frame where they are entirely exposed to the elements except at night, when a covering is placed over them, but there they are doing remarkably well, filling the pots with roots, and making a close short-jointed growth. When warm sunny days come a thin shading will keep them cool, and equally shelter them from white frosts at night. I think the Mimulus, when grown in the open air, is in truth much hardier than is usually admitted. I have plants now growing in an open exposed situation that have vigorous young growth, and yet have been without any protection all the winter. They are, indeed, the remaining stools of the seed-bed plants of last year that the heat did not destroy. Of course a plant that so much delights in moisture finds its greatest enemy in continued heat and drought, and therefore its best blooming period is found in the spring and early summer months, but this may be lengthened by succession if a cool place is available. Plants turned out in May, under the shade of a north wall, will often flower freely all the summer, and in such a situation seed freely. Good kinds—that is, selected seedlings—are easily propagated by cuttings, but a pinch of seed saved from some of the best flowers will be certain to produce an abundance of fine colours. The superb strain that has originated with Mr. Clapham, a Northern amateur, is remarkable for the size and rich markings of the flowers, allied to which is a robust growth and a sturdy constitution, that renders the plants easy of culture by any one who possesses only the most primitive of cultaral conveniences. *A. D.*

Early Single Tulips.—Among purple coloured early single Tulips one, named President Lincoln, is of handsome shape and a fine colour, and altogether a good novelty. What with Molière, Queen of Violets, Proserpine, Van der Neer, Wouverman, and President Lincoln, the Violet Self Tulips are now a valuable group. David Tenniers, a new pure white flower, is highly spoken of, and is said to be of fine build and very pure in colour. Of newer forms of striped and flaked early single Tulips there are Silver Clarimond, red, striped and streaked with silver-white; Golden Clarimond, crimson, striped and flaked with golden-yellow; Ferdinand Bol, violet, finely striped with orange, a variety that has earned a great Continental reputation; Emma Lefevre, clear rose, striped with white; Leonie Van Houtte, carmine striped and marbled with white, extra fine; and Madame Van Houtte, very clear violet, striped with deep violet. There are also some novelties among double Tulips, as, for instance—Agnes, flowers very large and double, and of a lively vermilion hue; Arabella, satiny carmine, one of the earliest to flower; L'Argentine, silver-white, the centre flaked with bright carmine, extra fine; Prince of Wales, large and full, clear red, with white centre; Raphael, soft pale rose, of great size and good substance; Reine des Roses, very pale rose changing almost to white, distinct and good; Rose Blanche, a pure white variety, represented as being more double than the old La Candeur, and a great improvement on it; Triomphe de Bronstée, violet, striped with clear yellow, extra fine; and Violet foncé, a very pleasing hue of violet, and a good acquisition. Probably some of these may be forthcoming at the exhibition of the Royal Horticultural Society on the 15th inst.

Garden Operations.

PLANT HOUSES.

Plant Stove.—The time has now arrived when a considerable increase should be made in the temperature of the stove, with more moisture in the atmosphere as well as at the roots. All potting not yet completed should be finished without delay. Bougainvillea glabra that was started a short time ago and has now broken into growth will be benefited by thinning out all the numerous small shoots in order to send the sap into the strong growths. In the earliest plants the shoots will have made considerable progress, and should be supported in an upright position, with their points erect. If this is not done, their weight and the use of the syringe bends them down, in which case they generally cease to grow further, and do not produce near the quantity of flowers they otherwise would. Allamandas that have made shoots a considerable length without showing bloom should have these at once trained round the trellis, keeping the points down, so as to cause them to break back; they will generally be found to flower sooner from the second growths so made than they would otherwise from the first growth if left to extend. The remainder of the stock of Achimenes and Gloxinias may now be put in; these will succeed the first started plants. The Achimenes first excited into growth will be ready for potting or putting in baskets. If this is not done before the shoots get long, they become drawn, and the bottom leaves suffer from moving. Both these and Gloxinias should be kept close to the glass, for no plants are more completely spoiled by getting drawn through an insufficiency of light than they are. Tuberous-rooted Begonias should now be potted and started in moderate heat: an intermediate temperature, such as that afforded by the front shelf in a succession vinery, will suit these the best. Their natural freedom from insects will cause them not to be objectionable in such a house. Gardenias that were brought into flower early, and have about done blooming, should now be well cut back. Advantage should be taken of the absence of young growth or flower-buds that would suffer from a strong application of Insecticide, to wash them with Abyssinian Mixture, or Fowler's Insecticide, at a strength of 6 oz. to the gallon, getting the mixture into every crevice in the bark where the eggs of the insects are lodged. The washing may with advantage be repeated a second time within a fortnight of the plants being cut back and their breaking into gowth; if thoroughly done by immersion of the heads, or syringing, it will be found more certain in its action than a dozen applications of any of the highly concentrated insecticides that require to be applied to the affected parts of the plants with a small brush, and which, unless persevered with at an expenditure of labour all but impossible where anything above a very limited collection are grown, can never be effectual. Twining plants, such as Dipladenias and Stephanotis, should have their shoots regulated as they advance. Stephanotis ought if possible to be grown where there is a drier atmosphere and a somewhat lower temperature than the hottest stove plants require. The species and varieties of Dipladenia are the most impatient plants in existence of over-watering at the roots, especially early in the season; they should never have water given them until the soil is much drier than any other stove plants, requiring to be as dry before it is applied as a hard-wooded Heath. This will also point to the necessity of the drainage being efficient, and the soil as porous as it is possible to get it; they must, nevertheless, be potted firmly, not allowing the soil to be at all loose; inattention to these matters is the cause of so many failures in the cultivation of these fine plants. Medinillas now showing bloom should be brought up to the glass and well supplied with water at the roots, their ample foliage and quick-growing, massive flowers requiring plenty of sustenance. Weak applications of manure-water to them at this stage will be beneficial; they should not be much syringed overhead as the flowers are advancing, as if too much water lodges upon the young panicles of bloom it is liable to make their flower-buds fall off before they expand. Rondeletias that have been kept cool through the winter, and are wanted to flower in July, should now be cut-in and placed in the stove; these are most useful plants for decoration or furnishing cut flowers for summer, when many of the earlier blooming subjects are over. *T. Baines.*

Orchids.—Whilst it is necessary during the season of growth to give the majority of the Dendrobiums a good amount of heat, there are several that if subjected to a high range of temperature will gradually become smaller, and in the course of a season or two be lost altogether—the reason of which is this, that the plants, being continually in a state of activity, induced by the heat and moisture, have little time to harden and mature the bulbs as they are formed, and so being, as it were, robbed of rest, the growths as they succeed each other become gradually less in size and vigour, the old bulbs die off, and the new ones, having little stability about them, soon follow. Notably among this class may be mentioned D. infundibulum and Jamesianum, both most beautiful forms of the hirsute section of this desirable genus. The flowers are large and of good substance, the sepals and petals in both cases being of a pure white, and whilst the throat of the former is of a bright yellow that of the latter is of a deep orange colour. These will be found to succeed best in the Cattleya-house, and should be grown on blocks or in baskets, for the roots like to push to the outside, and get exposed to the air. This being the case, they should be well supplied with water by dipping and syringing, and the atmosphere should be well charged with moisture whilst the plants are in a growing state. Hung near the glass the bulbs formed will be stout and hard, and now on the new growths, as well as on the old bulbs, the flower-buds will be showing, and will ere long add to the gaiety of the houses. The individual blooms will remain fresh and showy for eight or nine weeks, on which account they are deserving of all the extra care and attention that is bestowed upon them. Where a number of plants of D. nobile are grown for keeping up a succession of bloom during the winter months, it will be found that the best way to manage the earliest ones will be to grow them in baskets. Some of these may be had in bloom by Christmas, and others succeeding them up till May and June, though these later ones are best grown in pots: they can then be retarded much better than when hung up near the glass. Those that have already bloomed, and been fresh basketed or surfaced according as they required it, must now be hung up in the East India and Dendrobium houses, and induced to make growth as vigorous as possible, so that they may be rested and ripened in the early autumn in a vinery or Peach-house, and thus come naturally into a flowering state by Christmas again. Another attractive plant, though seldom seen nowadays, is Camarotis purpurea. When well grown this is very pretty, its spikes of small rose-coloured flowers marking it out as at once singular and interesting. This should be grown in a pot, and will be found to succeed best in a quiet corner of the East India-house, where the moisture from the repeated syringings, which are necessary on account of the great number of small aërial roots the plant throws out, may not be quickly dried up. In such a place it will grow and flower freely during April and May, and amply repay the extra care that is given to it. See that the moisture and the temperature in all the houses are carefully regulated. Avoid extremes of either, and when, as now, the weather is so changeable, keep the fires well in hand, so that, should a sudden fall of the temperature out-of-doors occur, it may not act injuriously upon the plants inside by finding the fires low and the houses run down lower than is advisable, keeping in view the figures given in the last Calendar. *W. Swan, Fallowfield.*

FRUIT HOUSES.

Orchard Houses.—The early forced trees will now want daily attention in syringing them, and at times thinning any shoots too thickly placed, but the thinning of the fruit set must be left in order to see how many are likely to drop off while immature. When young Vines have been grown in pots with the other trees, as soon as they come into bloom the temperature of the house must be raised higher to set the fruit, and artificial impregnation of the bunches must be resorted to with the shy setting kinds. The firing and air-giving in the changeable weather now prevailing will have to be carefully regulated, for more will depend on the time of giving air than on its quantity, and all strong draughts should be avoided when opening the ventilators. If the sun's heat is likely to be strong after a frosty morning, it is better to let the heating apparatus become rather cool, and to shut off the ventilation rather early in the afternoon, so as to economise the heat. In unheated houses still keep the ventilators open day and night as far as can be done with safety as respects strong cold N.E winds or frost, so as to retard the trees as long as possible. After clear frosty mornings strong sunshine generally prevails, and the trees will soon get excited to swell their buds, and some shading of the house then in the daytime will do good by helping to keep the blooming period back. We have in some years lately had sharp nights in March, and even in April; and then by early shutting up instead of leaving air on at night, a state of temperature may be secured that will keep the trees safe. The Peach and Nectarine, and more especially the Apricot when in bloom, will withstand some degrees of frost safely if the atmosphere is dry and still. At this period no repotting of fruit trees should be attempted if a crop of fruit is desired; it should be deferred till all the fruit is gathered in the autumn. Top-dressing the surface of the pots with some rich compost, with a rim of sods to keep the soil in its place, will, however, be desirable in the case of trees in small pots, until they can be shifted into larger ones at the proper season. *William Tillery, Welbeck.*

Melons.—The earliest plants, particularly those grown in pots plunged in sharp bottom-heat, will now be making vigorous growth, and the chief points in their management will comprise attention to ventilation, syringing, and watering. Some varieties, when the roots are restricted, throw out side shoots, and show plenty of fruit before the vines have covered the allotted space. Where this is the case, and very early Melons are the object, the points should be pinched out of the leaders to throw increased strength into the laterals, when male and female blossoms will soon begin to open. The atmosphere should then be kept somewhat drier. Syringing of these plants may be discontinued for a few days, water withheld from the roots, and all female blossoms fertilised daily until the young fruit begins to swell. A good set having been secured, stop at the first or second joint beyond the fruit. Mulch with good rotten dung, and apply liquid manure 10° warmer than the house, which must not be allowed to fall below 70° at night, with a rise of 10° to 15° by day. Make sowings once a fortnight, according to the requirements of the place, as young stock raised at this season is preferable to old plants which have become pothound. *W. Coleman, Eastnor.*

Figs.—By no means suffer the growths of these trees to be crowded thickly together, especially in glass structures, as every atom of sunshine is most beneficial in regard to both wood and fruit. In early started houses disbudding and stopping will now need attention, and should be carried out before the growths become robust. Rub off all superfluous shoots where they are thickly placed or not required, and stop those which are to form spurs at about the fifth joint, and let the terminals make a good run before stopping them if the space of trellis will admit. Now growth is more active see that the roots have an abundant supply of tepid water whenever necessary, and keep the mulching materials on the surface of the border constantly moist. Maintain a mean of about 60° at night and 65° in the daytime, slightly ventilate at 65°, and do it liberally both at the front and top of the house whenever favourable weather exists, finally closing the house for the day at from 65° to 70°. Although Fig trees will luxuriate in a confined atmosphere, still such a condition should be avoided, as tending to promote an elongated and watery state of growth. These conditions also apply to more advanced trees. If they be in pots more attention must be given to the watering, and under such conditions weak manure-water should be used in this operation on every occasion. *G. T. Miles, Wycombe Abbey.*

HARDY FRUIT GARDEN.

Although as a general rule it is not desirable that gardeners should be called upon to practise the art of grafting for the purpose of propagation, as it takes up valuable time which at that busy season can be much more economically employed, yet there are instances in which it becomes desirable to graft new and improved varieties into old trees, which is an excellent practice, and brings them into a profitable bearing state long before it can be done by planting young trees. Preparations for the same should be commenced at once by cutting off shoots of the desired sorts, and inserting them in the soil under a north wall. This will retain their vitality, and prevent shrivelling, thus bringing them into the state best fitted to enable them to absorb the free flow of sap from the stock. The grafting should be performed as soon as the sap is in free motion—generally about the first week in April; but it may be done much later if the scions have been kept dormant. All arrears of pruning and nailing of wall trees should be caught up as soon as possible, and protection applied to the Peach trees in bloom. Pyramid Pears and Apples should be finished off as soon as possible. In most localities Figs, if not already done, may be uncovered and fastened to the wall, remembering former remarks about knife-work, of which they are very impatient.

The time is now rapidly approaching when the Strawberry plants which were especially prepared in the autumn for planting in March, should be transferred to their permanent quarters. If a choice of soil is available the stiffest that can be selected is the best, and all who have very light soils to deal with will find it good practice to mix up with them a good proportion of clay. The beds should be well prepared by previous trenching, and as soon as the weather is suitable the plants should be lifted, with a good ball, and planted firmly in their positions, keeping the crown well above the surface. With regard to distance opinions vary, and much depends on the space at command and the requirements; as a rule which answers well under most circumstances I give as the most economical: rows 3 feet apart, plants 18 inches apart in the row, which gives good space for the gathering of the fruit without injury by trampling. Old beds of Strawberries should at this season be thoroughly cleaned and dressed, the surface stirred for about an inch in depth, and a covering laid on of well-decayed stable manure. It is good practice, if the crowns are very much crowded, to thin them out, taking care to retain all the strongest. *J. Cox, Redleaf.*

HORTICULTURAL EXHIBITIONS, 1876.

MARCH.

22 and 23.—Bristol, West of England, and South Wales Chrysanthemum Society. Spring Show.
29.—Royal Botanic Society, Regent's Park. Spring Show.
29.—Glasgow and West of Scotland Horticultural Society. Spring Show.

APRIL.

5.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees
5.—Royal Caledonian Horticultural Society. Spring Show.
12 and 13.—Royal Aquarium and Summer and Winter Garden. Flower Show.
19.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.

THE

Gardeners' Chronicle.

SATURDAY, MARCH 11, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	March 13	Sale of the Lease of Videon's Nursery, Maida Vale, St. John's Wood, by Protheroe & Morris. Sale of Orchids, at Stevens' Rooms.
TUESDAY,	March 14	Sale of Wright's Mill Hill Nursery, by Protheroe & Morris. Manchester Botanical and Horticultural Society's Floral Meeting, at the Town Hall.
WEDNESDAY,	Mar. 15	Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M. Horticultural Society of Liverpool. Show of Hyacinths and Spring Flowers. Leeds Horticultural Society's Spring Show (two days). Royal Agricultural and Horticultural Society of Jersey: Extra Spring Show
THURSDAY,	March 16	Sale of Established Orchids, at Stevens' Rooms.
FRIDAY,	March 17	Sale of the Lease, Stock, &c., of the Stone Grove Nursery, Edgware, by Protheroe & Morris.
SATURDAY,	March 18	Sale of Stove and Greenhouse Plants, at Stevens' Rooms.

IN an address presented to the botanical and horticultural section of the *Schlesiche Gesellschaft fur Vaterländische Kultur*, Dr. GŒPPERT deals with the question of SCIENTIFIC GARDENING as opposed to the empirical practices of the present day. He contends that, notwithstanding their great cultural successes, our gardeners are still groping in the dark, and working without any rational method. There is, doubtless, some truth in this assertion, but we do not think that gardening as a science is so much behind farming that the latter can be held up as a pattern to the former, as Dr. GŒPPERT pretends. Certainly, if we confine ourselves to the fact that thousands of chemical analyses have been made for agricultural purposes, and a variety of artificial manures manufactured for different crops, the farmers have the best of it; for scarcely a single analysis has been made with a view to the promotion of horticulture. But we venture to assert, in spite of the discoveries of LIEBIG and others, and the lessons taught by an experimental farm, such as that conducted at so much expense on Mr. LAWES' estate at Rothamsted, that, from a practical point of view, agricultural chemistry is still in its infancy. From this point of view, too, it is of little use to know the mineral constituents of the ash of different cultivated plants, unless at the same time we know how to administer them in a form that the plant can take up, and at an outlay that will prove more remunerative than the old style of doing things by rote. Of course, this does not affect the main question; and it is too true that very little is known of the chemical composition of plants beyond those cultivated on a large scale in the fields. What interesting results such investigations are likely to furnish may be gathered from the revelations of Professor CHURCH's analysis of the Lycopodiums. But in practical gardening it is really of more importance to know whether a plant is rupestral, paludal, aquatic, maritime, &c., and what are the climatal characters of the habitat, than it is to know its chemical constituents, because, after all, plants are much better able to find what they need in a soil than they are to accommodate themselves to different climatal and other conditions. Therefore, for practical purposes, we say that physiology is of greater importance than chemistry, though we do not underrate the value of the latter. As a rule, when a gardener fails to grow a plant successfully, it is because the conditions of moisture and heat are at fault. Applying the same test to the kitchen garden, it seems doubtful, seeing how little has been done for field crops, whether, when we know what kind of food a plant requires, we shall be able to supply it in a more convenient and cheaper form than at present. How far stable and farmyard manuring is wasteful can only be estimated in practice by relative cost.

It will be understood that we are not combatting Dr. GŒPPERT'S statements respecting the little real science brought to bear upon horticultural operations, but we simply express our opinion that the possession of chemical knowledge would not prevent "the loss of half of the new introductions in about five or six years." The chief causes must be sought elsewhere. Fashion on the one hand, and carelessness and incompetency on the other, will account for the disappearance of a large proportion. But apart from the possible gain that might accrue from a more intimate knowledge of the chemical composition of plants and their fruits, it is highly desirable that this branch of research should receive more attention. There is, indeed, a vast field open to the young chemist. Dr. GŒPPERT states that among all the fruits cultivated he knows where to turn for an analysis of the Apple only! Here is an opportunity for an aspiring young chemist to distinguish himself.

We can scarcely agree with Dr. GŒPPERT that the hard-wooded Australian and South African plants are disappearing from our gardens, because as they get older they are less able to withstand the uncongenial conditions of soil to which they are subjected; but at the same time we are ready to admit that few would venture to assert that the soil we give them is identical with what they get at home in their native habitats. Perhaps it is true that there are fewer gardeners now who understand the culture of hard-wooded plants as it was carried out in this country some years ago. Moreover it is a well-known fact that the gardener is oftener at fault than the soil. In conclusion, we can only repeat that science and practice should go hand in hand. Let us have both—but especially practice—combined with intelligence.

—— THE lake of COMO, from which our illustration (fig. 60, p. 337) is taken, is one of those beautiful subalpine Italian lakes which form such a contrast in their soft loveliness to the grand wildness of the scenery on the northern side of the Alps. Mild winters, early springs, and warm summers are the chief climatal characteristics of this district. It owes its immunity to the protection afforded from north winds by the mountain wall of the Alps, hence many plants thrive, such as Dracænas, Chamærops, Agave, Lemon, Eucalyptus, various Bamboos, here in the open air, which cannot bear exposure even many degrees south of this spot. As a matter of horticultural interest, it may be stated that Como and its neighbourhood are the sources whence a large proportion of the Camellias which are to be found in Belgium and in this country have originated. Azaleas also flourish here in a manner impossible to describe. At the Villa Carlotta at Cadenabbia, opposite Bellagio—perhaps the most beautiful spot in this most lovely of lakes—and indeed at dozens of other villas in the neighbourhood, these plants thrive and blossom in a manner to make those accustomed to the crinoline specimens at our flower shows gnash their teeth.

—— We may again remind our readers that the members and friends of the LINDLEY CLUB will dine together at St. James' Hall, Regent Street, at 6 P.M. on Wednesday next. Mr. SHIRLEY HIBBERD will take the chair, and Mr. A. F. BARRON will be the specially invited guest of the Club on that occasion. The objects of the invitation given to Mr. BARRON by the committee are:—First, the recognition of the great services he has rendered to practical horticulture during the time he has filled the post of Superintendent of the Chiswick Gardens; and, secondly, to congratulate him on his recovery from a recent severe illness. Mr. BARRON is held in such universal esteem amongst horticulturists that we expect this will be an occasion of great interest; and those who intend to be present should communicate at once with the Secretary, Mr. RICHARD DEAN, Ranelagh Road, Ealing.

—— From July 16 to 27, during the meeting of the Swiss Rifle Association, a great HORTICULTURAL EXHIBITION will be held at LAUSANNE. The competitions are divided into groups:—1, plants tender and hardy; 2, products of plants, fruits, vegetables, &c.; 3, garden architecture; 4, garden decorations; 5, garden implements; 6, collections of insects useful and noxious; 7, garden literature. The Secretary is M. AUG. MORAZ, Lausanne.

—— The seldom frequented KERGUELEN ISLAND has, during the late English Transit of Venus Expedition, had its botanical treasures well hunted out by the Rev. A. E. EATON. The Lichens collected by him have already been well worked out by the Rev. J. M. CROMBIE, F.L.S., and at the Linnean Society, March 2, two further additions to the flora were made. Professor DICKIE contributed a paper on the Algæ, in which he remarked that of a total of sixty-five species obtained, sixteen belong to the Olive, thirty-four to the red, and fifteen to the green series; nine species are peculiar to the island, and twenty-one of European distribution. W. MITTEN, Esq., F.L.S., has furnished a list of the Mosses and Liverworts, whereof thirty-eight of the former and thirteen of the latter are recorded; several are new to science.

—— The *American Agriculturist* reminds us that the DOUBLE POINSETTIA was first figured in that periodical in 1873, having been secured to cultivation through the enterprise of "our veteran horticulturist, J. BUCHANAN, Esq." We do not own that the cap fits, or that we are among those "British friends who have a remarkable capacity for ignoring things that happen elsewhere;" nevertheless we admit the oversight in this particular case.

—— According to some recent observations of M. HECKEL, published in the *Comptes Rendus*, the glands of the flowers of PARNASSIA have a digestive property like that of the leaves of Drosera.

—— The second meeting of THE WIMBLEDON GARDENERS' SOCIETY was held on Wednesday evening, March 1, Mr. JAMES OLLERHEAD, the originator of the Society, being in the chair. Sixty-six members and friends were present. The Chairman announced that the prospects of the Society were very encouraging, and the result of the appeal for subscriptions had been so far successful that a sum of over £40 had been collected, and he believed this sum would be considerably increased. Several gentlemen had also made contributions of useful books. The Chairman further stated that Mr. SHIRLEY HIBBERD, who had expressed his intention to attend the meeting, had written to say that he would be unable to attend. It had previously been arranged that he (Mr. OLLERHEAD) should read a paper at this meeting, but on account of the probably long discussion on Mr. SHIRLEY HIBBERD'S recent lecture, he withdrew his paper until the next meeting. Mr. MOORMAN then read the lecture given by Mr. SHIRLEY HIBBERD on the "Fallacies of Fruit Culture," as reported in the gardening papers, and expressed his own views, which were at variance with those of the lecturer, but at the same time he admitted that under certain circumstances of soil, situation, or variety, it might be well to adopt Mr. HIBBERD'S plan. Mr. DENNING (gardener to Lord LONDESBOROUGH) supported the views advanced by Mr. HIBBERD, and handed round specimen branches of Apple, Pear, Plum, and Cherry trees which had never been subjected to the knife, and which were thickly covered with flower-buds. Mr. TURNER also supported Mr. HIBBERD. Mr. LYNE considered that if the quality of fruit was a consideration, pruning was absolutely necessary, and

Fig. 60.—Scene on the Lake of Como.

he would like to know what the appearance of trees treated conformably to Mr. HIBBERD's ideas would be after some ten or twelve years' growth, and what their fruit would be like. Mr. ANSELL had seen trees which had not been pruned for twenty-five years; the fruit was so fine as to be scarcely visible, and the trees looked like overgrown rooks' nests. After several other gentlemen had discussed the subject *pro* and *con*, Mr. ROSER humorously said that the plan advocated in the lecture might be a very good one to adopt if a garden as extensive as Salisbury Plain were at every one's command, but with the limited gardens to be found near London it would be quite out of the question. The general expression of opinion seemed to be that pruning was an absolute necessity, but that it must be left to each one's discretion whether it should be slight or severe. A model Peach garden furnished with Mr. SHIRLEY HIBBERD'S reversible walls was exhibited, and attracted considerable attention. Votes of thanks to Mr. HIBBERD for his model, and to the Chairman, brought a very interesting meeting to a close. At the next meeting (Wednesday, March 8) Mr. OLLERHEAD will read a paper on the culture of Azalea indica, and Mr. JORDAN one on the culture of Eucharis amazonica.

—— MATHURINA is the technical name given to a tree in a paper read before the Linnean Society, March 2, by J. B. BALFOUR, D.Sc., F.L.S., and entitled, "On a New Genus of Turneraceæ from Rodriguez." The tree in question is known to the inhabitants of the island by the name of "Bois Gaudine." It grows chiefly on the high lands, seldom being found on the low grounds or near the sea. It is small but handsome, with an erect habit, and terminal branches clothed with a light green foliage. It possesses a light coloured fine-grained wood, but which does not seem to be much employed for economical purposes. MATHURINA is not only interesting from its limited habitat, but also from the fact that its apparent nearest ally is a form belonging to the Isthmus of Panama. This, its closest relation, is the genus Erblicia; whereas Wormskioldia, a chiefly African genus, and Turnera, an American genus, are obviously further removed. From the recent researches of Mr. BALFOUR, and a summary of his collection made by Mr. J. G. BAKER, of Kew, it is found that the flora of Rodriguez belongs rather to the temperate regions than to the tropical in character, as the position of the island would lead one naturally to assume.

—— Mr. M. P. EDGEWORTH laid before the Linnean Society, at its meeting on the 2d inst., a paper treating of the shape and relative size of the POLLEN GRAINS in many orders of plants. He finds some families of plants present great uniformity in the figure and size of their pollen, but diversely other species closely related have pollen markedly different the one from the other. Some 400 species have been carefully investigated, and drawings to scale made of their pollen and its features under different reagents.

—— Fellows of the Linnnean Society of some few years' standing will regret to hear of the death of Mr. J. J. BENNETT at an advanced age. Mr. BENNETT was for many years the assistant of the late ROBERT BROWN, and, on the decease of the *princeps botanicorum*, succeeded to his position as keeper of the botanical department of the British Museum. Mr. BENNETT was by no means a voluminous writer, and is probably better known to many of his survivors as the Secretary to the Linnean Society, than as a botanical authority. His devotion to the interests of the Society, his uniform courtesy and simplicity of manner, endeared him to all who were in any way connected with him. Mr. BENNETT took great interest in the Botanical Congress of 1866, of which he was one of the organisers. Mr. BENNETT retired some years since from his appointment at the British Museum, in which he has been succeeded by Mr. CARRUTHERS.

—— From the speech of M. HENRY VILMORIN, at the inauguration of the monument at Père la Chaise to the late PIERRE BARILLET, and reported in the *Revue Horticole*, we learn that this distinguished gardener, who did so much to sweeten and embellish Paris, gained his first practical experience at Mettray, where he was employed on the staff. Mettray is one of those establishments which do honour to humanity by reclaiming every year hundreds of lads who otherwise would be destined to a life of misery and vice. BARILLET began well here by setting on foot instruction in gardening, which has ever since been productive of good results. From Mettray BARILLET went to Bordeaux, where his talents as a landscape gardener first attracted notice, and led to his employment in the great works undertaken in Paris, and of which so magnificent a record is to be found in the *Parcs, Promenades et Jardins de Paris*, published by M. ROTHSCHILD. His work in Paris was succeeded by invitations to Belgium, to Vienna, and ultimately to Egypt. The monument was erected by M. BARILLET'S numerous friends. It is needless to say that M. VILMORIN'S address, couched in elegant language and in admirable taste, fitly represented the feelings of those who knew and enjoyed the friendship of M. BARILLET.

—— Mr. J. W. A. WRIGHT, a deputy of the NATIONAL GRANGE OF AMERICA is now in this country with a view of explaining the objects of the Institution, and establishing subsidiary branches in this country. The object of the Grange appears to be to organise the farmers and all who live by the soil, into one huge organisation, on the pattern of the Masons and other similar bodies. By so doing, harmony and co-operation, practical as well as sentimental, will, it is hoped, be promoted. One great object is to bring producers and consumers together, without the intervention of middlemen. Political and religious questions are not entertained, the object being to secure as many points of agreement and as few sources of discord as possible. Letters for Mr. WRIGHT may be addressed to the *Agricultural Gazette* Office, 7, Catherine Street, Strand, W.C.

—— The *Revue Horticole* contains an obituary notice of M. PÉPIN, known to many of our readers from his long connection with the Jardin des Plantes in Paris. M. PÉPIN had a wide knowledge of plants, and was an industrious writer in the horticultural journals. M. PÉPIN was one of our guests in 1866, but rarely visited this country.

—— We learn from the *Hamburger Gartenzeitung* that the FABRICATION OF FLOWER-POTS from a mixture of cow-dung and earth is now extensively practised in North Germany. As many as 16,000 were used last year in one establishment. For forcing they are highly recommended, though they will not bear plunging in a hot-bed; and they are admirably adapted for nursery work, for plants raised in pots and afterwards turned out, in this case pot and all. Even standing dry the roots of plants will penetrate the sides of the pot, and extract some nourishment from them. They are made by machinery, and one man can make from 700 to 900, or even 1000, in ten working hours. There are machines for three sizes—2 inches by 2 (price 8*s*.), 2¾ inches broad by 2¼ high (price 10*s*.). Since the first introduction of these pots by Mr. MACIVOR some years ago we have heard little of their use in this country.

—— The *Times* correspondent at Paris writes:—"The PHYLLOXERA COMMISSION has reported that none of the specifics submitted to them are entitled to the prize of 300,000 fr. voted by the Assembly. They state that, by applying insecticides to the stock and roots between February 1 and April 1 the Vines may be protected from the disease, and they recommend the formation of committees in each Department to furnish advice and assistance to the Vine growers. The Minister of Agriculture has accordingly addressed a circular to the Préfets, directing them to confer with the agricultural societies in order to carry out this recommendation.

—— Mr. CARRUTHERS, at the Linnean Society on March 2, in exhibiting Professor DE BARY'S preparations, briefly stated the opinions arrived at by this distinguished botanist on the subject of the POTATO FUNGUS. The parasitic fungi, Peronosporeæ, DE BARY now proposes to divide into three genera. In Cystopus the conidiophores grow in large bunches, the conidia, or bud-cells, being developed in single rows in basipetal order. In Peronospora, from a tree-like mycelium conidiophores arise singly or in small bunches at the end of the branches, and have no successors in the direct line. Phytophthora, to which the Potato fungus is referred, differs from the last in its multiple and successive conidia, which, when shed, leave swellings on the branches. The ripe conidia in all, when placed in water, produce zoospores or nucleate movable cells provided with cilia. These penetrate the plants, and, ceasing to move, develope threads or mycelium. By another sexual method of propagation the oogonia, bladder-shaped female cells, after being fertilised by the small male cells, antheridia, produce from their protoplasm a thick-walled oospore. Mycelial threads sprout from this latter, and the above process is repeated. A considerable period of inactivity may, however, precede the germination of the oospore, which in this case hibernates for the winter, whilst its host decays. The conidia, DE BARY states, propagate and spread the fungus during the summer season only, but do not live through the winter. He has, moreover, found in decayed Potato tubers bodies exactly corresponding to oospores. On experimenting with the oogonia of these, and planting them in Potatos, he obtained minute plants which conducted themselves precisely like zoospores, and in most respects resembled those of Pythium. Other experiments with them, on the moistened legs of dead flies and bodies of mites, resulted in their complete phases of development, which was watched step by step, the zoospores producing a plentiful crop of mycelium, &c. As this new fungus in many ways differs from the Phytophthora infestans, he names it Pythium vexans, on account of his trouble therewith. He regards it as a true Saprolegniea. The fungus named by MONTAGNE Artotrogus, and the warty bodies connected therewith, he is inclined to believe are two forms of fungi locally associated but neither clearly determined. He questions Mr. SMITH'S interpretations and conclusions as to the precise relation of the mycelial threads, reproductive organs, and resting-spore of his Peronospora infestans. Professor DE BARY has likewise investigated the question of the perennial mycelium of Phytophthora occasionally discharging the function of hibernation where the oospores are not found in the district. He believes he has established by proofs that there are two methods by which the conidia may pass from the tuber to the foliage. From this and the foregoing facts he seems to think answers to the questions are truly given, as to the why and wherefore of the peculiarities of this terrible scourge—the Potato blight. Prof. DE BARY'S views are not, however, likely to pass unchallenged, unless it can be proved that Mr. SMITH'S drawings are incorrect.

CLASSIFICATION OF PLANTS.

[THE following is an abstract of Mr. W. T. Thiselton Dyer's last lecture at the Royal Institution: see *ante*, pp. 236, 278, 298.]

THE Cormophyta, as already pointed out, may be arranged in three series, according to the relation of the oophore and sporophore.

In the Bryophyta the oophore is a leafy structure, and this is obviously comparable with the whole plant of a Chara which bears the organs of reproduction.

From the fertilised oosphere of the Bryophyta, as is well known, the peculiar cellular body arises which is called the Moss-fruit. This is an organism of a distinct generation from the Moss-plant, and is, in fact, the sporophore. In the Bryophyta, therefore, the vegetative development of the oophore is very considerable, that of the sporophore very small.

In the series of Pteridophyta exactly the opposite is the case; the oophore (or prothallium) is a relatively inconsiderable and often very inconspicuous structure; the sporophore is the leafy plant.

The two generations were first made out in the Ferns. Morison found (1715) that it was possible to raise plants from spores, and Dr. Lindsay (1789) repeated the experiment. It was not, however, till 1844 that Nægeli discovered the antherozoids, while two years later, in 1846, Suminski completed the history by discovering the archegonia.

Pteridophyta fall into three classes:—

1. Filicales have highly developed leaves, which bear numerous sporangia. Besides ordinary Ferns, they appear to also include Rhizocarpeæ, the curious fruit-like bodies of which are probably formed like the polycarpellary ovaries of flowering plants, by the cohesion of several foliar organs, which bear the sporangia on placenta-like projections. The mode of development of their leaves also appears to be in accordance with that of Ferns; and this and other important—though not at first sight striking—marks of affinity appear to justify their being arranged in the same assemblage with Ferns.

2. Equisetaceæ stand alone, on account of the great peculiarity of their vegetative organs. They are distinguished at once from Ferns, by having only rudimentary leaves, which on the barren stems are reduced to mere sheaths. On the fertile stems the foliar organs of the upper portion are arranged in a kind of cone, each of the shield-like scales of which bear 5—10 sporangia.

3. Dichotomæ.—In this class the leaves are small and simple, and the sporangia solitary. It contains two groups—the Lycopodiaceæ and the Ligulatæ of which Selaginella may be taken as the type. The important discovery of Fankhauser shows that the spores of Lycopodium develope an underground prothallus like that of Ophioglossum.

In Selaginella, as is well known, the spores are of two kinds. The small spores have only an extremely rudimentary prothallium, and produce antherozoids; the large spores develope a prothallium, which, however, is always partially enclosed in the cavity of the spore which ruptures to allow the access of the antherozoids to the archegonia.

So far, then, we see that the oophore has progressively lost its independent status. From a leafy plant in the Bryophyta it was reduced to a thalloid expansion in the Ferns, and now in Selaginella it is a cellular growth which only partially extrudes from the parent spore.

In the series of Phanerogamæ it is completely enclosed within the sporophore. Here we have a peculiar body called the ovule, which in a sense is comparable to the sporangium of Selaginella, while a cell of the ovule, called the embryo-sac, is comparable to a macrospore. The cellular endosperm which fills the macrospore is the homologue of a prothallium. In Gymnosperms this is fully developed, while in Angiosperms it is reduced to a mere rudiment—the so-called "antipodal cells."

The archegonium of Selaginella is represented in Gymnosperms by its central cell — the so-called secondary embryo-sac; this is surmounted by a "rosette" of four cells, which is all that remains of the neck of the archegonium. In Angiosperms a still greater simplification is effected, and nothing of the archegonium survives but the oosphere, a naked mass of protoplasm forming the embryo-vesicle, and which has sometimes in addition a subsidiary protoplasmic body representing the cell which occupies the neck of the archegonium, and which perhaps transmits the fertilising influence of the antherozoids—in this case of the pollen-tube—to the oosphere.

At this point the lecturer reached the conclusion of the task which he had proposed to himself. He believed he had shown the existence throughout the vegetable kingdom of structural relations which were in the highest degree significant from the point of view of the Doctrine of Descent, and had little meaning on any other hypothesis. To work out the pedigree of the vegetable kingdom in complete detail was not a task which could yet be accomplished. But the main lines had been laid down, and now that investigation was undertaken with a definite object in view, every addition to our general knowledge of plant structure would also be something gained for the determination of their phylogenetic arrangement.

Home Correspondence.

A Bouquet of February Flowers from the Spring Garden.—The little periods of severe frost this winter have in each instance, in this neighbourhood, been attended, or preceded, by falls of snow, which have given the best and most natural protection to the various plants that occupy the garden for early spring decoration. Alpine and herbaceous plants have a vigorous and healthy appearance, and promise a brilliant display of bloom. In the last week in February, Anemone apennina blanda was in full beauty. This variety, introduced by Messrs. Backhouse, is deeper in colour, its blue being more intense, and it is earlier and more free flowering than the older A. apennina. More strikingly beautiful than any other plant of the season is Iris reticulata, which has already produced in abundance its rich clusters of charming blossoms. The Primrose known in gardens as P. altaica has accompanied the flowers I have previously named in their period of blossoming; it is the best of the very early Primroses, and gives a shade of colour that is particularly valuable. Crocus Imperati and C. Sieberi also appeared in February; they are veritable gems. Scilla bifolia was tempted to expand its brilliant little blue star-like flowers by the warm days at the end of the month. The Hellebores have escaped injury from frost, and are in full bloom. A very early, large-leaved Saxifraga, S. ciliaris præcox? sent to me by Miss Hope, is for the earliest display very valuable, but a tuft of the new Saxifraga Burseriana has eclipsed in delicate and refined beauty all others of its diminutive tribe. Rhododendron dauricum also blossomed in February, also some plants in warm situations of R. præcox superbum, an early gem; the same may be said of Erica carnea. Violets, protected by snow, fed by copious rains and courted by gleams of sun, have blossomed more abundantly than usual; the beds and banks are absolutely blue with them, and the Czar is and has been pre-eminent, and worthy of its name. Less conspicuous but more perfect in form, Victoria regina deserves to be mentioned; and while mentioning early blooming and sweet flowers I must not omit Lonicera fragrantissima, which has a fragrance almost rivalling that of the Orange, and sends out its tiny blossoms to meet the first promise of spring. *W. Ingram, Belvoir, Feb. 29.*

Romneya Coulteri.—From more recent trials with the seeds of this beautiful plant, it has been found that its principle of vitality (previous to germination) is dormant much in the same way as that of Primula japonica and some others, in which the immersion of the seeds in soil and seclusion from light appears more or less essential to enable the vital germ to burst the outer cuticle or coat. Of seeds sown and placed upon a cool surface in a warm greenhouse in May, 1875, several hundreds germinated in January of the present year, and from others sown in November, 1875, a partial crop has already been potted off. These results show the importance of carefully retaining the seed-pans for some considerable time after the first germination has taken place, until the after-crops of young plants have been secured. Romneya Coulteri in its mature growth is no doubt a most noble flowering plant in its group, and may remind one of the stately and magnificent Papaver bracteatum in the same order, save in the distinction of bloom, which in our present plant is larger than in any other known of the same colour, being pure white, and fragrant. *E. G. Henderson & Son.*

The Phylloxera at Gunnersbury.—As one largely interested in Grape cultivation I beg to endorse the recommendation made at the late meeting of the Scientific Committee of the Horticultural Society, founded as it was on the experience of practical Grape growers, that the only safe way of dealing with the above pest is to "stamp it out," and I would go the length of endeavouring to obtain a legal enactment which would make this compulsory, and its non-fulfilment punishable as in the case of the "Rinderpest" amongst cattle. To attempt to get rid of it by the laborious scrubbing and washing which proved successful in Mr. Dunn's case at Powerscourt is at best a very uncertain method of dealing with it, and should never be risked when we live in an age when a vinery can be built, and a crop of Grapes from pot Vines produced in it the same year, and from Vines planted out the second year; and this is more than can be expected from old Vines that have been lifted, and pared, and scraped to within an inch of their life. It may be very interesting to all who make the study of entomology a hobby to know from Mr. McLachlan that this vile insect at Gunnersbury is a "hybernating larva of the leaf-gall form," but I am certain it would be much more pleasant for all who have vineries in the same locality to learn that Vines and insects were reduced to ashes, the walls of the vinery washed with hot lime-wash, the wood painted, borders removed, new soil substituted, and new Vines planted. If this course were pursued in every case where it makes its appearance, and the source from which it was derived pointed out as a warning to others, it would in twelve months be banished from the country. From what Mr. McKellar writes, it does not appear clear whether the Phylloxera ever was at Elvaston, or if it was, how it was got rid of. Perhaps he will give farther information on the subject. If it ever was there, which seems doubtful, it appears to have vanished of its own accord, which, from all I have previously read or heard of it, does not seem to be its habit, as long as there are Vines to prey upon. *W. Thomson, Clovenfords.* [Mr. Dunn himself now advocates the stamping-out plan as the only one practically useful. Eds.]

Spring Flowers.—I suppose when Mr. Barr speaks of Crocus sibirica he means C. Sieberi nivalis. This pretty species is doing better with me this spring than usual, and for this reason, I lifted the bulbs at the end of the summer, and did not plant them till late in the autumn. They are now only just putting their heads above the soil. If left in the ground they begin to show bud soon after Christmas, and are almost certain to be dashed to pieces by wind, rain, hail, and snow. This species varies much in size. There is one variety which has a bloom almost as large as C. speciosus, and is a magnificent flower. One of the most beautiful of the spring Croci is C. biflorus estriatus, a native of the environs of Florence. It has the outside of the three outer petals pale unstriped straw or fawn colour, and the inside soft mauve. I have only a few bulbs at present, but am carefully nursing them up. C. reticulatus, from Trieste, is just coming into bloom. There is a white variety of this pretty species, of which I have a single bulb. The outer side of the outer petals is pale straw colour. C. Weldeni and its pure white variety are now very beautiful, so is C. biflorus and its varieties argenteus, minimus, and Parkinsoni. C. Imperati, like C. Sieberi, should be lifted and planted late, or it begins to come into bloom about Christmas. The little variable yellow Crocus which Mr. Elwes found in Asia Minor is apparently C. chrysanthus; the variety—if variety it be—which mimics C. susianus, is very remarkable: it has the inner side of its anthers freckled with black. C. lævigatus is quite as much a spring Crocus as an autumn one: my few bulbs have been showing bloom since October. C. Tournefortianus is now showing bloom for the first time. C. aureus sulphureus, sulphureus striatus, stellaris, and the various varieties of versicolor and vernus, would be very beautiful if the weather were not so wet and boisterous. The prettiest variety of C. sulphureus is C. sulphureus albidus, which is a pale straw-coloured self of the most delicate hue. I bloomed two small bulbs for the first time last year, and they delighted me extremely. C. lacteus is also a very lovely species, now out, but I only know it from flowers which have been sent me to look at. I have had a single weak bulb for three years, but it has never bloomed. The pale variety of C. veluchensis, French white, with a rich purple zone at the tip of the outer petals, is a most exquisite flower, and appears much more hardy in constitution than its blue brother, which rarely or ever blooms well here in the open ground. C. lineatus, from the South of France, is now out, and is one of the loveliest of the vernal species. It is, however, sadly delicate, and scarcely increases at all. C. pusillus, the last to bloom of all the vernal species, is now just pushing up. Corbularia monophylla has for the first time come up this season, and fairly strong, but I see no sign of bloom. Saxifraga ciliata is beautiful, but it requires the shelter of a frame; S. Stracheyi, a closely allied species, is just opening its buds. The pseudo Primula altaica is finer this spring than ever I knew it—a perfect mass of bloom. The blue mauve Hepatica Bartoni is very lovely, and so is a clump of Bulbocodium vernum, covered with a bell-glass to keep it from the bees and the slugs. Cardamine rotundifolia is becoming covered with its milk-white stars. Iris reticulata is as usual smothered with bloom. Scilla bifolia, and its varieties alba and rosea, are opening their starry petals, and numbers of other things are pushing up. If the wind and the rain would only cease my garden would soon be a mass of flowers. *H. Harpur-Crewe, Drayton-Beauchamp Rectory, Tring, March 6.*

Strawberry Vine.—I only wrote as a visitor to Italy, and have always found the fruit of this Vine served for dessert at the hotels on the lakes of Maggiore, Como, Orta, and Varese, and in the vineyards—in the garden of the latter I have often plucked the Grapes from the Vines. I admitted the Grapes made bad wine, but adhere to my opinion as to their flavour, which is shared by many country men. The Grape may not be extensively grown, for the reason that it is only used for table, but I can vouch for the fact that in most vineyards a Vine of it is to be found. As to its origin I merely quoted the peasants, who judged probably from the flavour of the Strawberry possessed by the skin. *Jno. N. Malleson, The Hermitage, Higham, March 6.*

Orchids at Nevill Court.—There is in bloom at Nevill Court, Tunbridge Wells, the residence of Mrs. R. B. Byass, a beautiful plant of Oncidium sphacelatum. It has fifteen flower-spikes, some of which are 4 feet 6 inches in length. One spike has as many as 177 blooms, another has 160; altogether the plant has over 2000 expanded blooms. I think the plant is worthy of more liberal cultivation than it generally meets with, for when seen in such fine condition it is worthy of a place in most collections. In the same house there are two fine plants of Phaius grandifolius, on one spike of which there are twenty-seven expanded blooms. *A. W., March 6.*

Dendrobium Wardianum.—In your last number you ask if the thick-stemmed Dendrobium Wardianum can be the same as the old slender type. I bought one of the thick-jointed pieces of Messrs. Low's importation which were sold at Stevens' in April last, and it came into flower on February 2. It had eighty flowers on nine growths, and two-thirds of the flowers are still in good condition. The only difference I can see between my plant and the old type is that the flowers are not quite so large, about 3 inches to 3½ inches across, and the two centre spots also somewhat smaller. The colour appears quite as good as that of

the old form. My plant has been grown on a heavy block of charred Teak 3 feet long, and the roots have extended over nearly the whole surface of the block. About an inch of sphagnum has been kept on the block, and changed as soon as it became sour without disturbing the roots, which are firmly attached to the block. Whilst growing, the plant was continually watered, and after growth was completed was never allowed to get very dry. As soon as the new growths made their appearance, copious watering was again commenced, and one or two of them are already 18 inches long. *J. G. H.*

Gladiolus (see p. 308.)—What I mean was that a Greek word is no standard for a Latin one. "Leo" had quoted Calliope as a word in which the "i" was pronounced long, though why it is so I know not; a modern Greek would certainly call it Καλλιόπη, as accented. I confess that, for the moment, I had forgotten the "i" was really short. I suppose I must cave in, and admit that, according to our insular pronunciation of Latin, the "i" of Gladiolus may be accented, but I doubt much if it would be so anywhere out of England. I should pronounce Rad'iola and Mod'iola also. I have, however, looked in three dictionaries, none of which give any clue to the accent. "Society" is hardly a case in point, unless one admits that English rules or modes of pronunciation are absolute for Latin; and "W. F. H." would hardly, I presume, fargue that senātor and oriātor should be so pronounced in Latin. *T. F. R., Feb.* 29.

Rose-buds for Button-holes.—For those who do not care for a large coat-flower, it will be interesting to know that there are now to be had two brightly coloured Roses of small size, which are very suitable for this purpose as well as for bouquets. One is like a small edition of Madame Falcot, but its colour is a clear, cheerful, deep orange; it is (as I am informed) called Madame François Jamin. The other is a pale lemon colour, much resembling a small Maréchal Niel, but the bud is not so long, and the foliage is different from either that or Isabella Sprunt, being deep green above and rosy-brown beneath. For specimens of these Rose-buds (the latter without a name) I am indebted to Mr. Dickson, of Covent Garden. *W. T. T.*

Eupatorium Weinmannianum (ligustrinum).—I have observed with interest the opinions of the different commentators respecting this useful winter flowering plant, which produces an abundance of flowers for the dinner-table, &c. Our method of propagating it here is: cuttings are struck early, duly potted, and grown in 6 and 7 inch pots. To obtain large plants for the conservatory, I prefer one-year-old plants, cut back, and planted out in May in rich garden soil; as the plants grow freely they require to be frequently stopped until about the middle of August; they are taken up and carefully potted the second week in September, and put in a shady place out-of-doors, the syringe being used freely; when the plants are established in their pots, manure-water is given once a week. They are put in a cool house during October; in November removed into a temperature from 55° to 60°, and they come into flower a little before Christmas, and continue for a considerable time. It is, moreover, somewhat hardy, having withstood 9° frost, the most we have had here this season. Largest pyramid plants, 3 feet high and 2½ feet in diameter; bush plants, 2 feet high and 2 feet in diameter, grown in 12 and 13 inch pots. *R. Dalrymple, Hadzor House, Droitwich, Feb.* 21.

Pyrus Aria and Hickories as Ornamental Trees.—Pyrus Aria in its usual habit is a mere bush in hedges and on waste land, but if budded on Mountain Ash, say 8 or 10 feet high, it forms a very striking tree, with a full-grown head, the leaves showing their white under-surface to every breeze, and in autumn there is an abundant growth of bright scarlet berries. Hickories of all kinds, with their congeners, Juglans nigra and cinerea, to say nothing of their value as timber trees, are highly ornamental, and it is matter of surprise that they are not more extensively planted. They are quite hardy, grow with much rapidity, and have large pinnated leaves, which give them a peculiar and somewhat exotic appearance. *G., Bath, Feb.* 28.

Hibberd's Reversible Fruit Walls.—I believe that the reversible fruit wall of Mr. Hibberd and the proposed one made of glass of Mr. Fish (p. 275) will only be found to be fanciful structures, and end in disappointment to all fruit-growers who try them. If success in growing Peaches, Nectarines, and Apricots is desired year after year, it will be found better to cover a wall with glass, and if unheated to keep the trees as backward as possible by shading them before they come into bloom. No frosts in the spring are likely then to do them any injury, for the sun would then have some power, and the back wall will absorb and give out latent heat enough to keep the blossoms safe. On the open walls Mr. Fish's advice respecting the retarding of the blossoms of all kinds of fruit trees is sound, for by spending a few shillings on each tree for shading, and then when in bloom on woollen or cotton netting for protecting it from frosts, there would be little danger to be feared in our most ungenial springs. *William Tillery.*

Double-flowered Epacris.—The reference to this charming novelty in the report of the Royal Horticultural Society's proceedings, as given in your columns last week, p. 308, is calculated to convey a wrong impression. It reads:—"The double-flowered white Epacris shown by Mr. Bull was not the first

FIG. 61.—DOUBLE EPACRIS.

double Epacris that has been seen in this country, *Seeman's Journal* for 1865 containing a description of a double form of E. impressa and there was some doubt as to whether this plant was the same as that, or a double form of E. onosmæflora." Before my exhibit, however, there has not, I believe, been a living plant of the double-flowered Epacris seen in this country. I have been years trying to import it, but until last year always failed to get it alive. The double Epacris alluded to in *Seeman's Journal* is a sprig in the Kew Herbarium, but no living plant of it has been seen in this country. Obviously a dried

FIG. 62.—DOUBLE EPACRIS (TWICE NAT. SIZE). SIDE, TOP, AND SECTION.

specimen in a herbarium is a very different thing to introducing living plants. However, of my plant there is not even a dried specimen in the Kew Herbarium. There is no doubt about my Epacris being a double form of E. onosmæflora, which is so totally different from E. impressa that there can be no mistake about it. E. purpurascens has been adopted by some botanists as the name of the single form of my Epacris, but that horticulturally should read "onosmæflora purpurascens," for it is merely a rosy purple variety of the species, of which the normal type is white flowered. When I received my Epacris the collector wrote me in ecstasies, and said he had seen a plant of it only 10 inches in height, of which 7 inches were so covered with double blossoms as to hide the stem, reminding him somewhat of well-grown Balsams; so that when sufficiently propagated to distribute, I have no doubt it will be found a very desirable introduction. *William Bull.*

Electric Metallic Fire Alarums.—My attention having been called to an article in the *Gardeners' Chronicle* of the 4th inst., headed "Electric Thermometers," in which metallic alarums are described as a novelty patented recently by Mr. A. C. Bagot, I beg to inform you that I invented and patented electric metallic fire alarums for heat and cold about eleven years ago, since which time I have disposed of some hundreds, using them as fire detectors in connection with my patent tablet system of electric bells. They gave the first alarm of the fire at Albury Park (one of the seats of the Duke of Northumberland), a notice of which appeared in the *Times* of May 4, 1869. Manufacturers have found them very useful to place in bales of cotton, so as to give alarm of a rising temperature which might result in spontaneous combustion. *Julius Sax*, 108, *Great Russell Street, London.*

Wanderings of Plants.—Some notices appeared not long since in the *Gardeners' Chronicle* upon the wanderings of plants. Many years ago I made a short journey in the central district of Ceylon with the late Dr. Gardner, then in charge of the botanical garden at Peradenia. Such a combination of Nature and intellect seldom falls to one's lot, and I could not but feel how much I lost by my own botanical ignorance. One thing, however, I remember to have struck me—all the waysides were covered with a little white Passion-flower; you probably may recognise the species. [Probably the form of P. minima sometimes called P. Walkeriæ. EDS.] It climbed about much in the fashion of our own wild Clematis, and although quite a weed was very beautiful. My astonishment was great when I was informed by my companion that it was a wanderer from the West Indies which had made itself so completely at home. It is curious that the most diminutive of its species should have made so long a journey, while the more showy Passion-flowers were not to be seen. *H. K.*

Royal Horticultural Society.—Will you oblige me by stating what privileges the country Fellows of the Royal Horticultural Society are entitled to under the new scheme of privileges adopted, as I hear, with such unanimity at South Kensington the other day? Of what use is a non-transferable ticket to me, who do not visit London more than twice in the year? I feel an interest in horticulture and do what I can to promote its interests, feeling that it is a branch of knowledge most serviceable to the community at large; but why in the world I should pay for the fine ladies and gentlemen of South Kensington I cannot conceive. I purpose discontinuing my subscription, as many of my friends laugh at me for wasting my guineas on an institution which has lost its *raison d'être. Bucolicus.*

—— Now that the affairs of the Society appear to be taking a more favourable turn, would it not be well for the executive to turn its attention to the subject of Provincial shows? Nearly three years have elapsed since the last Provincial. It is earnestly to be hoped that they will not be allowed to die out, for not only were they an impetus to horticulture, but a means of adding largely to the Society's income—a fact which should certainly not be lost sight of in the present state of the Society's finances. Their discontinuance was undoubtedly a step in the wrong direction. Now that the clouds of adversity are passing over, and sunshine is about to beam on the Society, it is to be hoped that the friends of the old Society, like "good little boys," will now take heart, rally round it, and revive those useful country meetings. It is rather late perhaps to make arrangements for one during the present season, but if the matter were taken up at once with spirit, an autumn meeting might take place, with great advantage to the Society. *J. R. A.* [The Society must be up and doing if it is to become reinstated in public favour; and amongst the many courses open, that of holding a provincial show is one of the most likely to be useful and successful. An exhibition in the East of London should decidedly be tried. EDS.]

Plant Names: How to Pronounce Them.—I am sorry that my well-intentioned remarks upon the pronunciation of plant names should have given occasion for a slang jest in the peroration of the letter in your last issue signed "Ebor," but every man, the jester and the "half-playful" one included, does what his nature prompts him to; and if, on my own part, I have erred, I can at least sincerely say that I do all in my power to help and encourage the earnest inquirer after truth. "Ebor" states that Loudon has committed "palpable errors" in the accentuation of Trichomanes, and some half-dozen other Greek names. It is not that Loudon is wrong—Loudon is quite right—but that "Ebor" is unaware that the custom with printers, unless otherwise ordered, is to place the accentual mark over the last vowel of the syllable upon which the emphasis is to fall—the sound of the vowel, long or short, being determined

according to certain rules. These rules are laid down on p. 20 of the introduction to the *Encyclopædia*, and it might be well for "Ebor" to read them. He will find that the custom spoken of is faithfully observed throughout the whole of the *Encyclopædia*, as in maritima, conspícua, mínimum, Ceratocéphalus, Cámbrica, áspera, and a thousand others, all of which, according to "Ebor's" mistaken way of reading, would likewise be marked wrong, whereas they are all marked quite right, and what more may be wanted the rules will supply. "Ebor's" statement that *amaurorachis* and a good many other Greek terms "cannot be found in any lexicon" is perfectly true. Nobody that I know of ever said they were in the lexicon; but the component members of these words are all there, and are easy enough to find after a little practice, the need of which is so much the more in favour of the student. No one can expect—I am sure I have never given it to be supposed—that all the 10,000 Greek names and terms constructed by modern botanists are in a lexicon of the literature of ancient Greece. Neither can it be expected that the art of consulting a lexicon can be acquired as easily as that of moulding a snowball. It is open, nevertheless, to every man and youth who has industry and observant powers. My remarks upon the swift utility of the lexicon, as your readers in general would perceive, had reference, not to what in the very nature of things the lexicon does not contain and cannot contain, but to its serviceableness in cases of critical need—when, for instance, it is required to determine on first principles whether the third syllable of Tragopogon and Stratiotes is long or short. I never proposed that the lexicon should be employed instead of consulting a trustworthy author like Loudon or Hooker. Every man of course consults his botanical books first. At the same time I do most earnestly recommend that every young botanist should qualify himself to use one. As for Fuchsia and Dahlia, very likely we in England do not give these names their absolutely proper sound—whatever that may be. But a certain pronunciation has been established for them in this country, Loudon and the other authorities concurring in it, and that is enough. There are people, I am aware, who wish to supersede the current pronunciation with something affectedly exotic, just as I have heard Parée insisted on in place of Paris. All I can say is that conceitedly to object to what is approved universally, where a change would be of no earthly use and confusion would certainly follow, and to endeavour to make the change, betrays the existence of some grievous intellectual malady. This closes the discussion. *Leo Grindon, Manchester, March 7.*

Carnations and Picotees.—By an unfortunate omission of mine the undernoted paragraph relating to the culture of these flowers was not given in the *Florist* for this month; may I beg you will allow it to appear in the *Gardeners' Chronicle?*—"Delicate growers, or varieties which suffer from suffusion of the colours, whether of Carnations or Picotees, and whether it be to the discoloration of the back of the petals, or the melting of the colour into the white of the surface, will be greatly advantaged by a liberal admixture of small pieces of charcoal about the size of a nut with the soil at the time of potting. My practice is to have a measure of charcoal of the size described conveniently at hand whilst potting, and to throw in a large handful (sometimes two) in every case where the grass is very open and succulent, or where experience has shown the tendency referred to exists." *E. S. Dodwell.*

Obituary.

WE read with great regret, in a recent number of the *Scotsman*, an announcement of the death of JAMES SINCLAIR, Esq., of Forss, in the county of Caithness. The deceased gentleman, who had attained the age of seventy-five years, was one of the largest and most enterprising of Caithness landlords, and had been unable, through infirmities, for some time to take part in any of the active duties appertaining to his position in the county. As an employer of labour he was enterprising and judicious, and for about forty years he carried on extensive pavement works, which yielded him excellent returns. Mr. Sinclair had a great partiality for hardy trees and shrubs, and especially for Conifers, and took great delight in introducing them into Caithness. It is astonishing, too, what he accomplished, when we consider the position of his estate, which is situated about eight miles west of Thurso, in the extreme north of Scotland, and in a county, too, in which there are no hills—not a tree to be seen in the open for miles at a stretch, but over which the winds sweep from sea to sea. Mr. Sinclair first began planting Conifers about thirty years ago, but owing to the want of shelter and the presence of ironstone in the soil, had not much success until he had the soil in his garden excavated and renewed, and shelter provided in the shape of hedges of Laburnum. The first Araucaria planted was poisoned by the bog iron, but under the altered circumstances just described another plant made a nice growth. The Wellingtonia proved itself to be the most delicate, getting browned almost every year. Picea cephalonica grew remarkably well, but, like many others, not until it was kept regularly pinched in. Thuja occidentalis proved to be very hardy, and Mr. Sinclair's garden contained some fine conical and globular-shaped bushes, brought into these shapes by the pinching process. Thuja Lobbii was represented by fine plants; and Picea Pinsapo, though of slow growth, was found to be quite hardy. The Black Spruce, Abies nigra, is very hardy at Forss, and we saw some trees there two years ago 20 feet high. The White Spruce, Abies alba, was also making nice growth; and of Abies Menziesii we saw a plant from 25 to 30 feet high. The Irish Yew makes a fine growth, and so do Rhododendrons. The Lime tree and the Ash both grow admirably, but, strange to say, there was only one Oak tree in the place. Leycesteria formosa was found to stand the sea breeze well, while the Portugal Laurel proved tender until it was periodically cut in. The climate here is generally good except during the month of March, when very severe weather is experienced. During the severe frost in the winter of 1860-61 the trees here escaped without injury, while in other places they were much tried.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, MARCH 8, 1876.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Mar.	In.	In.	°	°	°	°	°	°			In.
2	29.63	—0.21	51.2	37.7	13.5	43.6	+ 3.2	38.8	83	W.; S.W.	0.03
3	29.54	—0.32	50.8	42.4	8.4	49.3	+ 8.8	46.6	90	S.W.; S.S.W.	0.05
4	29.56	—0.33	53.8	39.1	14.7	45.0	+ 4.5	37.0	74	S.W.; W.	0.00
5	29.53	—0.38	51.0	37.1	13.9	43.2	+ 2.7	42.7	97	S.	0.13
6	29.50	—0.43	56.1	42.0	14.1	47.8	+ 7.3	40.9	78	W.; WNW	0.00
7	29.63	—0.31	48.9	35.7	13.2	41.4	+ 0.9	32.0	69	WNW.; N.W.	0.02
8	29.20	—0.74	53.1	36.2	16.9	43.2	+ 2.7	39.7	87	WSW.; S.W.	0.11
Mean	29.51	—0.39	53.0	38.6	14.4	44.8	+ 4.3	39.7	83	W.; S.W.	sum 0.32

Mar. 2.—A fine day, but dull and cloudy. Thin rain in evening.
— 3.—Dull, cloudy, and strong wind throughout. Rain fell before 8 A.M.
— 4.—A fine day, partially cloudy. Windy.
— 5.—A dull cloudy day. Frequent rain.
— 6.—A fine day. Smart shower of hail and rain at 11.30 A.M. Strong gale.
— 7.—A very fine day. Cloudy. A gale of wind.
— 8.—Fine till noon, dull and showery after. Fine at night.

—— During the week ending Saturday, March 4, in the neighbourhood of London the reading of the barometer at the level of the sea increased from 29.37 inches at the beginning of the week to 29.89 inches by the evening of February 28, decreased to 29.78 inches by noon on the 29th, increased to 29.88 inches by the evening of the same day, rapidly decreased to 29.55 inches by noon on March 1, increased to 29.85 inches by the morning of the 2d, decreased to 29.69 inches by the evening of the 3d, and increased to 29.82 inches by the end of the week. The mean reading for the week was 29.54 inches, being 0.06 inch lower than the preceding week, and 0.30 inch below the average. The highest temperatures of the air observed by day ranged from 59° on February 29 to 50¼° on March 1; the mean for the week was 54½°. The lowest temperatures of the air observed by night varied from 37¾° on March 2 to 46¼° on February 29; the mean value for the week was 41¾°. The mean daily range of temperature in the week was 12½°, the greatest range in the day being 17½° on February 28, and the least 6¼° on March 1.

The mean daily temperatures of the air were as follows:—February 27, 47°.3; 28th, 48°.8; 29th, 52°; March 1, 45°.9; 2d, 43°.6; 3d, 49°.3; 4th, 45°; and the departures in excess of their respective averages were = 7°.4, 8°.7, 11°.8, 5°.6, 3°.2, 8°.8, 4°.5. The mean temperature of the air for the week was 47°.4, being 7°.1 above the average of sixty years' observations.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the sun's rays, was 102° on the 4th; on the 27th 58° was the highest reading; the mean reading for the week was 79½°. The lowest reading of a thermometer on grass, with its bulb exposed to the sky, was 32° on the 4th; the mean for the week was 37½°. The direction of the wind was mostly from the S.W., and its strength brisk. The weather during the week was dull and cloudy, with frequent rain. Rain fell on six days during the week; the amount collected was 0.64 inch, 0.40 inch of which fell on March 1.

In England the highest temperatures of the air observed by day were, at about London, Cambridge, Leicester, and Sunderland, all 59°; at Brighton 51° was the highest temperature in the week. The mean from all stations was 56⅓°. The lowest temperature of the air was 34½° at Eccles. At Truro and Plymouth 42° was the lowest temperature observed in the week. The mean value from all stations was 38½°. The range of temperature in the week was the greatest at Nottingham, 22¾°, and the least at Brighton, 12½°. The mean range of temperature from all stations was 18½°. The mean of the seven high day temperatures was the largest at Cambridge and Nottingham, 55°, and the smallest at Brighton, 49¾°. The general mean from all stations was 53°. The mean of the seven low night temperatures was the smallest at Eccles, 36¾°, and the largest at Truro, 47½°. The mean value from all stations was 41½°.

The mean daily range of temperature in the week was the greatest at Nottingham, 15°, and the least at Truro, 6¼°; the mean daily range from all stations was 11½°. The mean temperature in the week from all stations was 46¾°, being 13° higher than the value for the corresponding week in 1875. The highest was 50°, at Truro, and the lowest, 45½°, at Brighton, Hull, and Sunderland.

Rain fell on every day in the week at Brighton, Plymouth, Bristol, and Nottingham, and on six days at most other stations; the amounts varied from 1 inch at Brighton, Plymouth, Truro, and Bristol to three-tenths of an inch at Wolverhampton; the average fall over the country was seven-tenths of an inch.

The weather during the week was dull, mild, and wet.

In Scotland the highest temperatures of the air ranged from 56¾° at Leith to 49° at Paisley, the general average being 53°. The lowest temperatures of the air varied from 30° at Paisley to 34° at Dundee, Aberdeen, and Leith; the average value was 33°. The mean range of temperature in the week from all stations was 20°.

The mean temperature of the air for the week was 42¼°, being 6½° higher than the value for the corresponding week in 1875. The highest occurred at Edinburgh and Leith, both 43½°, and the lowest at Paisley, 40¾°.

Rain was measured at Greenock to the amount of 3½ inches, at Paisley 2¾ inches fell, but at Dundee and Leith 1 inch only was measured; the average fall over the country was 2 inches.

At Dublin the highest temperature of the air was 59¼°, the lowest 36¼°, the range 23°, the mean 47¾°, and the fall of rain 0.61 inch.

JAMES GLAISHER.

Answers to Correspondents.

*** We must beg the indulgence of numerous correspondents, whose communications are necessarily delayed by the great demand on our space.

STAUNTONIA LATIFOLIA AND CAREX PENDULA. Qy. 103, p. 310: Mr. Simmonds would probably get the former at Messrs. Osborn & Sons, Fulham; or Mr. B. S. Williams, Holloway; and the latter from Messrs. Rollisson & Sons, or Mr. Parker, Tooting. *T.*—Carex pendula grows most plentifully and luxuriantly near Chepstow, especially in woody and shady damp spots between the Severn and Wye. Mr. Pillinger, nursery-gardener, Chepstow (or his successor), would probably put Mr. Simmonds in communication with some one who could procure him specimens. *O.*

CINERARIAS: *S.* The flowers sent are of a good strain, and would doubtless produce a crop of useful decorative plants, the colours being good, and the florets broad and smooth. They are perhaps as good as some of the named sorts, but seedling Cinerarias are rarely named now that good strains of seed yield so many useful plants.

"FLORISTS IN SEEDS:" *G. B.* Consult our advertising columns.

MODERN GARDENS AND THE *Saturday Review*: *Rhadamanthus.* The article you allude to, however just it may be in its application to a very small minority, is such an atrocious libel on the large majority that it would be a waste of words to reply to it; any answer would give an importance to the

original article which its contents do not justify. Make your mind easy that gardeners as a class are at least as honest as Saturday Reviewers are, and know their own business quite as well as they do. The cutting holes in the dining-room table is an untruth, which has over and over again been exposed.

NAMES OF PLANTS: *T. P.* 1, We cannot tell without a cone—possibly it is Pinus ponderosa; 2, the Dutch Rush, Equisetum hyemale; 3, Euonymus nanus.—*R. T.* 1, Scilla bifolia; 2, Scilla sibirica.—*A. G.* A large form of Asplenium furcatum (præmorsum).—*Olibo.* 1, Onychium japonicum; 2, Asplenium bulbiferum; 3, Lomaria gibba; 4, Pteris argyrea; 5, Phlebodium aureum; 6, Selaginella Braunii. — *W. Jones.* 1, Davallia tenuifolia; 2, Lastrea tenericaulis; 3, Polystichum capense; 4, Phlebodium areolatum; 5, Niphobolus Lingua; 6, Asplenium umbrosum; 7, Onychium japonicum; 8, Libonia floribunda. — *N. M.* 1. Sonerila speciosa.—*C. W. Strickland.* A species of Peperomia, but we have nothing like it in the Herbarium. Can you send us a good specimen to press?—*Subscriber.* Many of the specimens are very imperfect; they appear to be—1, Scutellaria Mociniana; 2, Xylophylla longifolia; 3, Fittonia argyroneura; 4, Fittonia Pearcei; 9, Cypripedium barbatum; 10 and 11, forms of Cattleya Trianæ; 12, Coelogyne ochracea. The rest next week.—*Ignoramus.* Campanula persicifolia.

PANCRATIUMS: *J. M.* does not state what the species of Pancratium are that he requires information about. The treatment they want is as widely different as the countries they come from. For instance, the European P. maritimum and P. Illyricum are all but hardy with protection in winter, whilst the more generally grown kinds that are natives of South America and the East and West Indies require a stove to grow them in; they succeed best in good sandy loam, in pots proportionate to the size of the bulbs, well drained. They should be kept slowly growing through the winter with a little water, never allowing them to become dry. Give more water in the summer when they are growing freely, and let them have plenty of light. They are easily managed and most desirable plants, the flowers highly fragrant, the individual blooms unequalled for bouquets, colour and perfume equal to Eucharis amazonica, and the flowers much more elegant.

VIOLET PRINCE CONSORT: *G. Lee.* The blooms are remarkably large, and fine in form, and are specially noticeable for their stoutness and firmness of texture; they are much superior to the Czar in these respects, but the fragrance is not so powerful or penetrating.

PUBLICATIONS RECEIVED.—The Potato Disease, its Cause and Remedy. By a Resident of Kent.—Reminiscences of Fen and Mere. By J. M. Heathcote (Longmans).

CATALOGUES RECEIVED.—Messrs. J. Backhouse & Son (York), Supplement to Catalogue of Alpine Plants, &c.—Messrs. Sutton & Sons (Reading, Berks), Farmers' Year Book and Graziers' Manual.—Mr. G. Yates (29, Little Underbank, Stockport), Descriptive Catalogue of Select Vegetable and Flower Seeds.—Mr. J. Coombs (The Ferns, Enfield, Middlesex), Catalogue of Cuttings of Geraniums, &c.—Messrs. J. Cocker & Sons (Sunnypark and Froghall Nurseries, Aberdeen), Select List of Agricultural Seeds, &c.—Messrs. James Dickson & Sons (108, Eastgate Street, Chester), Catalogue of Farm Seeds, &c.

COMMUNICATIONS RECEIVED.—F. M. Mackwood, Colombo (many thanks).—Ebor (your last was too late to receive attention).—G. B., Sydney (thanks).—W. T. T.—W. D. (thanks).—A Subscriber for Ten Years.—T. M.—T. B.—S. H.—T. C.—O.—J. R. J.—E. S. D.—J. R.—G. P.—H. W.—J. Smith..

Markets.

COVENT GARDEN, March 9.

A fair amount of business has been doing, at last week's prices, the supply of all kinds of goods being fully equal to the demand, and in some cases—such as Cucumbers and French Beans—more than sufficient. The supply of Broccoli does not diminish. A fair demand for Cobs, at slightly improved prices. *Jas. Webber, Wholesale Apple Market.*

VEGETABLES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	4 0- ..	Leeks, per bunch	.. 0 2- 0 4
— Jerusalem, p. lb.	0 3- ..	Lettuces, per score	.. 2 0- ..
Asparagus (English), per bundle	.. 8 0-12 0	Mint, green, bunch	0 6- 1 0
— French	..18 0-25 0	Mushrooms, per pott.	1 0- 2 0
Beans, French, p. 100	1 0- 3 6	Onions, young, bun.	0 4- 0 6
Beet, per doz.	.. 1 0- 2 0	Parsley, per bunch	.. 0 4- ..
Brussels Sprouts, lb.	0 4- ..	Peas, green, per lb.	.. 1 6- ..
Cabbages, per doz.	.. 1 0- 2 0	Potatos (new), baskt.	1 0- ..
Carrots, per bunch	.. 0 6- ..	— new Jersey, p. lb.	1 6- 2 0
Cauliflowers, p. doz.	2 0- 4 0	— Sweet, per lb.	.. 0 6- ..
Celery, per bundle	.. 1 6- 2 0	Radishes, per bunch.	0 1- 0 3
Cucumbers, each	.. 1 0- 2 6	— Spanish, doz.	.. 1 0- ..
Endive, per doz.	.. 1 0- 2 0	— French	.. 0 6- ..
— Batavian, p. doz.	2 0- 3 0	Rhubarb, per bundle	0 6- 1 0
Herbs, per bunch	.. 0 2- 0 4	Salsafy, per bundle	.. 0 9- ..
Horse Radish, p. bun.	3 0- 5 0	Seakale, per punnet	1 0- 2 0
		Shallots, per lb.	.. 0 3- ..
		Turnips, per bundle	0 4- ..

Potatos—Rocks, 105*s.* to 110*s.*; Regents, 120*s.* to 170*s.*

FRUIT.

	s. d. s. d.		s. d. s. d.
Apples, per ½-sieve	1 0- 2 6	Melons, each	.. 0 0- 0 0
Cobs and Filbts., lb.	0 6- 0 9	Oranges, per 100	.. 6 0-12 0
Grapes, per lb.	.. 3 0-12 0	Pears, per doz.	.. 3 0-10 0
Lemons, per 100	.. 6 0-10 0	Pine-apples, p. lb.	.. 1 6- 4 0

CUT FLOWERS.

	s. d. s. d.		s. d. s. d.
Arum Lilies, per doz.	4 0-12 0	Mignonette, 12 bun.	6 0- 9 0
Azaleas, 12 sprays	.. 0 6- 2 0	Narcissus, per dozen	1 0- 3 0
Camellias	.. 1 6- 9 0	Pelargoniums, 12 spr.	1 0- 3 0
Carnations, 12 blooms	2 0- 4 0	— Zonal do.	.. 0 9- 2 0
Cineraria, per bunch	1 0- 2 0	Primula, dbl., p. bun.	1 0- 1 6
Cyclamen, 12 blooms	0 3- 0 6	Rhododend., 12 hds.	3 0- 6 0
Epiphyllum, p. doz.	1 0- 3 0	Roman Hyacinths, 12 sprays	.. .. 1 0- 3 0
Eucharis, per doz.	.. 6 0-18 0	Roses, indoor, p. doz.	1 6-10 0
Euphorbia, 12 spr.	.. 4 0- 9 0	Spiræa, 12 sprays	.. 1 0- 4 0
Gardenia, per doz.	.. 6 0-12 0	Stephanotis, 12 sprays	9 0-18 0
Heliotropes, 12 spr.	0 6- 1 0	Violets, 12 bunches	.. 0 6- 2 0
Lily of Valley, 12 spr.	1 0- 4 0		

PLANTS IN POTS.

	s. d. s. d.		s. d. s. d.
Azaleas, per doz.	..24 0-60 0	Fuchsia, per doz.	.. 9 0-18 0
Begonias, per doz.	.. 6 0-12 0	Genista, do.	.. 9 0-24 0
Bouvardias, do.	..12 0-18 0	Heaths, in var., doz.	12 0-30 0
Cineraria, per doz.	.. 9 0-18 0	Hyacinths, per doz.	9 0-18 0
Crocus, do.	.. 4 0- 9 0	Lily of Valley, doz.	18 0-36 0
Cyclamen, do.	.. 9 0-24 0	Mignonette, do.	.. 6 0- 9 0
Cyperus, do.	.. 6 0-12 0	Myrtles, do.	.. 3 0- 9 0
Deutzia, do.	.. 9 0-18 0	Pelargoniums, scarlet, per doz.	.. .. 6 0- 9 0
Dielytra, do.	..12 0-24 0	Primula sinensis, do.	6 0-12 0
Dracæna terminalis	30 0-60 0	Roses, Fairy, do.	.. 9 0-15 0
— viridis, per doz.	18 0-24 0	— various, do.	..18 0-30 0
Epacris, do.	..12 0-18 0	Solanums, do.	.. 6 0-24 0
Euphorbia jacquiniæfolia, per doz.	.. 9 0-18 0	Tulips, do.	.. 8 0-12 0
Ficus elastica	.. 2 6-15 0	Veronica, do.	.. 4 0-12 0

SEEDS.

LONDON: *March 9.*—A daily increase of activity is now seen on our market, and as the sowing time draws nearer the real scarcity of all kinds of Clover seed becomes more and more manifest. The demand being brisk there is in consequence a strong advance in the value of all varieties. Country buyers have now begun to operate in earnest, and every week causes a considerable diminution of the limited stocks held in London. Red Clovers are fully 2*s.* per cwt. higher, and in sympathy with the rise here the foreign markets are all described as tending upwards. Perhaps the leading feature of the week has been the extraordinary run upon white Clover seed, which article, being in very short supply, and meeting with a strong and sudden demand, exhibits an improvement in price of £8 to £10 per ton. Alsike is also considerably dearer. Fine samples of Trefoil are now almost unobtainable, 56*s.* per cwt. was paid for one parcel on Monday last. In spite of the recent enhancement of 50 per cent. in its price, there is a good inquiry for imported Italian. Advices from France describe the article as now out of the market. Perennial grasses are firm, but do not meet with a lively sale. Spring Tares maintain former rates, and the supplies continue light, but a spell of dry weather is needed to impart animation to the trade. Hemp and Canary attract but little attention. For Mustard and Rape seed there is a good request. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, E.C.*

CORN.

Trade at Mark Lane on Monday was quiet, with no great change in prices. Only fine samples of English Wheat fully supported the quotations of Monday se'nnight. Inferior foreign Wheat was flat in tone, but the better descriptions were quite as dear. Barley was in moderate supply, and where sales were forced prices were decidedly easier. Malt was sparingly bought at about last week's currencies. A fair inquiry prevailed for Oats, the superior qualities of which realised an advance of 6*d.* per qr. Maize was dull, and about the same in price. Beans declined 1*s.* per qr., and Peas barely maintained previous quotations. Flour was somewhat cheaper to sell.—Business continued dull on Wednesday. The supply of English Wheat was very poor, and there was also rather a want of condition in the foreign supplies. Choice Barley was firm, but inferior sorts flat. The same remark applies to malt, Oats, flour, and indeed all other classes of produce.—Average prices of corn for the week ending March 4:—Wheat, 43*s.*; Barley, 32*s.* 7*d.*; Oats, 25*s.* 4*d.* For the corresponding week last year:—Wheat, 41*s.* 1*d.*; Barley, 42*s.*; Oats, 29*s.* 8*d.*

CATTLE.

At Copenhagen Fields on Monday there was a more cheerful trade in beasts, and prices improved a little for choicest descriptions. The supply of sheep was equal to the demand; and only for choice qualities, not too large, was a small advance obtained. Choice calves were very scarce and very dear. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.*, and 5*s.* 6*d.* to 6*s.*; calves, 5*s.* 6*d.* to 7*s.* 4*d.*; sheep, 5*s.* 4*d.* to 6*s.*, and 6*s.* 4*d.* to 7*s.* 2*d.*; pigs, 4*s.* 4*d.* to 5*s.* 4*d.*—At market on Thursday trade in beasts was quiet, at prices scarcely so good, on the average, as those above quoted. For sheep the rates rather improved. Calves sold as on Monday. Trade for milch cows continues dull.

POTATOS.

The Borough and Spitalfields reports state that the supplies are moderate, and trade continues steady at about late rates. Kent Regents, 110*s.* to 140*s.* per ton; Essex ditto, 100*s.* to 130*s.*; Rocks, 85*s.* to 95*s.*; Flukes, 130*s.* to 150*s.*; Kidneys, 100*s.* to 120*s.*; Victorias, 120*s.* to 150*s.*—The arrivals of foreign Potatos into London last week included 46 tons 1360 bags from Antwerp, 3157 bags from Heslingen, 386 tons 988 sacks from Dunkirk, 427 sacks from Boulogne, and 5711 bags from Hamburg.

The Potato that Resists Disease.

Carter's

IMPROVED RED-SKIN FLOURBALL.

We again offer a very fine selected Stock of this invaluable Potato, which continues to resist the ravages of the disease in the most surprising manner. We have at all times avoided the statement published by Houses, "that the Red-skin Flourball Potato is the only DISEASE-PROOF variety." We, however, repeat that our Improved Red-skin Flourball RESISTS THE DISEASE TO A FAR GREATER EXTENT than any other variety in cultivation.

Per peck, 3s.; bushel, 10s. 6d.; cwt., 17s.

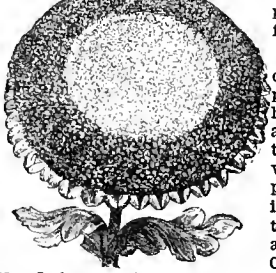
Much cheaper per half ton, or per ton.

BETTERIDGE'S

GRAND

EXHIBITION PRIZE ASTER.

For full description see p. 200, *Gardeners' Chronicle*, February 12, 1876.



Mr. Betteridge has placed in our hands for distribution the ENTIRE STOCK of the following superb Novelties. They have been exhibited at all the great Metropolitan and Provincial Shows of the past autumn, securing in every instance the highest Prizes and Certificates of Commendation from the Judges, and universal admiration from every lover of this popular flower.

SNOWFLAKE or SNOWBALL.—A grand Aster; the flowers large and full. Colour pure snow-white. Awarded a Certificate of Merit at the Alexandra Palace, August 24, 1875. *Per packet, 2s. 6d.*

PURPLE PRINCE.—Flowers of extraordinary size and substance. Colour rich velvety purple. Unquestionably one of the finest quilled Asters ever introduced. *Per packet, 2s. 6d.*

PRINCE of NOVELTIES.—This splendid novelty is strikingly distinct, and must prove a great acquisition; the outer ring of the flowers is of a bright crimson-lake, the inner ring splashed irregularly with rose; centre pure white. Awarded a Certificate of Merit at the Alexandra Palace, August 24, 1875. *Per packet, 2s. 6d.*

PRINCESS ALEXANDRA.—A greatly improved form of "Duchess of Edinburgh," already in cultivation. The flowers are of immense size and substance. Colour bright crimson-rose, pure white centre. *Per packet, 2s. 6d.*

Price per packet (each variety), as above .. 2s. 6d.
Price the Collection of four varieties .. 6s. 6d

Caution.—*All Packets of the above Novelties will be sealed with our Registered Trade Mark.*

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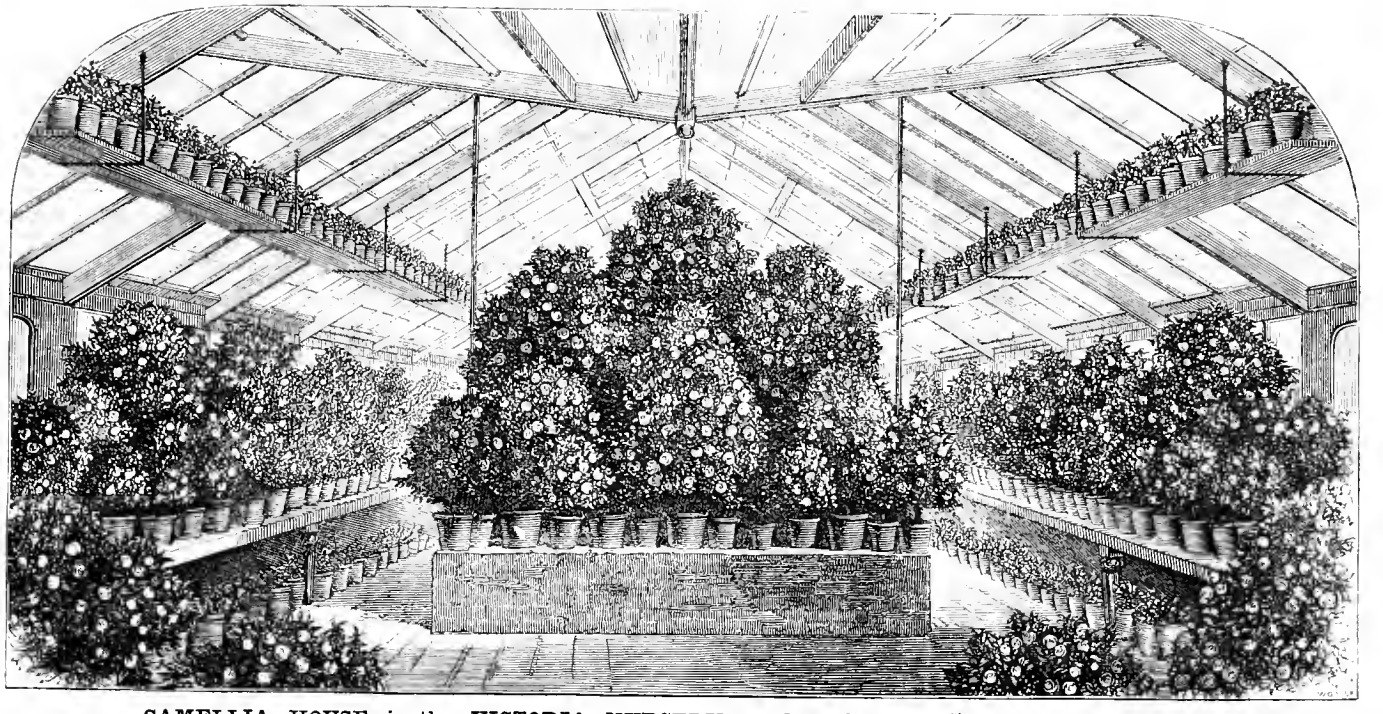
The Queen's Seedsmen,

237 & 238, HIGH HOLBORN, LONDON, W.C.

B. S. WILLIAMS

Respectfully invites his Patrons and the General Public to an inspection of his splendid stock of CAMELLIAS, now coming into bloom, which includes all the best leading varieties.



CAMELLIA HOUSE in the **VICTORIA NURSERY**, as figured in the "Gardeners' Chronicle."

Cyclamen, Primulas, Cinerarias, and other Spring-flowering Plants are now in full bloom.

VICTORIA and PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N.

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HEATING APPARATUS ARRANGED for EVERY CLASS of HORTICULTURAL BUILDING.

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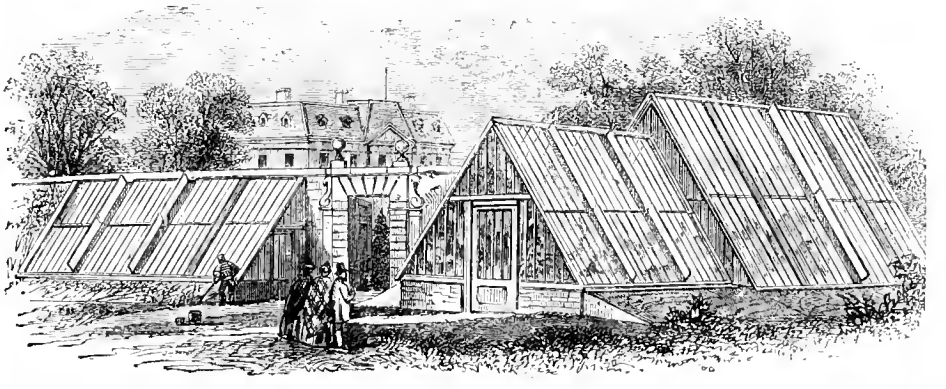

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Agents for "Multum in Parvo Flower and Fruit Cases;" and for Pincolium Blinds for Conservatories, &c.

The FOURTH EDITION of a HANDBOOK of VINE and FRUIT TREE CULTIVATION, as adapted to the above Patent Hothouses, containing Illustrations, Hints for Heating Houses, and General Directions for Cultivation, &c., by Mr. HEREMAN, may be had at our Office, price 1s., or post-free for 13 stamps.

"The instructions given for the cultivation of the Vine and other crops are essentially practical, and are evidently written by one who has himself performed all the operations before he attempted to instruct others."—*Journal of Horticulture.*

Cheap Plants.

WILLIAM BADMAN offers the following cheap Plants for present potting :—

VERBENAS, Purple, Scarlet, White, Rose, Crimson, &c., best bedding sorts, healthy, hardy stuff, 6s. per 100, 50s. per 1000; also 20 fine named varieties, 8s. per 100.

CALCEOLARIA, Golden Gem and aurea floribunda, 5s. per 100, 40s. per 1000.

LOBELIA SPECIOSA (true), from cuttings, sturdy plants, 3s. per 100, 20s. per 1000.

HELIOTROPE, finest dark sorts, 6s. per 100.

PELARGONIUMS, Scarlet, White, Pink, Crimson, best sorts, from single pots, 1s. 6d. per dozen, 10s. per 100.

IRESINE LINDENI, fine crimson-leaved bedding plant, 6s. per 100.

CENTAUREA CANDIDISSIMA, silver leaf, in single pots, 20s. per 100, 3s. per dozen.

VESUVIUS, the best Scarlet Pelargonium for pots or beds, good plants, 1s. 6d. per dozen, 10s. per 100.

Package included. Terms cash.

Cemetery Nursery, Gravesend, S.E.

SUTTON'S

CHOICE GLADIOLI.

SUTTON'S COLLECTIONS of GLADIOLI.

Choice Exhibition Varieties.

25 splendid varieties from Section 1 (our selection) ..	£2	0	0
12 splendid varieties from Section 1 (our selection) ..	1	0	0

Choice Varieties for Garden Decoration.

100 roots from Section 2, in 50 beautiful varieties ..	5	0	0
50 roots from Section 2, in 50 beautiful varieties ..	2	10	0
25 roots from Section 2, in 25 beautiful varieties ..	1	5	0
12 roots from Section 2, in 12 beautiful varieties ..	0	12	0

Cheaper but Showy Varieties.

25 roots in 25 choice varieties	0	17	6
12 roots in 12 choice varieties	0	9	0
12 roots in 12 good varieties	0	6	0
Finest Mixed .. .. .. per dozen 5s., per 100	1	15	0
Fine Mixed French Seedlings per dozen 3s., per 100	1	1	0
Mixed .. .. per dozen 2s., per 100	0	12	6

SUTTON & SONS,
THE QUEEN'S SEEDSMEN, READING.

GOLDEN YEWS, HOLLIES,
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CONIFERÆ, &c.

All persons who intend to plant should send for

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Their stock of the above, for immediate planting, stands unrivalled, being in splendid condition and specially prepared for removal.

Golden Yews.—Perfect pyramids, up to 8 feet high.

Gold and Silver Variegated Hollies.—A large and rich collection of specimens.

Ornamental Deciduous Trees.—One of the finest collections in Europe; all sizes up to 20 feet.

CATALOGUES POST FREE.

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REDUCTION IN PRICES OF

YOUNG'S GOLDEN CHINESE JUNIPER

(JUNIPERUS CHINENSIS AUREA).

"The finest Golden Conifer of the day."

IT HAS BEEN EXHIBITED AT THE FOLLOWING SOCIETIES' SHOWS, WHEN THE HIGHEST HONOURS WERE AWARDED TO IT :—

Royal Horticultural, Aug. 2, 1871, First-class Certificate.
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Manchester Horticultural, Sept. 10, 1872, First-class Certificate.
Glasgow and West of Scotland International Horticultural, Sept. 11, 1872, First-class Certificate.
Société Royale d'Agriculture et de Botanique de Gand, March 3, 1873, First-class Silver Medal.

On each occasion receiving the highest encomiums.

	£	s.	d.	
4 to 6 inches	5	0	0	per 100.
6 to 9 „	7	10	0	„
9 to 12 „	10	0	0	„
12 to 15 „	12	10	0	„
15 to 18 „ ... ... 42s. to	3	0	0	per doz.
SPECIMENS, 1½, 2, 2½, and 3 feet ... 10s. 6d., 21s., 31s. 6d., 42s., and 63s. each.				

NEW RHODODENDRONS.

BIANCHI, | LADY WINIFRED HERBERT, | SALVINI,
CAPTAIN WEBB, | MRS. GEO. BROWN, | WM. MILTON.

☞ The above Rhododendrons having been thoroughly tested for several seasons can be confidently recommended to purchasers as really distinct and hardy late-blooming varieties, combining all the qualities most desirable in this attractive class of plants. They are now offered in good plants :—

First Size, nice Plants, £2 12s. 6d. the set. Second Size, bushy, about 1½ foot, £3 15s. the set. Third Size, bushy, ½ to 2 feet, £5 5s. the set.

NEW AUCUBAS.

AUCUBA YOUNGII (Male and Female).

These are without doubt the finest varieties of Aucuba at present known. They are the result of crossing "A. ovata," the dwarf-growing species, with "A. viridis," the strong growing green one.

They are of very robust habit, yet compact in growth; the foliage is large, nearly round in shape, of great substance, and a rich deep shining green. The fruit on the female plant is very large, and of a deep blood-red. It received a First-class Certificate at the Royal Horticultural Society's Meeting, on March 19, 1873, and is described in the *Gardeners' Chronicle* as "a fine variety which has received a First-class Certificate for its dense habit, fine dark leaves of great substance, and large deep crimson fruit." They are valuable acquisitions to our hardy evergreens, and when known will demand a place in every collection, and will be universally planted in every garden and shrubbery where a really fine ornamental evergreen is a desideratum.

Strong Plants in pots, 5s. each; 42s. per dozen.

MAURICE YOUNG, MILFORD NURSERIES, near GODALMING.

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SHOWING CUCUMBERS AS GROWN AND EXHIBITED AT SOUTH KENSINGTON ON SEPT. 1, 1875.

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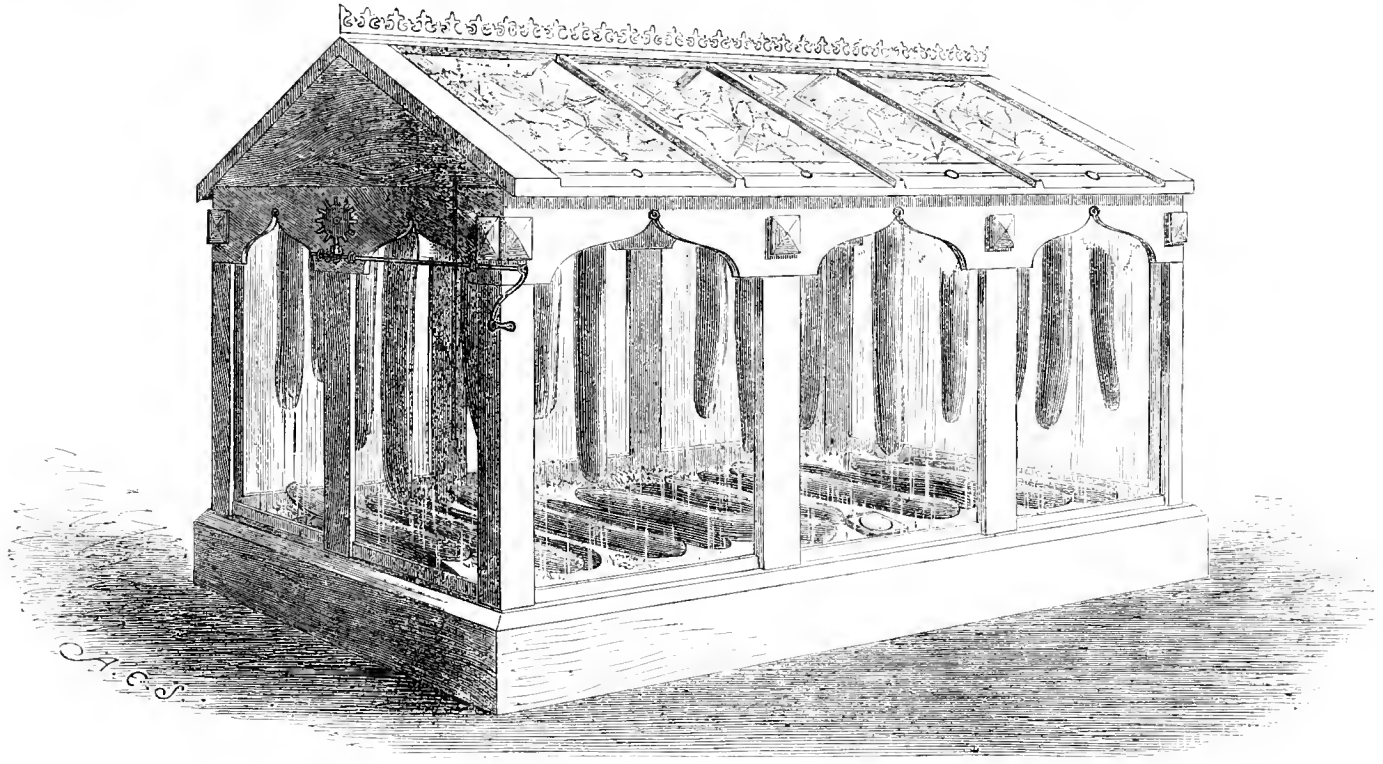

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The Best CAPSICUM, Prince of Wales	...packet	1	0
The Best CARROT, Early Stump Horn	... ounce	0	6
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The Best CUCUMBER, Rollisson's Telegraph	„	2	6
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		s.	d.
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The Best LEEK, Monstrous Carentan ...	... ounce	1	6
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The Best PEA, Dr. Maclean	... quart	7	6
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Prices, with "Key to Farriery," £2 16s. 6d. and £6 6s. Each Preparation can be had separately, carriage paid.

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REDUCED PRICES. SEASON 1876.

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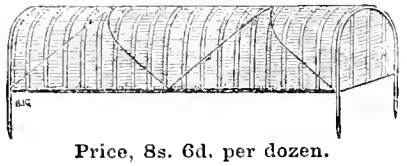
NEW PATTERN WITH DIAGONAL STAYS.

No. 76. 3 ft. long, 6 in. wide, 6 in. high.



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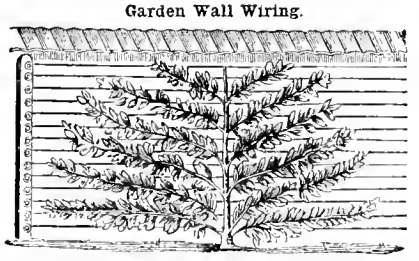

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For Neatness,—Because all the Wires are kept perfectly tight, without the use of the Raidisseur.

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GARDEN NETTING, strong, tanned, 1½d. per square yard; 1 to 4 yards wide, 500 yards, £2 15s.; Whole Nets, 12 by 45 yards, £2 10s. TIFFANY, ½-inch mesh Netting, cheap.

M. SMITH, 6, Potter Street, Worksop.

NETTING for FRUIT TREES, SEED BEDS, RIPE STRAWBERRIES, &c.

TANNED NETTING for protecting the above from Frost, Blight, Birds, &c., 2 yards wide, 3d. per yard, or 100 yards, 20s.; 4 yards wide, 6d. per yard, or 50 yards, 20s.

NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowls, 2 yards wide, 6d. per yard; 4 yards wide, 1s. per yard; ¼-inch mesh, 4 yards wide, 1s. 6d. per yard.

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HOT-HOUSE SHADINGS of various thicknesses, superior to any other yet discovered for lightness, strength, and durability, standing, as they do, all weathers.

TIFFANY of various kinds always on hand. Netting and Shading in pieces 30 yards long by 1¼ yard wide. Tiffany in pieces 20 yards long, 38 inches wide. Also Tiffany in mineralised state.

For prices, &c., apply to the above address—

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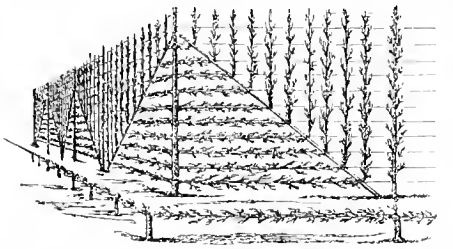

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Intermediate Standards, 10 ft. apart, at half these prices.

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4½ ft. high..	5s. 6d. ..	7s. 6d.	7 ft. high	8s. 0d. ..	11s. 0d.
5 ft. high....	6 0 ..	8 6	8 ft. high	9 0 ..	12 0
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SCREWS and NUTS, neater than Raidisseurs, 3s. 6d. per doz.

No. 13 WIRE, 10 inches apart, 2s. 6d. per 100 yards.

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VIENNA PRIZE WIRE NETTING.

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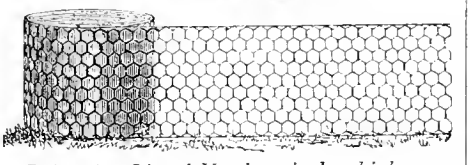

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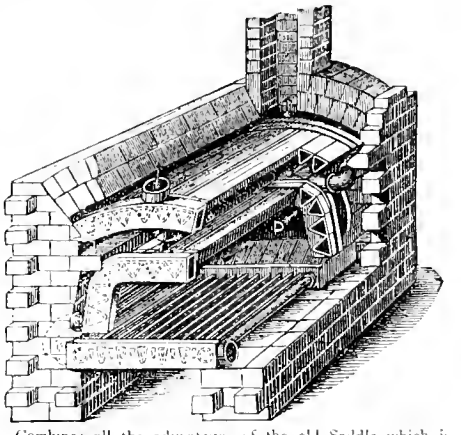

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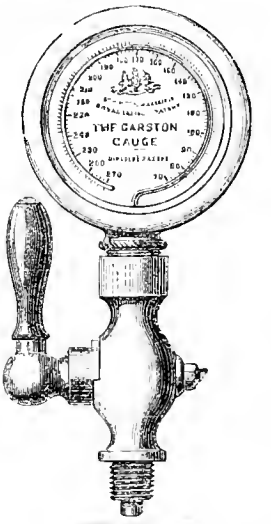

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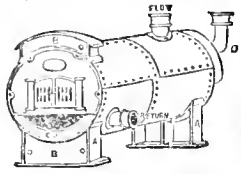

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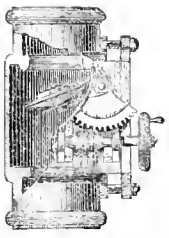

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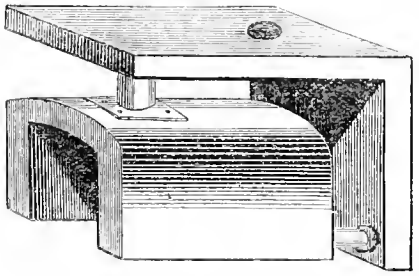

These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements—viz, the water space at back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel; the cost of setting is also considerably reduced, and likewise the space occupied; at the same time these Boilers are simple in construction, and being made of wrought iron are not liable to crack. They are made of the following sizes:—

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20 ,,	18 ,,	30 ,,	500	9 0 0
24 ,,	24 ,,	24 ,,	700	12 0 0
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24 ,,	24 ,,	36 ,,	1,000	16 0 0
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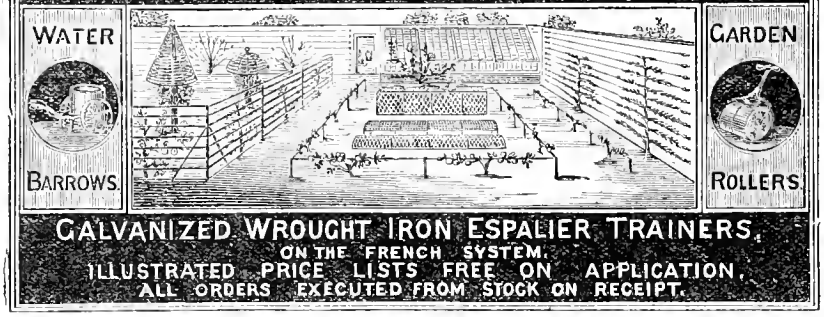

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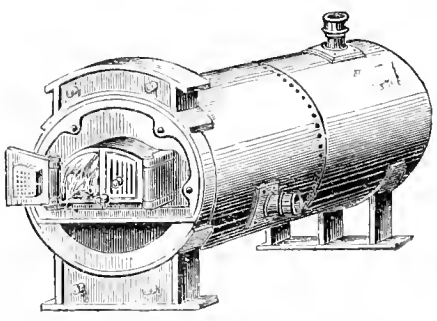
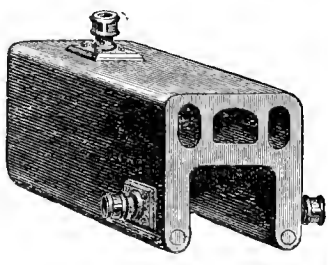


("TRENTHAM IMPROVED" BOILER.)



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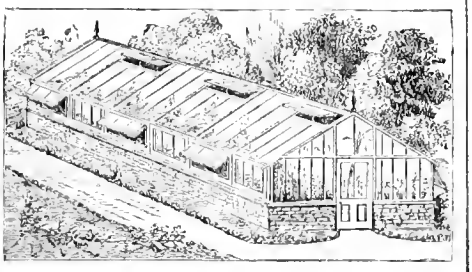

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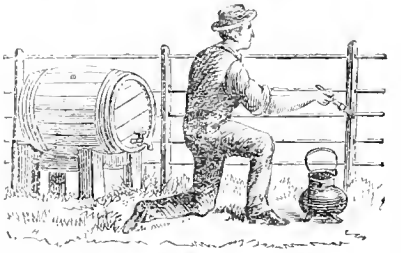

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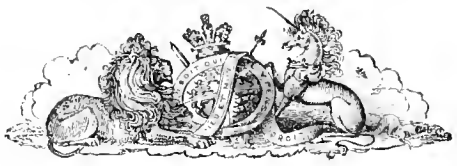

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ABIES in variety, BIOTA AUREA, ,, ,, ELEGANTISSIMA, CEDRUS DEODARA, JUNIPERUS in 50 varieties, PICEA NOBILIS, ,, NORDMANNIANA, RETINISPORAS, PINUS CEMBRA, ,, EXCELSA, ,, AUSTRALIS, ,, JEFFREYII, ,, MACROCARPA, ,, LAMBERTIANA, WELLINGTONIAS, TAXUS, about 30 varieties, THUJAS, &c.

FARM and GARDEN SEEDS.

These in great quantity, and of the best and most select descriptions.

AMERICAN PLANTS.

A large and varied Collection, containing all the choice—

RHODODENDRONS, AZALEAS, Ghent varieties, ,, Mollis varieties, HEATHS, hardy, ANDROMEDAS, KALMIAS, PERNETTYAS, VACCINIUMS, &c.

Having been grown entirely in loam, are suitable for planting in any soil, excepting heavy clay.

CLIMBING PLANTS.

A choice selection, comprising a Collection of about 60 varieties of IVIES, including—

ALGERIENSIS, CONGLOMERATA, DIGITATA, HIMALAICA, RHOMBOIDEA OBOVATA, PALMATA, PENNSYLVANICA, POETICA, SCUTIFOLIA, RÆGNERIANA, RÆGNERIANA DENTATA.

And a Collection of over 70 varieties of CLEMATIS, including all the newest and choicest varieties: also

AMPELOPSIS, ARISTOLOCHIAS, BIGNONIAS, HONEYSUCKLES, JASMINES, PASSIFLORAS, VITIS, WISTARIAS, &c.

FRUIT TREES.

Many acres, embracing several thousands of fine clean-grown Trees, of all sorts, and in every style of training.

HERBACEOUS and ALPINE PLANTS BULBS, &c.

A very choice and rare Collection, including fine selections of—

PÆONIES, DELPHINIUMS, SAXIFRAGES, CYPRIPEDIUMS, NARCISSUS, SCILLAS, CROCUS, LILIUMS, &c.

Many of which are very rare.

TOOLS, IMPLEMENTS and MACHINES,

Of every make, for the Garden, Farm and Estate.

"UNEQUALLED FOR VARIETY, QUALITY, AND EXTENT."

Priced Catalogues post-free on application.

JAMES DICKSON & SONS,

"NEWTON" NURSERIES, CHESTER.

SEED WAREHOUSE: 108, EASTGATE STREET; and IMPLEMENT WAREHOUSE: CORN EXCHANGE, CHESTER.

(*Seven minutes' walk from either of the Chester Railway Stations*)

BRANCH NURSERY—NEWTOWN, MONTGOMERYSHIRE.

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THE

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Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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ROYAL BOTANIC SOCIETY, Regent's Park, N.W.

The FIRST EXHIBITION this Season of SPRING FLOWERS will take place on WEDNESDAY, March 29. Tickets to be obtained at the Gardens only by Vouchers from Fellows of the Society, price 2s. 6d. each. Gates open at 2 o'Clock. Schedules of Prizes and all particulars can be had by post.

ROYAL BOTANIC SOCIETY, Regent's Park, S.W.

EXHIBITIONS of SPRING FLOWERS, Wednesdays, March 29 and April 26.
SUMMER EXHIBITIONS, Wednesdays, May 26 and June 21
EVENING FETE, Wednesday, July 5.
SPECIAL FETE and EXHIBITION, Thursday, June 1.
Schedules of Prizes and Tickets are now being issued.

Notice.

ROYAL AQUARIUM SUMMER and WINTER GARDEN.—SCHEDULES of all the FLOWER and FRUIT EXHIBITIONS are now ready, and may be had by applying to
JOHN WILLS, Superintendent of Horticultural Exhibitions, Royal Aquarium Summer and Winter Garden, Westminster, London, S.W.—Feb. 9.

THE BLACKBURN FLORAL and HORTICULTURAL SOCIETY'S ANNUAL EXHIBITION, on JUNE 5, 6, and 7. The following PRIZES are Open to NURSERYMEN:—Ten Stove and Greenhouse Plants (not less than six in bloom), £10, £7 10s., and £5. Thirty-six Cut Roses, £5 and £3; twenty-four Cut Roses, £3 and £2; twelve Cut Roses, £2 and £1 10s.
SCHEDULES, &c., may be had from WM. DITCHFIELD, Hon. Sec., Exchange, Hays, Blackburn.

THE INTERNATIONAL POTATO EXHIBITION of 1876 will be held at the Alexandra Palace, on SEPTEMBER 28 and 29, when PRIZES amounting in value to upwards of ONE HUNDRED and THIRTY POUNDS will be awarded.
The Schedule is now ready, and may be obtained on application to PETER McKINLAY, Esq
23, Upper Thames Street, London, E.C.—March 7.

GLASGOW and WEST of SCOTLAND HORTICULTURAL SOCIETY.
EXHIBITIONS for 1876.
SPRING EXHIBITION, March 29, in City Hall.
SUMMER EXHIBITION, May 10, in Crystal Palace, Botanic Gardens.
AUTUMN EXHIBITION, Sept. 12 and 13, in City Hall.
Nearly SEVEN HUNDRED POUNDS offered in PRIZES. Schedules may be had from
FRANC. GIBB DOUGALL, Secretary.
157, Canning Street, Glasgow.—March 11, 1876.

THE BURTON-ON-TRENT FLORAL and HORTICULTURAL SHOW.
The FIRST EXHIBITION of the Season will be held on JUNE 28. Open to all England. £20, £10, and £5 will be given for the best twelve Stove and Greenhouse Plants.
Schedules and further information may be obtained by applying to Mr. WM. YEOMANS, Sec.
114, Derby Street, Burton-on-Trent.

Exhibition of Hyacinths and Tulips.

WM. CUTBUSH AND SON beg to announce that their Collection of HYACINTHS and TULIPS will be Exhibited at the Alexandra Palace, Muswell Hill, on MONDAY the 20th inst., and following days.
Highgate Nurseries, London, N.

SUTTON'S GRASS SEEDS for PASTURES, 22s. 6d. to 36s. per Acre, Carriage free.

SUTTON'S GRASS SEEDS for PARK GROUNDS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for GARDEN LAWNS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for CROQUET GROUNDS, 20s. per Bushel. Carriage free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

To the Trade.

STRONG MAIDEN PEACHES, PEARS, CHERRIES; GREEN HOLLIES, from 12 to 24 inches; to be offered for cash cheap. Address, for price,
D. HEFFERMAN, High Street, Egham, Surrey.

PEACHES and NECTARINES, in pots, set with Fruit; the Trees have been forced, and the Fruit is from the size of an Almond to that of a Walnut. Price, 7s. 6d. to 10s. 6d.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

To the Trade.

ASPARAGUS, 1-yr., 2-yr., and 3-yr. TRIPŒOLUM CANARIENSE.
JAMES BIRD, American Nurseries, Downham.

ASPARAGUS, SEAKALE, DAHLIAS, and VERBENAS. Price to Trade on application to KELWAY AND SON, Royal Nurseries, Langport.

PARSNIP SEED.—True Guernsey Hollow Crown, 6d. per oz., free by post on receipt of stamps.
J. H. PARSONS, Market Place, Guernsey.

The Best Late Celery in Cultivation is

WILCOX'S DUNHAM RED, 1s. per packet.
J. ROBSON, Seedsman, Altrincham.

SPLENDID CABBAGE PLANTS, in any quantity and at moderate prices. Robinson's Champion Drumhead and Enfield Market. Apply to the Steward, Mr. T. DAVIES, Tangley, near Guildford.

To Potato Growers—For Sale.

THE AMERICAN CLIMAX POTATO.—This splendid variety in any quantity. For price, &c., apply to
Mr. THOS. ELEY, Merchant, Sible Hedingham, Essex.

SEED POTATOS for Sale—a great variety. List of prices sent post-free on application.
JOHN BATH, Potato Salesman, 34, Wellington Street, Covent Garden, W.C.

RED-SKIN FLOURBALL SEED POTATOS, 7s. 6d. per cwt., 4s. per half cwt, bag included. Send Post-office order or stamps to
R. AND F. ALLUM, Nurserymen and Seedsmen, Tamworth.

Hothouses, Hot-water Apparatus, &c.

HALLIDAY AND CO., HOTHOUSE BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates and Plans free. Best Construction! Best Materials! Best Workmanship! Catalogues free.
Offices: 22, Barton Arcade, MANCHESTER.

CONSIGNMENTS wanted of best FRUITS and VEGETABLES by GEO. LAXTON, JUN., Salesman, Covent Garden Market. Unexceptionable references as to cash returns.

WANTED, for Cash, at once, 200 to 400 strong cuttings of MRS. POLLOCK GERANIUM; 200 BIJOU, and 200 CLOTH OF GOLD. Price to
C. WHITEHOUSE, Brereton Nursery, Rugeley.

WANTED, WHITE DOUBLE ROCKET, OLD CLOVE CARNATIONS, and MULE PINKS. State price per dozen and per 100, to
Mr. SORLEY, Mayfield, Falkirk, N.B.

WANTED, MANETTI STOCKS.—Send sample and quantity to offer with price per 1000, to
G. W. PIPER, Nurseryman, Uckfield, Sussex.

WANTED, MANETTI ROSE STOCKS. Send sample and price per 1000 to
CRANSTON AND MAYOS, Cranston's Nurseries, Hereford.

WANTED, strong HAZEL, about 3 feet. Apply to
W. AND J. BROWN, Nurserymen, Stamford.

WANTED, two dozen EUCALYPTUS GLOBULUS. State size, age, and price in pots, to
CLARK BROTHERS AND CO., 65, Scotch Street, Carlisle.

WANTED, a quantity of EUONYMUS (Green), from 1 to 2 feet high, nice bushy stuff; also large well-grown FICUS ELASTICA, and hardy PALMS and FERNS. Send sizes and prices to
G. REEVES SMITH, Aquarium, Brighton.

WANTED, SHALOTS.—State price per cwt. and quantity for disposal, for cash, to
POPE AND SON, Market Hall, Birmingham.

CARTER'S GRASS SEEDS for Lawns and Parks, 20s. per bushel.

CARTER'S GRASS SEEDS for Permanent Pastures, 22s. 6d. to 36s. per acre.

CARTER'S GRASS SEEDS. Carriage Free. To suit all Soils.

CARTER'S GRASS SEEDS for Renovating Meadows and Lawns, 18s. to 20s. per bush.

CARTER'S, THE QUEEN'S SEEDSMEN, 237 and 238, High Holborn, W.C.

Hardy Single Primroses.

L. T. DAVIS offers strong Plants, in great variety of colours (no common), at 12s. per 100. Carriage free to Belfast.
Ogle's Grove Nursery, Hillsborough, Co Down.

New Roses for 1876

H. BENNETT offers a careful selection of the above, in plants not to be equalled; unusually fine this season; ready in March. DESCRIPTIVE LISTS post-free.—Manor Farm Nursery, Stapleford, Salisbury.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy.
The Ottershaw Nursery, Chertsey

New Roses for 1876.

JOHN FRASER, of the Lea Bridge Road Nurseries, Leyton, E., has now ready for delivery strong Plants of the best varieties of NEW ROSES for 1876.
DESCRIPTIVE PRICED LIST on application.

Thorns, Thorns, Thorns.

PARKER AND BUSH offer extra strong THORN QUICK, 2 to 3 feet, three times transplanted. Price and samples on application
St Michael's Hill Nursery, Bristol.

GAME COVERTS.
Pheasants at your front door.
See Advertisement in *Gardeners' Chronicle*, March 4, p. 292.

JAMES SMITH, Darley Dale Nurseries, near Matlock, offers 100,000 MOUNTAIN ASH, an excellent tree for underwood, 2 to 3 feet, 22s. per 1000; 3 to 4 feet, 27s. 6d. per 1000; 4 to 5 feet, 30s. per 1000, 5 to 6 feet, 50s. per 1000; also up to 8, 10, and 12 feet

LARCH.—20 000 very fine grown Larch, 2 to 3 feet, for Disposal. Apply to
B. WOOD, Nurseryman, Charlton Kings, Cheltenham.

LARCH.—10,000, 1 to 1½ foot, at 15s. per 1000; 10,000, 1½ to 2 feet, at 25s. per 1000; 8000, 2½ to 3½ feet, at 35s. per 1000.
JAMES SMITH, Darley Dale Nurseries, Matlock.

EUCALYPTUS GLOBULUS (Blue Gum of Australia).—A supply of Seed always kept on hand from the establishment of Messrs. Thomas Lang & Co., Melbourne.
JOHN WILSON, Seedsman, Whitehaven.

To the Seed Trade.

OUR WHOLESALE SPRING CATALOGUE of AGRICULTURAL SEEDS is now ready, and may be had on application.
MINIER, NASH AND NASH, 60, Strand, London, W.C.

CHARLES TURNER'S SEED CATALOGUE is now ready, containing a selection of the best varieties only, including his New Pea, "Dr. Maclean," and "The Schoolmaster" Potato.
The Royal Nurseries, Slough.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Brixelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

VERBENAS, VERBENAS, VERBENAS.—White, Purple, Scarlet, and Pink; also twelve extra choice named varieties, strong, healthy-rooted cuttings, perfectly free from disease, 6s. per 100, 50s. per 1000, for cash.
H. BLANDFORD, The Dorset Nurseries, Blandford.

Verbenas, Verbenas, Verbenas.

WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

Hepatica, nice varieties (Cheap)

J. VANDERSWAELMEN, NURSERYMAN, Gendbrugge, Ghent, Belgium, has a large stock. Prices per 100 and 1000 on application.

For Sale.

STOVE PLANTS, a fine collection, including a few ORCHIDS. To be Sold cheap. Apply to
W. HYDER, Seedsman, St. Mary Cray, Kent.

MR. A. CHANDLER, HORTICULTURAL VALUER.—Nurseries and Private Collections of Plants valued on reasonable terms. Address,
Mr. A. CHANDLER, Underhill Road, Dulwich, S.E.

SALES BY AUCTION.

Established and Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, March 20, at half-past 12 o'Clock precisely, a small COLLECTION of ESTABLISHED ORCHIDS, the property of Mr. W. Conquest, of Canterbury Road, Brixton, S., comprising fine healthy plants of Cattleyas, Oncidiums, Dendrobiums, Vandas, Cypripediums, Calanthes, &c.; also an importation of Musas and Crinums from the East Indies, and several cases of Saccolabiums.

On view the morning of Sale, and Catalogues had.

Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, March 23, at half-past 12 o'Clock precisely, a Collection of ESTABLISHED ORCHIDS, including the following and many other extremely rare kinds:—

Cattleya Eldorado splendens
Oncidium concolor
Lælia Wallisii
Oncidium Marshallianum
,, curtum
,, Forbesii
Cattleya Dowiana
Cymbidium eburneum
Lælia anceps Barkeriana
Odontoglossum Roezlii
Lælia elegans Andersoni, one of the most handsome Lælias known; from the Meadow-bank collection
Batemannia Wallisii
Oncidium superbiens
Pescatorea Roezlii
Bollea Lalindei
Cattleya aurea
Oncidium sarcodes
,, macranthum hastiferum
Aerides japonicum, in flower
Odontoglossum sceptrum, in flower
Cypripedium Sedeni
,, Dominianum
,, lævigatum

And various other choice species.

Also a dozen plants of PHALÆNOPSIS SCHILLERIANA.

On view the morning of Sale, and Catalogues had.

Five Hundred Odontoglossum crispum.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, March 23, at half-past 12 o'Clock precisely, 500 imported plants of ODONTOGLOSSUM CRISPUM (Alexandræ), and 200 ODONTOGLOSSUMS of various sorts, imported without names from the mountainous districts of the United States of Colombia.

On view the morning of Sale, and Catalogues had.

Sarracenia Drummondii—Sarracenia flava.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, March 23, at half-past 12 o'Clock precisely, a large quantity of these extremely rare plants, which have just arrived in the best possible condition. Also an importation in good condition of SARRACENIA PURPUREA.

On view the morning of Sale, and Catalogues had.

Odontoglossum cirrhosum—Odontoglossum Hallii.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, March 23, at half-past 12 o'Clock precisely, Twenty good growing plants of the new and exceedingly beautiful ODONTOGLOSSUM CIRRHOSUM; also Twenty plants of ODONTOGLOSSUM HALLII, some of them very large fine masses.

On view the morning of Sale, and Catalogues had.

Odontoglossum Lindeni.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, March 23, at half past 1 o'Clock precisely, a quantity of the rare Odontoglossum Lindeni; only a few plants (true) of this handsome species are known to exist. This importation has arrived per steamer *Severn* in the best possible condition. Many of the plants to be sold are in unusually fine masses.

Also an importation of the scarce ONCIDIUM ALCICORNE.

On view the morning of Sale, and Catalogues had.

Important Sale of Rare Plants,

From the Collection of the late S. RUCKER, Esq., of West Hill, Wandsworth.

MR. J. C. STEVENS begs to announce that he has received instructions to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and THURSDAY, April 5 and 27, at half-past 12 o'Clock precisely each day, the surplus plants from the Collection of the late S. Rucker, Esq., of West Hill, Wandsworth, comprising specimen AZALEAS and PALMS, a Collection of FERNS, including Trichomanes, Gleichenias, &c.; a very fine Collection of NERINES, including Fothergilla major, coruscans, flexuosa, many of them fifty bulbs in a pot; CROTONS, DRACÆNAS, and MISCELLANEOUS STOVE PLANTS, PITCHER PLANTS, a choice Collection of NEPENTHES, and many other rare and valuable plants.

On view the mornings of Sale, and Catalogues had.

Sale of the Collection of Orchids formed by the late S. RUCKER, Esq., of Wandsworth.

MR. J. C. STEVENS has received instructions from Messrs. James Veitch & Sons, of Chelsea, to offer for SALE on WEDNESDAY and THURSDAY, April 12 and 13, the Collection of ORCHIDS recently purchased by them from the Executors of the late S. Rucker, Esq. This collection comprises many fine and rare kinds. It was formed by Mr. Rucker during the last five years, and it is not too much to say that almost every plant was selected for its variety. The plants are healthy, vigorous, young-growing specimens, and well worthy the attention of all Orchid growers. Amongst others will be found the following:—

Oncidium Rogersii (true), the only plant at present saleable in England
Lælia anceps Dawsoni
Odontoglossum vexillarium (strong)
,, Roezlii (strong)
,, Alexandræ (several)
Masdevallia Wallisii (true)
,, tovarensis
,, Harryana
,, Lindeni
,, Veitchii
Dendrobium Wardianum
,, crassinode
,, aggregatum majus (splendid masses)
,, Jamesianum (very fine)
Phalænopsis grandiflora
,, amabilis
,, Schilleriana (a very fine lot of all the kinds)
Cattleya labiata (true autumn-flowering varieties)
,, Mendelii (splendid plants), &c.

On view the mornings of Sale, and Catalogues had.

Pine-apple Nursery, Edgware Road, W.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions from Mr. J. Weeks to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., almost without reserve, on THURSDAY, April 20, at half-past 12 o'Clock precisely, the Valuable PREMISES and GOODWILL of the PINE-APPLE NURSERY, Maida Vale, Edgware Road, W., together with Dwelling-house, Seed Shop, and Offices, and all the extensive ranges of Horticultural Buildings and Sheds.

Held:—As to part, for a term which will expire in 1909, at a Ground-rent of £45; and, as to the remainder, for a term which will expire in 1923, at a Ground-rent of £89. The Nursery has, within the last three or four years, been very greatly enlarged and improved, upwards of £10,000 having been expended in additions, improvements, and repairs; and it is considered in the Trade to be the most important Establishment of the kind in the World. It possesses an extensive connection both in the Nursery and Seed Trade, amongst the Nobility and Gentry and their Gardeners. Part of the purchase-money may remain on Mortgage.

Nurseries in the immediate neighbourhood of London are seldom valued by the acre; but this is an exception, as the Horticultural Buildings and Show-grounds cover about 2½ Acres, and form a most valuable property, and well adapted for a Skating Rink (permission for which can no doubt readily be obtained), as well as a Nursery Business.

For further particulars apply to Messrs. KEARSEY, SON, AND HAWES, 35, Old Jewry, London, E.C.; and Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

The Pine-apple Nursery, Maida Vale, W.

PROPOSED PARTNERSHIP.—The Advertiser, a Gentleman in the Trade, who believes that the above Nursery possesses great facilities for doing an extensive First-class Business, would be happy to meet with a thorough practical Horticulturist, with Capital at command, to join him on equal terms in the purchase of the Business, and for carrying it on in Partnership.—For an introduction, apply to Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

Important Notice

To the NOBILITY, GENTRY, PLANT AMATEURS, and the TRADE.

MESSRS. PROTHEROE AND MORRIS, who for many years past have been obliged to refuse numberless Sales in consequence of their not being able to obtain a suitable room in which to conduct them, are now in a position to undertake a limited number of First-class Sales, having made arrangements with the authorities of the Auction Mart, Tokenhouse Yard, near the Bank of England, to have the use of the large Estate Room on the ground floor for the purpose. Its position in the very heart of the City, its close proximity to all the great centres of the monetary world, its easy access, large dimensions, and admirable proportions, render it the most attractive Auction Room in London.

Messrs. PROTHEROE AND MORRIS are desirous of directing the attention of those who wish to avail themselves of these facilities for disposing of their Collections of Choice Plants to the advisability of their giving as early an intimation as possible of probable Sales, as the pre-arrangement and the classification of the Auctions are always made with a view to insure the attendance of numerous buyers.

City Auction Rooms, 38 & 39, Gracechurch Street, E.C.

IMPORTANT UNRESERVED SALE of a choice Collection of CARNATIONS, PICOTEES, and PINKS, of fine growth; about 500 Standard Dwarf and Climbing ROSES, selected hardy CONIFERÆ, SHRUBS, AMERICAN PLANTS, FRUIT TREES, with some fine Double CAMELLIAS, AZALEAS, CYTISSUS, CINERARIAS, DEUTZIAS, CYCLAMENS, &c., in flower; choice LILIUMS, RANUNCULI, ANEMONES, SEEDS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, on TUESDAY, March 21, at half-past 12 o'Clock precisely.

On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 98, Gracechurch Street, E.C.; and Leytonstone, E.

Leatherhead.

SALE of Valuable NURSERY STOCK, in consequence of the expiration of Lease.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. D. Christie to SELL by AUCTION, on the Premises, The Nurseries, Leatherhead, on WEDNESDAY, March 22, at 12 for 1 o'Clock precisely, a large quantity of Valuable NURSERY STOCK, consisting of a considerable number of large and effective Coniferæ; also many thousands of smaller Evergreens, including 5000 English Yews, 4000 Common Laurels, 4000 Box, Laurustinus, Cupressus, Thujas, Irish Yews, Rhododendrons, Arbutus, &c.; 2000 Lilacs, a quantity of Deciduous Shrubs and large Ornamental Trees, Fruit Trees, &c.

May be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers.

Videon's Nursery, Maida Vale and St. John's Wood, N.W.

MESSRS. PROTHEROE AND MORRIS beg to announce that this PROPERTY (offered by Auction at the Mart on Monday last) was not Sold, and can now be TREATED FOR PRIVATELY. Average unexpired term of Leases, forty-two years. Ground rent, £42.

For further particulars and price, apply to the Auctioneers and Valuers, 98, Gracechurch Street, E.C.

To Noblemen, Gentlemen, and the Trade.

IMPORTANT and ATTRACTIVE SALE of CHOICE STOVE and GREENHOUSE PLANTS.

MESSRS. LYTHALL AND CLARKE are favoured with instructions from Messrs. Felton & Sons to OFFER by AUCTION, at the Midland Counties Repository, Moseley Street, Birmingham, on TUESDAY, April 4 next, at 12 o'Clock, a very fine Collection of SPECIMEN PALMS, DRACÆNAS, ALOCASIAS, DIEFFENBACHIAS, MARANTAS, FERNS, CAMELLIAS, &c.; including Plants, in the finest possible health and condition, of Dracænas Baptistii, Chelsoni, amabilis, Mooreana, Youngi, splendens, gloriosa, &c.; Pandanus Veitchii, Marantas Veitchii, Lindeni, and magnifica; Alocasia metallica, A. Sedeni, a noble plant of Dieffenbachia imperialis, a grand specimen of Phormium tenax variegata, with six large growths; and a large quantity of other splendid plants and Ferns. A Collection of NEW and RARE PLANTS, including the wonderful foliage plant, Bertolonia Van Houttei, and grand varieties of Gloxinias, Caladiums, &c.

Messrs. L. & C. have the greatest confidence in drawing the attention of their numerous patrons to this Sale, as the plants cannot well be surpassed either in variety or cultivation.

Castle Malgwyn, near Cardigan.

IMPORTANT SALE of a very valuable Collection of STOVE and GREENHOUSE PLANTS.

MR. THOMAS GRIFFITHS has been favoured with instructions to SELL by AUCTION, at the above place, on THURSDAY, March 23, the whole of the valuable Collection of Specimen CAMELLIAS, ORANGE TREES, HEATHS, FERNS, and other rare plants, some of which cannot be surpassed, and all perfectly free from insects.

Catalogues will be issued immediately, and may be had on application to the Auctioneer.

Cardigan, March 8.

Preliminary.—Sale of a very Valuable Collection of Specimen and Half-specimen STOVE and GREENHOUSE PLANTS, the whole of which have been exhibited.

ARTINGSTALL AND HIND (the surviving Partners of the late Firm of CAPES, DUNN & Co.) beg to announce that they have received instructions from Messrs. E. Cole & Sons to SELL by AUCTION, about the MIDDLE of APRIL, at their Nurseries, Withington, near Manchester, the valuable Collection of EXHIBITION PLANTS.

Catalogues will be prepared in due course, and further information may be had by applying to the Auctioneers, 5, Princess Street, Manchester.

Wanted, a Nursery, either in Kent or Sussex.

WANTED, to RENT, a NURSERY, from 2 to 5 acres in extent, near a Town and Railway Station, in either of the above counties.

Z., *Gardeners' Chronicle* Office, W.C.

To Florists.

TO BE LET, with Immediate Possession, in full working Order, a NURSERY, containing 9 acres of Land, 1500 feet run of Heated Houses, Pits, Horses, Vans, and everything as it stands. Apply to

NERO, Post Office, South Mimms, near Barnet.

TO BE LET, with Immediate Possession, a LARGE VINERY, covering an area of nearly 4000 feet superficial, well-stocked with First-class Vines, in fine bearing order; also, GARDEN adjoining. Apply to

W. C. MOFFATT, Friar Street, Reading.

To Gentlemen, Gardeners, and Amateurs.

TO BE DISPOSED OF, a FLORIST'S BUSINESS.—Six Houses, well stocked with Plants; also HOUSE and SHOP, with Fruiterer's and Florist's Business. Within half an hour of Covent Garden. Apply to

FLORIST, 53, Loughborough Road, Brixton, S.

To Florists, Nurserymen, and Others.

To be DISPOSED OF, by PRIVATE CONTRACT, a

FLORIST'S BUSINESS.

For further particulars, apply to

MESSRS. C. AND J. CADLE,
Land Agents and Auctioneers, Gloucester.

Wood Engraving.

MR. W. G. SMITH, ARTIST and ENGRAVER on WOOD, 15, Mildmay Grove, London, N.

GLOBE ARTICHOKE and ASPARAGUS ROOTS, of all sizes and in any quantity; also a few thousands of PRICKLY COMFREY ROOTS. Prices on application to

Messrs. JOHN AND GEORGE McHATTIE, Seed Merchants, Chester.

Sow Now.

YOUNG'S NONSUCH PEA.—The most abundant and perpetual bearing of all Marrowfat Peas. Half-pint trial packets free per post for 1s. 6d., per quart, 5s., through all Seedsmen, or of

CHARLES YOUNG, Balham Hill Nursery, S.W.

WM. POTTEN can still supply select GERANIUMS as advertised in *Gardeners' Chronicle*, March 4.

W. P.'s CATALOGUE for 1876 is now ready, and will be sent post-free to all applicants.

Camden Nursery, Sissinghurst, Staplehurst, Kent.

To the Trade.—Seed Potatos.

H. AND F. SHARPE are prepared to make Special Offers of SEED POTATOS grown on their own Farms from the finest selected stocks. Their List this season comprises all the English and American varieties worthy of cultivation. The prices will be found very moderate.

Seed-growing Establishment, Wisbech.

Violas for Spring Bedding.

CHARLES TURNER can supply these effective Spring Flowers in nine distinct varieties. Strong plants, 2s. 6d. per dozen, 15s. per 100.

The Royal Nurseries, Slough.

Lilium auratum.—Orchids.

W. F. BOFF offers magnificent Bulbs of LILIUM AURATUM, at 6s., 9s., and 12s. per dozen; one of each size post-free for 36 stamps. W. F. B. also offers ORCHIDS, good sorts, nice plants, at 21s., 30s., and 42s. per dozen.

203, Upper Street, Islington, N.

To the Trade.

JACS. JURRISSEN AND SON beg to call particular attention to their large stock of FRUIT TREES, Dwarf-trained PEACHES and APRICOTS, Standard ORNAMENTAL TREES and SHRUBS, HOLLIES, ROSES, CONIFERÆ, and FOREST TREES.

Wholesale TRADE LIST now ready, free on application.

Nurseries, Naarden, near Amsterdam, Holland.

PINES FOR SALE.—110 Queen Pines, Succession, 40 of them in Fruiting Pots; clean, healthy Plants. Apply to

Mr. WHELLANS, Gardener to Mr. Sydney Lawrence, Poynder's Road, Clapham Park, S.W.

PEAR STOCKS.—The Subscribers have on hand a quantity of 3-yr. transplanted Pear Stocks, very fine, which they will dispose of very cheap, as the ground must be cleared.

THOMAS METHVEN AND SONS, Leith Walk Nurseries, Edinburgh.

CUCUMBER PLANTS—"TELEGRAPH," strong plants, now ready. Price, including box and packing, 12s. per dozen.
A. WATKINS, Nursery, Bishop Stortford.

Hardy Florist Flowers.

THOS. S. WARE'S 1876 SPRING CATALOGUE of the above, including Carnations, Hollyhocks, Pansies, Phloxes, Pæonies, and others, is now ready, and may be had post-free on application.
Hale Farm Nurseries, Tottenham, London.

To the Seed Trade.

H. AND F. SHARPE'S special SPRING CATALOGUE of home-grown MANGEL WURZEL, TURNIP, and other AGRICULTURAL and GARDEN SEEDS, is now ready, and will be forwarded on application.
Seed Growing Establishment, Wisbech.

Hardy Primrose Seed.

L. T. DAVIS offers to the Trade a quantity of the above, from selected varieties of a splendid strain, chiefly high-coloured sorts. Price per ounce or pound on application.
Ogle's Grove Nursery, Hillsborough, Co. Down.

Wright's Prize Celeries.—Sow Now.

WRIGHT'S Grove Red, Grove White, and Giant White CELERIES, per packet, 1s. Orders solicited, enclosing value in stamps or Post-office Order.
WILLIAM WRIGHT, Seedsman, Retford, Notts.

SPECIAL OFFER of SEEDLING RHODODENDRONS, 2-yr. and 3-yr., £7 10s. and £12 10s. per 100,000; 4-yr. and 5 yr., 7s. 6d. and 10s. per 1000.
JOSEPH SMITH, Jun., Moor Edge Nurseries, Tansley, near Matlock, Derbyshire.

Cupressus Lawsoniana.

R. AND G. NEAL have the above to offer, 12 to 18 inches high, twice transplanted, bushy and well-rooted plants, at 20s. per 1000, delivered on rail in London.
The Nurseries, Wandsworth Common, S.W.

EAST LOTHIAN INTERMEDIATE STOCKS.—Carefully saved seed of the above magnificent Stocks, in separate packets of White, Purple, Scarlet, and White Wall-leaved, at 1s., 2s. 6d., and 5s. each colour. The Trade supplied
THOMAS METHVEN AND SONS, Edinburgh.

Vines, Vines, Vines.

B. S. WILLIAMS begs to announce that his stock of VINES is now in fine condition, and ready for sending out. It comprises all the leading kinds, strong Canes of Pearson's Golden Queen.
For prices and description see BULB CATALOGUE.
Victoria and Paradise Nurseries, Upper Holloway, London, N

Notice.—Seeds, Seeds.

WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds.
CATALOGUES now ready, which contain every requisite, at air prices, post-free on application.
Highgate, London, N.

Fruiting and Planting Vines.

THE COWAN PATENTS COMPANY (late Meredith) have still on hand a good selection of the above. Catalogues and prices on application. They can also offer good Fruiting and Succession PINES.
The Vineyard, Garston, near Liverpool.

Carnations, Picotees, and Cloves.

CHARLES TURNER is now prepared to send out strong plants from his complete collection, both of the border and for exhibition. Catalogues on application.
The Royal Nurseries, Slough.

To the Trade—Nurserymen and Seedsmen.

FOR SALE, thirty or forty Specimen Plants of THUJA AUREA, 24 to 30 inches; also 3 or 4 bushels of LITTLE GEM PEA, selected purposely for stock. Apply to
Mr. J. MYATT, Offenham, Evesham.

Hardy Perennials Illustrated.

THOS. S. WARE'S CATALOGUE of the above for 1876, including New, Rare, and Choice Alpines, Herbaceous Plants, Aquatics, Bog Plants, and a few Bulbs, is now ready, free on application.
Hale Farm Nurseries, Tottenham, London.

Grass Seeds.

BOLTON AND CO. have to offer fine new GRASS SEEDS for Permanent Pasture, and shall be happy to forward prices to buyers. Very liberal terms to large purchasers.
BOLTON AND CO., Seed Merchants, Wood Green, London, N.

Mangel and Swede.

JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself.
Bardney Manor, Lincoln.

POLYANTHUS, choice mixed, 1s. 6d. per packet; also extra choice mixed (from fine laced flowers), 2s. 6d. per packet, post free. Flower Seeds of every description of the choicest quality.
JAMES DICKSON AND SONS, Seed Growers, 108, Eastgate Street, Chester.

GIANT ASPARAGUS PLANTS, the best that money can procure, all certain to grow, 2s. 6d. per 100. This delicious vegetable does not require half the expense usually incurred in planting it. See RICHARD SMITH'S SEED LIST for 1876.
Extra strong SEAKALE, 2s. per dozen.
RICHARD SMITH, Nurseryman, Worcester.

AUSTRIAN PINE, twice transplanted, extra fine, 2 to 2½ feet, 8s. per 100; 4 to 5 feet, four times transplanted, 50s. per 100. Common LAURELS, very fine, 3 to 4 feet, 18s. per 100; Portugal do., fine bushy plants, with splendid roots, 2½ to 3 feet, 35s. per 100; 3 to 3½ feet, 45s. per 100. LIMES, 6 to 7 feet, 25s. per 100; 7 to 9 feet, 7s. per dozen. HORSE CHESTNUTS, 6 to 8 feet, 14s. per 100.
J. J. MARRIOTT, Highfield Nurseries, Matlock.

Pelargoniums, Pelargoniums.

JAMES HOLDER'S unrivalled Collection—strong healthy Plants, Show, French, and Fancy varieties, at 35s. per 100, cash. Hamper and Packing included. Extra strong plants, in 48's and 32's, at 9s. and 12s. per dozen, Basket and Packing extra.
Crown Nursery, Reading.

Mangel Wurzel.

BOLTON AND CO. beg to offer their fine stock of YELLOW GLOBE MANGEL WURZEL SEED.
Their large Champion Yellow Globe produces an immense weight per acre, and the Pedigree Mangel is the finest one grown, small top, fine clean skin, and single tap-root. Both of these superior Mangels give great satisfaction.
Moderate prices, on application.
BOLTON AND CO., Seed Merchants, Wood Green, London, N.

NEW KIDNEY POTATOS.—The best New Potatos of the Season are England's Glory, Newton Hero, Duke of Edinburgh, and Ringleader. Description and Price of these splendid varieties can be had on application. Also, a large quantity of Regent Seed, 1-yr., from Scotland, good sample, £5 per ton, cash. Apply to
G. BRAMLEY, Hambleton, near Selby, Yorkshire.

PETUNIA PHŒNICEA (Hender & Sons' superior Strain), figured in the *Florist* for January, 1876, 2s. 6d. per packet. AMARANTHUS PRINCESS OF WALES, figured in the *Floral World* for February, 1876, 2s. 6d. per packet. AMARANTHUS HENDERI, our own saving, 1s. per packet.
W. HENDER AND SONS, Seedsmen, Plymouth.

JOSEPH TREMBLE, NURSERYMAN, &c., Penrith, offers the following:—
LARCH, selected plants, stout, 2 and 3 feet.
ALDER (transplanted)—Standard Portugal LAURELS.
PINUS CEMBRA—BERBERIS AQUIFOLIA.
ENGLISH OAK.
HEDGE PLANTS, large stock, for Field and Garden Fences.
STANDARD APPLES, 3 to 5-yr. worked, fine.
P.S. We are offering some things in quantity to the Trade, and are buyers of many articles.

To Farmers, Gardeners, and Others.

CABBAGE PLANTS (Enfield Maket), 3s. per 1000; SEAKALE, for planting out, 4s. per 100; RHUBARB ROOTS, Sovereign, best and earliest in cultivation, 6s. per dozen; for planting out, 1s. per dozen. SAGE and THYME ROOTS, 5s. per 100. Best Show POLYANTHUS, 8s. per 100. DELPHINIUNS, splendid mixed colours; New PYRETHRUMS, handsome, mixed colours. Double White ROCKETS; AURICULAS, not in pots; Double Yellow WALLFLOWERS: all at 2s. per dozen. PINKS, DAISIES, 2s. per 100. White Spanish ONION SEED, 1s. 8d. per lb. JACKSON'S WHITE POTATOS (I believe the heaviest cropper in England), 8s. per cwt. Terms, Cash.
RICHARD WALKER, Market Gardens, Biggleswade

A FEW REALLY GOOD THINGS.

BROCCOLI, Christie's Self-protecting Late White. Pronounced by all who have seen it as the finest Self-protecting Broccoli in cultivation. Per packet, 1s. 6d.
CUCUMBER, Foster's X. L. Superb Ridge.—This variety is a remarkably fine hardy, long dark green Cucumber, and one that can be recommended with the greatest confidence. It is very prolific, and keeps its colour to the last. All who have seen it growing are satisfied that it cannot be surpassed, and those who have tried its flavour are convinced of its excellent quality. Length, 12 to 18 inches. Per packet, 1s.
CUCUMBER, Gherkin, true.—Fine pickling variety. Per packet, 6d.
CUCUMBER, Long Gun, true.—Superior White spine variety, very prolific. Per packet, 1s. 6d.
CUCUMBER, Dixon's York-shire Hero.—A dark green white-spine, extremely prolific. 20 to 24 inches in length. Per packet, 1s. 6d.
CELERY, Dixon's X. L. Red.—A strong grower, early, hardy, and very solid. Per packet, 1s 6d.
LETTUCE, Dixon's Champion Cos.—The largest Summer Lettuce grown. Weighs 6 lb. to 10 lb. Per packet, 6d. and 1s.
MELON, Reid's Scarlet-flesh.—A beautiful netted variety, medium size, and most delicious flavour. Per packet, 1s 6d.
PEAS, Dixon's Yorkshire Hero.—A splendid Dwarf Prolific Marrow. Height, 2½ feet. 2s. per quart.
TURNIP, Dixon's Improved Silverball. Splendid stock. Per packet, 6d.
MARIGOLD, French.—Extra choice, saved from the finest dark brown and gold varieties. Per packet, 6d.
PETUNIA, Foster's Improved Hybridised.—Extra choice, saved from a splendid collection of striped, veined, blotched, marbled, and many other colours; very superb. Per packet, 1s. and 2s. 6d.
PRIMROSE.—Extra choice mixed. Per packet, 1s.
EDMUND PHILIP DIXON, The Yorkshire Seed Establishment, Hull.

NEW FUCHSIAS of 1875, now ready to send out, carefully selected from the best kinds sent out in 1875, in good plants. Twelve select New Fuchsias, 4s; 12 best selected varieties of 1874, for 3s; 12 very fine older varieties, 2s.; all sent post free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW DOUBLE WHITE GERANIUM, "GEORGE SAND," the largest and best Double White: 12 superb varieties Double Geraniums, including "George Sand" and other new colours, in good plants, post-free for 6s.
NEW AGERATUM, DUCHESS of EDINBURGH, the best Dwarf Blue yet produced, 3s. per dozen, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW VICTORIA DAISIES.—This new strain of Double Daisies produces flowers 6 inches in circumference, on long foot-stalks 8 inches high, looking more like large Ranunculi than Daisies. They are decided acquisitions to our early spring-blooming plants. B. W. K. is now enabled to offer the following six varieties, post-free for 2s., viz.:—Albert Edward, Albert Victor, Masterpiece, Nil Desperandum, Renown, Queen Victoria; 12 newer varieties of 1873, in 12 fine varieties, for 6s., post-free; also a fine mixture of colours, unnamed, at 1s. 4d. per dozen, or 8s. per 100, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

The Most Beautiful new Pelargonium is

BEAUTY OF OXTON.
Price, 1 guinea each.
A pretty and charming novelty is the new double-flowering IVY-LEAVED PELARGONIUM, "KONIG ALBERT." Price 7s. 6d. each.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

TO THE TRADE.—LARCH, strong, 2 to 2½ and 2½ to 3½ feet, clean grown and well-rooted. PEAR STOCKS, twice transplanted; 2-yr. seedling PEARS. ASH, 1½ to 2½ feet, and 1-yr. seedlings. GEANS, 1-yr. seedlings. VIOLAS and PANSIES, bedding; and Show and Fancy do. PHLOXES, early and late.
DICKSONS AND CO., 1, Waterloo Place, Edinburgh.

PANSIES, Show and Fancy, the leading sorts, per 100 or 1000.
Bedding Pansy, "Royal Blue," awarded "Best Blue Pansy," Scottish Pansy Show, Edinburgh, June, 1875. Prices on application.
WM. PAUL, Crossflat and Greenlaw Nurseries, Paisley.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.
Mr. WEBB, Calcot, Reading.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

CABBAGE PLANTS for Sale.—Good strong well-rooted Plants of Early Battersea, Enfield Market, Improved Nonpareil, and Robinson's Champion Cattle Cabbage, delivered free on rail at 3s. per 1000, package included. Cash to accompany all orders.
S. BIDE, Alma Nursery, Farnham, Surrey.

Centaurea candidissima, or Ragusina.
WHOLESALE PRICE.

WOOD AND INGRAM offer fine summer sown plants of the above, thoroughly established in thumb pots, at 20s. per 100; package, 3s. 6d. per 100, or 2s. for 50, not less than which will be sold at the price
The Nurseries, Huntingdon.

ROBERT NEAL, JUN., and GEORGE NEAL, NURSERYMEN, Wandsworth Common, S.W., beg respectfully to call the attention of Gentlemen and Others who are planting this Spring to their large and varied stock of HARDY SHRUBS, FRUIT, FOREST, and ORNAMENTAL TREES, &c., which are now in fine condition for transplanting. An early inspection invited.
CATALOGUES may be had on application.

A. M. C. JONGKINDT CONINCK'S MAIDEN FRUIT TREES are extra strong, and all fit for Cordons. The greatest care has been taken to have the sorts true to name.
A great quantity of ROSES can be had very cheap.
WANTED, AZALEA PONTICA, fit for grafting this autumn. Send priced samples by post
Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000; and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.
Wonersh Nursery, Guildford, Surrey.

To the Trade.

SEAKALE, for planting, very fine, 30s. per 1000. 100,000 COMMON LAURELS of all sizes, from 1 foot to 5 feet, price on application.
WM. WOOD AND SON, Woodlands Nurseries, Maresfield, Uckfield, Sussex.

VINES.—A superior lot of fine CANES of all the leading sorts for Planting or Fruiting; will carry several fine bunches this year; 5s. each. L. W.'s system of packing saves half the cost of carriage.
LEWIS WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

EXCELLENT GARDEN SEEDS.
CHOICE FLOWER SEEDS.
SUPERIOR FARM SEEDS.
See Illustrated and Priced LIST, to be had free on application. The superiority of these Seeds is proved by the numerous testimonies constantly received, and those who wish for a superior article should order at once of
HARRISON AND SONS, Seed Growers, Leicester.

RHODODENDRONS.
2-yr. seedlings. | 4 to 6 inches, transplanted
3 yr. seedlings. | 6 to 10 inches, transplanted.
8 to 12 inches, transplanted.
For Prices and Samples apply to
HENRY FARNSWORTH, Matlock Bank, Derbyshire

The Best Lawn Mixture.

JAMES DICKSON & SONS' FINEST LAWN MIXTURE, for Forming New or Renovating Old Lawns, is VERY SUPERIOR to all others.
108, EASTGATE STREET, CHESTER.

For Sale

CUCUMBER PLANTS, very strong, in 60, 48, and 32 pots, of all the leading kinds; also CABBAGE and STRAWBERRY PLANTS. Wholesale and retail.
G. WALKLING, College Park Nursery, Lewisham, S.E.

Cabbage Plants.

H. J. HARDY begs to offer a quantity of strong autumn-sown plants, all true.
ENFIELD MARKET, 2s. 6d. per 1000.
ROBINSON'S DRUMHEAD, 3s. per 1000.
Packages and Carriage Free for 5000 upwards to any Railway Station in England. Cash must accompany all orders from unknown correspondents. Post-office Orders made payable at Bures. Apply to
H. J. HARDY, Stour Valley Seed Grounds, Bures, Essex.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving Size, Price, Popular and Botanical Names, Derivations, Description, Form, Colour, Foliage, Growth, Timber, Use in Arts, Native Country and Size there, Situation, Soil, and other information, with copious Index of their many Synonyms. Free by post for six stamps.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

Cheap Gladioli from Paris—Named and Seedlings.

LÉVÊQUE AND SON, NURSERYMEN, Ivry-sur-Seine, near Paris, have a large and splendid stock of good and strong flowering bulbs of GLADIOLI SEEDLINGS, equal in flower to the collection, at 8s. per 100, £3 per 1000, and £26 per 10,000—mixed, white, red, and pink; per colour, 12s to 20s. per 100; yellow, 24s. per 100; per names (100), ten sorts, 8s per 100; 25 sorts, 14s. per 100; in 50 or 100 sorts, the best, from £1 to £6, less or more, according to the novelty of the sorts All good flowering bulbs. English cheque on London, Post-office Order on Paris, accepted in payment.

Abies excelsa aurea (the Golden Spruce).

MESSRS. J. AND C. LEE beg to announce that they now intend to send out this magnificent tree. When planted in the full sunlight the whole tree is suffused with the richest gold. First-class Certificate from the Floral Committee of the Royal Horticultural Society. Well-established plants, 21s. each. A few of extra sizes, 31s. 6d. and 42s. each. The usual allowance to the Trade.
Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of
WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

CHOICE HYBRID GLADIOLI.
The Gladiolus being a special feature in our business, we respectfully invite Growers of this magnificent Autumn Flower to send for our CATALOGUE of Prize Varieties before making their annual purchases. In it all the best sorts are described, and the prices quoted are very moderate.
ROBERTSON AND GALLOWAY, Seed Merchants and Nurserymen, 157, Ingram Street, Glasgow.

New and Genuine Seeds Only.

Now ready, gratis and post-free,
BRUNNING AND CO.'S New Illustrated and DESCRIPTIVE CATALOGUE of the above for the present season, containing a selection of the choicest novelties, together with the most approved older varieties, profusely Illustrated, and contains a splendid Coloured Plate representing a group of choice Hybrid Gladioli, for the growth of which their Nurseries are noted. Forwarded post-free to all applicants.
ISAAC BRUNNING AND CO., The Yarmouth Seed Establishment, 1, Market Place, Great Yarmouth.

Carnations, Picotees, and Pinks.

ISAAC BRUNNING AND CO. beg to announce they are in a position to supply strong healthy Plants of their choice and extensive Collection of the above as follows:—
CARNATIONS, 18s. to 24s. per dozen pairs.
PICOTEES, 15s. to 21s. per dozen pairs.
PINKS, 9s. to 15s per dozen pairs.
Our One Guinea Collection of the above, which gave general satisfaction last season, contains six pairs choice Show Carnations, six pairs choice Show Picotees, twelve pairs Show Pinks, and twelve choice Carnations and Picotees mixed, for borders, sent Carriage and Package Free on receipt of Post-office Order for 21s.; double above quantities, 40s: half ditto, 11s.
CHOICE HYBRID GLADIOLI.
I. B. & Co have now ready for delivery a very large and choice Collection of the above, which they will be pleased to supply in Collections as under:—
No. 1 Collection contains 100 bulbs, in 50 choicest kinds, with names, £5.
No. 2 Collection contains 100 bulbs, in 25 choicest kinds, with names, £3 10s.
No. 3 Collection contains 50 bulbs, in 25 choicest kinds, with names, £2 10s.
Fine selections can also be supplied at 6s., 9s., 12s., 18s. to 30s. per dozen.
GLADIOLUS BRENCHLEYENSIS, splendid scarlet, 4s. per 100, 1s. 6d. per dozen.
For detailed List of varieties and prices of Carnations and Gladioli, see our NEW ILLUSTRATED SEED CATALOGUE for 1876. Gratis on application.
FASTOLF RASPBERRY (true).
We have a limited quantity of the above (for the stock of which our Nurseries have for years been famous), to offer, in strong well-ripened Canes, at 9s. per 100.
Goods Carriage and Package Free for cash with Order for all parcels value 20s. and upwards. The usual discount to the Trade.
ISAAC BRUNNING AND CO., Great Yarmouth Nurseries.

Surplus Stock.

H. LANE AND SON can offer the following at greatly reduced prices, all fine, well-grown trees:—
CUPRESSUS LAWSONIANA, 3 to 15 feet.
THUJOPSIS BOREALIS, 3 to 15 feet.
THUJA LOBBII, 3 to 15 feet.
,, GIGANTEA, 4 to 9 feet.
WELLINGTONIA GIGANTEA, 5 to 10 feet.
PICEA GRANDIS, 8 to 15 feet
,, NORDMANNIANA, 2 to 12 feet.
,, NOBILIS, 2 to 8 feet.
YEWS, Irish, 4 to 8 feet.
LAURELS, Portugal, 2 to 5 feet.
CEDRUS DEODARA, 3 to 5 feet.
ARBOR-VITÆ, Siberian, 4 to 6 feet.
HOLLIES, Variegated, 2 to 7 feet.
RHODODENDRONS, named, Seedling Hybrids and Ponticums, blooming plants; Standard WALNUTS, PRUNE DAMSONS, CHERRIES, and THORNS; Dwarf-trained APPLES, PEARS, and PLUMS: Horizontal-trained APPLES and PEARS; Pyramidal APPLES, PEARS, PLUMS, and CHERRIES
CATALOGUE and price on application.
The Nurseries, Great Berkhamsted, Herts.

ROYAL
HORTICULTURAL SOCIETY.

SPRING SHOW, MARCH 15, 1876.

AWARDS of the JUDGES.

CLASS 1.—50 HYACINTHS, single spikes, distinct. (Open.)
1st, Messrs. W. Cuthush & Son, The Nurseries, Highgate, £7.
2d, Messrs. Barr & Sugden, 12, King Street, Covent Garden, £4.

CLASS 2.—18 HYACINTHS, single spikes, distinct. (Nurserymen.)
1st, Messrs. W. Cutbush & Son, £3
2d. Messrs Osborn & Sons, The Nurseries, Fulham, S.W., £2.
3d. Messrs. James Carter & Co., Crystal Palace Nurseries, Forest Hill, S.E., £1.

CLASS 3.—12 HYACINTHS, single spikes, distinct. (Amateurs.)
1st, Mr. J. Douglas, Gr. to F. Whitbourn, Esq., Loxford Hall, Ilford, £3.
2d, Mr. J. Weir, Gr. to Mrs. Hodgson, The Elms, Hampstead, N.W., £2.
3d, Mr. J. W. Moorman, Gr. to the Misses Christy, Coombe Bank, Kingston-on-Thames, £1.

CLASS 4.—6 HYACINTHS, single spikes, new kinds, never before exhibited. (Open.)
2d, Messrs. Barr & Sugden, 15s.

CLASS 5.—12 pots of TULIPS, not fewer than 6 kinds. (Nurserymen.)
1st, Messrs. W. Cutbush & Son, £1 10s.
2d, Messrs. Barr & Sugden, £1.

CLASS 6.—12 pots of TULIPS, not fewer than 6 kinds. (Amateurs.)
1st, Mr. J. Douglas, £1 10s. | 2d, Mr. J. Weir, £1.

CLASS 10.—30 CYCLAMENS. (Open.)
1st, Mr. G. Goddard, Gr. to H. Little, Esq., Cambridge Villa, Cambridge Park, Twickenham, £3.
2d, Mr. H. B. Smith, Ealing Dean Nursery, Ealing, £2.

CLASS 11.—12 CYCLAMENS. (Nurserymen.)
1st, Mr. H. B. Smith, £1 10s.

CLASS 12.—12 CYCLAMENS. (Amateurs.)
1st, Mr. G. Goddard, £1 10s.
2d, Mr. J. James, Gr. to W. F. Watson, Esq., Redlees, Isleworth, £1.

CLASS 14.—12 CHINESE PRIMULAS, not fewer than 4 kinds. (Amateurs.)
1st, Mr. J. James, £2.

CLASS 15.—12 CHINESE PRIMULAS, not fewer than 4 kinds. (Nurserymen.)
1st, Mr. R. Dean, Ranelagh Road, Ealing £2.
3d, Messrs. Dobson & Son, Woodlands Nursery, Isleworth, £1.

CLASS 18.—6 HARDY PRIMROSES (Acaulis type), double, distinct. (Open.)
1st, Mr. R. Dean, 10s.

CLASS 19.—6 HARDY PRIMROSES (Acaulis type), single, distinct. (Open).
1st, Mr. R. Dean, 10s.

CLASS 20.—6 HARDY PRIMROSES (Polyanthus type), distinct. (Open.)
1st, Mr. R. Dean, 10s.

CLASS 22.—6 CINERARIAS, distinct. (Amateurs.)
1st, Mr. J. James, £1 10s.

MISCELLANEOUS—EXTRA PRIZES.

Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, S.W., for Groups of Orchids, Roses, Hyacinths, Tulips, &c., Gold Medal.
Mr. B. S. Williams, The Nurseries, Upper Holloway, N., for a Miscellaneous Group of Plants, Silver Medal.
Messrs. W. Rollisson & Sons, The Nurseries, Tooting, S.W., for a Miscellaneous Group of Plants, Silver Medal.
Messrs. Osborn & Sons, for a Group of Ornamental Foliaged Plants, Silver Medal.
Mr. J. Aldous, Florist, &c., Gloucester Road, South Kensington, for a Miscellaneous Group of Plants, Silver Medal.
Messrs. W. Paul & Son, Paul's Nurseries, Waltham Cross, N., for a Collection of Cut Camellias, Silver Medal.
Mr. S. Ford, Gr. to W. E. Hubbard, Esq., Leonardslee, Horsham, for a Collection of Apples and Pears, Silver Medal.
Messrs. W. Paul & Son, for a Collection of Apples, Silver Medal.

JAMES SMITH, Darley Dale Nurseries, near Matlock, offers the following:—
10,000 CUPRESSUS LAWSONIANA, 15 to 18 inches, 3s. per dozen, 18s. per 100; 2 to 3 feet, 5s. per dozen, 30s. per 100; 2½ to 3½ feet, 6s. per dozen, 40s. per 100; 3 to 4 feet, 9s. per dozen, 65s. per 100, also larger plants.
5,000 CRYPTOMERIA ELEGANS, a fine Conifer from Japan, perfectly hardy—15 to 18 inches, 8s. per dozen; 1½ to 2 feet, 10s. per dozen; 2 to 3 feet, 15s. per dozen; 3 to 4 feet, 22s. per dozen. Also CRYPTOMERIA JAPONICA and LOBBII, of various sizes
10,000 IRISH IVIES, good plants, 3s. per dozen, 10s. per 100.
10,000 PICEA NOBILIS, in perfect health, 1½ to 2 feet, 8s. per dozen, 60s. per 100; 2 to 2½ feet, 22s. per dozen; 3 to 3½ feet, 60s. per dozen.
5,000 RETINOSPORAS, fine plants, of various kinds.
100,000 FLOWERING SHRUBS, of various kinds.
10,000,000 RHODODENDRONS. See Catalogue
60,000 HARDY HEATHS.
20,000 KALMIAS, various.
10,000 LEDUMS, various.
10,000 ANDROMEDAS, various.
30,000 GAULTHERIA SHALLON.
10,000 BOX, 1½ to 2 feet.
20,000 PRIVET, Evergreen, 2 to 3 feet.
20,000 PINUS CEMBRA, fine plants, of various sizes.
10,000 ARBOR-VITÆ, American, of various sizes, an excellent plant for Hedges; also LOBBII and others.
10,000 HYPERICUM CALYCINUM.
CATALOGUES free by post.

To the Trade.

B. MALLER, Lewisham, S.E., begs to offer the following:—
NECTARINES, Dwarf-trained, £10 per 100.
CHERRIES, May Duke, Dwarf-trained, 18s. per dozen.
VINES, Black Hamburgh, in 12 and 16 pots, 30s. per dozen,
,, Buckland's Sweetwater, in 12 and 16 pots, 30s. per dozen
LAURELS, Common, 3 to 4 feet, 20s. and 30s. per 100.

Important to Farmers.

SAMUEL FINNEY AND CO., SEED MERCHANTS and IMPORTERS, Newcastle-upon-Tyne, beg to inform Agriculturists and others that their FARM SEED LIST for 1876 is now ready, and will be forwarded post-free upon application.
Established more than a century.

AVENUE TREES.

	Girth 4 ft. from ground.
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10 inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8 ,,
MAPLES, Norway, 12 to 16 feet high ..	5 to 8 ,,
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10 ,,
,, Scarlet, 10 to 14 feet high	8 to 10 ,,
,, Double, 10 to 14 feet high	8 to 10
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10 ,,
ELMS, 15 to 18 feet	7 to 9 ,,

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.
Knap Hill Nursery, Woking, Surrey.

Special Offer to the Trade.

FRUIT TREE STOCKS FOR SALE in IMMENSE QUANTITIES.
L. PAILLET, NURSERYMAN, Chatenay, near Paris, informs his Customers that he can supply for the present season any orders with which he may be entrusted at the following prices:—
QUINCE STOCKS, extra fine, £1 8s. per 1000, £13 per 10,000; No. 1, £1 per 1000, £9 per 10,000.
PEAR STOCKS, 1 or 2-yr. old, extra, 1 to 2 feet, £13 per 10,0000; do. No. 1, 8 and inches up to 1 foot, £8 per 10,000.
,, ,, transplanted, good, £15 per 10,000. [10,000.
APPLE STOCKS, 1-yr., splendid, extra, 2 to 3 feet, £13 per
,, ,, Doucin, splendid, extra, from layers, 2 to 3 feet, £13 per 10,000.
,, ,, Paradis, splendid, extra, from layers, 1½ to 3 feet, £13 per 10,000.
PLUM STOCKS, real St. Julien, 1-yr., extra, 1 to 2 feet, £14 per 10,000; do. No. 1, 8 and 9 inches up to 1 foot, £10 per £10,000. (N.B. St. Julien is the best Stock for grafting Peaches and Apricots.)
,, ,, real St. Julien, from layers, extra transplanted, £20 per 10,000; do. No. 1, do., £12 per 10,000. (N.B. St. Julien, real, from layers, is the best Stock to make fine and clean standards.)
,, Myrobolant, extra, £10 per £10,000; No. 1, £4 per 10,000.
MAHALEB STOCKS, St. Lucie, extra fine, 1½ to 2 feet, £5 per 10,000; No. 1, 8 and 9 inches to 1½ foot, £4 per 10,000.
CERASUS AVIUM (common Cherries for Stocks), fine, extra, and strong, 1 to 2 feet, £10 per 10,000; No. 1, 8 and 9 inches to 1 foot, £6 per 10,000.
L. PAILLET offers also a splendid lot of
PEACH TREES, 1-yr. old, grafted, best sorts, at £22 per 1000; the trees are from 5 to 6 feet high.
PLUM TREES, Standards, very fine and clean, very straight, grafted, all 5 feet 2 inches high, with fine heads, £5 10s. per 100; stronger size, £7 to £10 per 100.
FRUIT TREES of kinds, 1-yr. and 2-yr., grafted, large assortment of Pears, Peaches, and Apricots—all trees formed or trained on French system for wall culture, or *contre-espalier*.
ROSES, assortment of immense quantities of fine Standards, £34 per 1000; own roots, Souvenir de Malmaison and others, £14 per 1000.
WELLINGTONIA GIGANTEA PENDULA, new; and
,, ,, AUREA VARIEGATA, new. (For Prices see Catalogue and List.)
POTATOS, French and American.
N.B.—All orders may be sent direct to L. PAILLET, or to his Agents, Messrs. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London E.C. where CATALOGUES can be had on application.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham, will be glad to send their CATALOGUE for this season on application. The stock of the undernamed, in best sorts and good plants, is very large and fine:—

	Per doz. s. d.	P. 100. £ s.
Antirrhinums ..	3 6	.. 1 5
Ageratums	2 0	.. 0 12
Chrysanthemums	3 0	.. 1 0
Carnations and Picotees, single plants	6 0	.. 2 5
,, pairs	.. 11 0	.. 3 15
Clematis ..	.. 15 0	.. 5 0
Calceolarias ..	1 0	.. 0 8
Coleus	3 0	.. 1 1
Carpet Bedding plants	1 6	.. 0 10
Daisies, various colours ..	1 0	.. 0 5
Fuchsias	3 0	.. 1 0
Geraniums, tricolor	3 6	.. 1 5
,, bicolor ..	3 6	.. 1 5
,, Zonal and Nosegay in sorts for pots	3 0	.. 1 1
,, autumn struck for bedding, out of pots ..	2 0	.. 0 12
Heliotropes ..	2 6	.. 0 18
Iris germanica ..	3 0	.. 1
Lantanas	3 0	
Lobelias	1 0	.. 0 6
Succulents ..	6 0	
Greenhouse plants 12s to ..	.. 18 0	
Stove plants, 12s. to ..	.. 18 0	
Tree Carnations	12 0	

	Per doz. s. d.	P. 100. £ s.
Pelargoniums, 6s. to	9 0	
Herbaceous plants	3 0	.. 1 0
Pelargoniums: Queen Victoria and Captain Raies	.. 18 0	
Pansies, show ..	3 6	.. 1 5
,, bedding ..	2 0	.. 0 15
Pinks	3 6	.. 1 5
Pæonies	.. 12 0	.. 4 10
Pentstemons ..	3 6	.. 1 5
Pyrethrums ..	.. 10 0	
Salvias	3 0	.. 1 1
Sedums	3 0	.. 1 1
Saxifrages ..	3 0	.. 1 1
Violas	1 6	.. 0 10
Violets	2 6	.. 0 18
Roses, in pots, H.P.'s	.. 12 0	.. 4 10
Hardy Climbing plants, in pots	12 0	
Dactylis elegantissima	1 0	.. 4 6
Grape Vines 30s. to 60s		
Begonias	4 0	
Achimenes ..	2 6	
Dracænas terminalis and Cooperi	18 0	
Caladiums ..	15 0	
Epiphyllums ..	12 0	

Trade prices on application.

ANNUAL EXHIBITION OF HYACINTHS, TULIPS,

NARCISSUS, ROSES, CLEMATIS, &c.

MESSRS. JAMES VEITCH & SONS

INVITE INSPECTION OF THEIR COLLECTION OF THE ABOVE, WHICH ARE NOW IN FINE BLOOM.

The CAMELLIAS are also still very fine.

ROYAL EXOTIC NURSERY, CHELSEA, LONDON, S.W.

GRAPE VINES.

T. METHVEN & SONS

Have at present a large and very fine Stock of GRAPE VINES, thoroughly ripened, which they beg to offer at the following prices :—

First size, 7s. 6d. ; Second size, 5s. each.

T. M. & SONS had the honour of supplying to the Gardens at Glamis Castle the Vines which have succeeded so admirably under the management of Mr. Johnston ; and their present Stock is raised from eyes taken from these famous Vines.

LEITH WALK NURSERIES, EDINBURGH.

REDUCTION IN PRICES OF

YOUNG'S GOLDEN CHINESE JUNIPER

(JUNIPERUS CHINENSIS AUREA).

"The finest Golden Conifer of the day."

IT HAS BEEN EXHIBITED AT THE FOLLOWING SOCIETIES' SHOWS, WHEN THE HIGHEST HONOURS WERE AWARDED TO IT :—

Royal Horticultural, Aug. 2, 1871, First-class Certificate.
Crystal Palace, Aug. 5, 1871, First-class Certificate.
Manchester Horticultural, Sept. 10, 1872, First-class Certificate.
Glasgow and West of Scotland International Horticultural, Sept. 11, 1872, First-class Certificate.
Société Royale d'Agriculture et de Botanique de Gand, March 3, 1873, First-class Silver Medal.

On each occasion receiving the highest encominms.

	£	s.	d.	
4 to 6 inches	5	0	0	per 100.
6 to 9 „	7	10	0	„
9 to 12 „	10	0	0	„
12 to 15 „	12	10	0	„
15 to 18 „	42s. to 3	0	0	per doz.
SPECIMENS, 1½, 2, 2½, and 3 feet ...	10s. 6d., 21s., 31s. 6d., 42s., and 63s. each.			

NEW RHODODENDRONS.

BIANCHI, CAPTAIN WEBB, | LADY WINIFRED HERBERT, MRS. GEO. BROWN, | SALVINI, WM. MILTON.

☞ The above Rhododendrons having been thoroughly tested for several seasons can be confidently recommended to purchasers as really distinct and hardy late-blooming varieties, combining all the qualities most desirable in this attractive class of plants. They are now offered in good plants :—

First Size, nice Plants, £2 12s. 6d. the set. Second Size, bushy, about 1½ foot, £3 15s. the set. Third Size, bushy, ½ to 2 feet, £5 5s. the set.

NEW AUCUBAS.

AUCUBA YOUNGII (Male and Female).

These are without doubt the finest varieties of Aucuba at present known. They are the result of crossing "A. ovata," the dwarf-growing species, with "A. viridis," the strong growing green one.

They are of very robust habit, yet compact in growth ; the foliage is large, nearly round in shape, of great substance, and a rich deep shining green. The fruit on the female plant is very large, and of a deep blood-red. It received a First-class Certificate at the Royal Horticultural Society's Meeting, on March 19, 1873, and is described in the *Gardeners' Chronicle* as "a fine variety which has received a First-class Certificate for its dense habit, fine dark leaves of great substance, and large deep crimson fruit." They are valuable acquisitions to our hardy evergreens, and when known will demand a place in every collection, and will be universally planted in every garden and shrubbery where a really fine ornamental evergreen is a desideratum.

Strong Plants in pots, 5s. each ; 42s. per dozen.

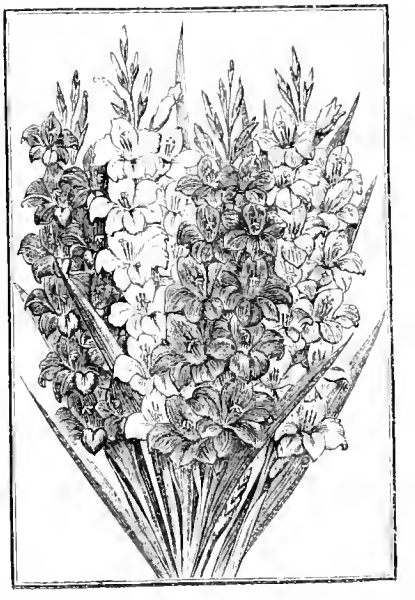
MAURICE YOUNG, MILFORD NURSERIES, near GODALMING.

THE ROYAL NORFOLK SEED ESTABLISHMENT
ESTD 1844.

DANIELS BROS.'

CHOICE GLADIOLI FOR 1876.

Our Collection of choice named Gladioli is one of the most varied and extensive in the United Kingdom, and comprises many thousands of the newest and best varieties in commerce. A fully descriptive list is published in our "Illustrated Guide for Amateur Gardeners," and will be forwarded gratis and post-free to all intending Purchasers.



Choice Named Gladioli,

In Collections carefully arranged to ensure a large variety of colour.

100 in 50 choice vars.	£5	0	0	24 in 12 fine named sorts	£1	1	0
50 in 50 choice vars.	2	15	0				
50 in 25 fine sorts ...	2	10	0	12 in 12 superb exhibition vars. ...	1	0	0
25 in 25 fine vars. ...	1	10	0				
50 in 25 superb exhibition vars. ...	3	10	0	12 in 12 fine named sorts	0	12	0
25 in 25 superb exhibition vars. ...	1	17	6	12 in 12 good named vars.	0	9	0
24 in 12 superb exhibition vars. ...	1	15	0	12 in 12 popular sorts	0	6	0

Gladioli in Mixtures.

Per dozen—s. d.		Per dozen—s. d.	
White ground varieties	3 4 0	Brilliant Scarlet and Dark Red	4 0
Rose and Light Red varieties	4 0	Yellow ground	5 0

Choicest mixed, all colours, per dozen, 3s. ; per 100, 20s. ; per 1000, 160s.

From Mr. WM. LOW, *Head Gardener to* His Grace the Duke of Grafton, *Euston Park, Thetford, Oct.* 20, 1875.

"The collection of Gladioli you supplied us with last spring I am very pleased to say, turned out to my entire satisfaction. Your selection was rich and varied and altogether excellent, not an indifferent flower amongst them. They were much admired by the family."

The Illustrated Guide for Amateur Gardeners,

Containing 100 pages of beautifully illustrated Letterpress, two superb coloured Plates, and Original Articles on the successful Management of the Flower and Kitchen Garden throughout the year. This is at once the most beautiful Seed Catalogue and the best Guide for the Amateur ever issued.

Gratis and post-free to all intending Purchasers.

DANIELS BROS
Seed Growers
NORWICH.

A BARGAIN is offered in a lot of very extra strong BLACK HAMBURGH VINES, which must, on account of alterations, be moved out of a border in which they were planted to be fruited this year. They have never borne a berry, and would ripen 20 lb. to 30 lb. of fruit well. Strong Canes, with splendid healthy roots, 10s. 6d. each.
L. WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

Enormous Reduction.

LILIUM AURATUM.—Magnificent Bulbs of these exceedingly beautiful Lilies, just arrived from Japan in the finest possible condition—sizes Nos. 1 to 4, at 4s., 6s., 8s., and 12s. per dozen. Single samples sent post-free on receipt of two extra stamps to the Importer (with whom samples may be seen)—
WM. GORDON, 10, Cullum Street, E.C.

Seed Potatos.

JOSIAH H. BATH, Borough Market, S.E., offers the following heavy-cropping American varieties:—

Oneida	Early Rose
Idaho	Early Goodrich
Compton's Surprise	Farmer's Blush
Snowflake	Peach Blow

Also a large stock of all English varieties.
Prices (very moderate) on application.

Genuine Seeds.

JOHN AND CHARLES LEE, Seedsmen to the Queen, invite attention to their new and extensive CATALOGUE of SEEDS for 1876. This Catalogue has been prepared with their usual care, and contains every novelty, whether home-grown or foreign, with the most minute and useful descriptions of both Vegetable and Flower Seeds. The prices of every article are the very lowest, considering the first-rate quality of the various stocks offered. The long standing of the house of LEE (125 years) is a sure guarantee of the excellence of their seeds and the soundness of their trading. Catalogues may be had post-free on application.
Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

MRS. PEARSON GRAPE.—I intend to send out this fine Yellow Grape this season. It received a First-class Certificate in 1874, and also the prize offered by Mr. Smee for the best new fruit of any kind exhibited during that year. It will be found quite equal in constitution to the "Golden Queen;" it is quite as large in bunch and berry as the true Black Alicante, from which it was raised, and will keep quite as long and weigh quite as heavily, and, having a rich Frontignan flavour, will prove a fine profitable Market Grape like its parent, whilst much superior to it in quality. Strong Fruiting Canes, 42s. and 63s. each; good Planting Canes, 21s. each.
J. S. PEARSON, Chilwell Nurseries, near Nottingham.

PEACHES and NECTARINES, Dwarf-trained, in pots for late planting. These trees being in pots may be safely planted to the end of May. 5s. each.

PEACHES.

Albatross,	Early Louise,
Alexandra Noblesse,	Early Rivers,
Condor,	Grosse Mignonne,
Dagmar,	Princess of Wales,
Dr. Hogg,	Rivers' Early York,
Early Leopold,	Stanwick Early York.

NECTARINES.

Byron, | Dante, | Stanwick Elruge.

THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

For the Farm or Garden.

CABBAGE PLANTS, superior Bedfordshire-grown:—Early Enfield, York, and Nonpareil, at 3s. per 1000; Robinson's Champion Drumheads, at 4s. per 1000; Red Dutch Pickling, at 5s. per 1000 (supplied in any quantities). Early Longpod BEANS, at 8s. 6d. per bushel; common Windsors, at 16s. per bushel. Forcing and Planting ASPARAGUS PLANTS, at 2s. 6d. to 7s. 6d. per 100. Double Scarlet DAISIES, at 2s. 6d. per 100; splendid large Crown Daisies, 5s. per 100. Splendid new flowering PYRETHRUMS, at 4s. per dozen. Beautiful Blue DELPHINIUMS, at 4s. per dozen. Terms, cash with orders. SEED POTATOS, and all other Seeds of best quality, at lowest prices.
CATALOGUES, &c., on application to
FREDERICK GEE, Seed Grower, &c., Biggleswade, Beds.

Notice to Trade.—Application by Post.

MR. POSTANS' NEW ZONAL GERANIUMS of 1875.
Strong plants, the fourteen for 10s. 6d.; do. cuttings, 6s. 6d.; the Silver-edged White-flowering and Silver-edged Fancy flowering varieties, the set of eight for 12s.; cuttings, 1s. each, 6d. extra free by post.
COLEUS DUCHESS of EDINBURGH, well coloured plants, post-free, 6s. 6d. per dozen.
HERBACEOUS PHLOX, good stuff, 4s. 6d. per dozen; cuttings, 1s. 3d. per dozenby post.
CHARLES BURLEY, Nurseries, Brentwood.

Special Offer.

G. FARNSWORTH has to offer large quantities of the following, at per 1000; also other NURSERY STOCK, at low prices, which may be had on application at the Nurseries, Matlock:—ASH, Mountain, 3 to 5 feet, 17s. 6d. CHESTNUT, Horse, 6 to 8 feet, 80s. FIR, Austrian, 20 to 30 inches, 90s. HOLLY, Common, 12 to 18 inches, 180s. LARCH, 12 to 20 inches, 14s.; 1½ to 2½ feet, 25s. LIME LAYERS, 2-yr., Red-twigged, 2 to 4 feet, 80s. PRIVET, 1½ to 2½ feet, 12s.; 2 to 3½ feet, 15s.; 3 to 4½ feet, 17s. 6d. RHODODENDRON, Hybrid and Pontica mixed, 3-yr. seedling, fine, 5s.; extra, transplanted, 6 to 10 inches, 60s.; 8 to 12 inches, 80s.; 12 to 18 inches, bushy, 140s. LAUREL, Common, bushy, 1½ to 2½ feet, 80s. LIMES, transplanted, Red-twigged, 4½ to 6½ feet, 180s.

CHOICE SEEDS, &c.—

CUCUMBER, Beauty of St. Albans, the best of the Telegraph section, 1s. 6d. per packet.
" Telegraph, true stock, 1s. per packet.
" Duke of Edinburgh (Daniels), 1s. per packet.
SOLANUM CAPSICASTRUM, hybrids, from plants selected from the three best stocks in Covent Garden, 6d. and 1s. per packet.
LOBELIA PUMILA MAGNIFICA, 1s. per packet.
CELOSIA PYRAMIDALIS, saved from Mr R. S. Yates' fine strain, 6d. and 1s. per packet.
LOBELIA PUMILA MAGNIFICA, seedling plants, 5s. per 100; plants from cuttings, 12s. 6d. per 100.
All orders prepaid.
J. BESTER, White Hart Lane, Tottenham, N.

PINE PLANTS for SALE.—A Gentleman, who is giving up the cultivation of Pines, has Fruiting and Succession Plants of Smooth Cayennes and Queens to dispose of; warranted clean and healthy. For further particulars apply to
J., Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, S.W.

Mulberries.

March and April are the two best months for Transplanting.
KINMONT AND KIDD have a large and very fine stock of these to offer, with fine clean stems and excellent heads, which they are prepared to Dispose of to the Trade and others on very liberal terms. Particulars on application. Also a few hundred YUCCA RECURVA, cheap.
Exotic Nursery, Canterbury.

E. G. HENDERSON & SON'S
NEW
DESCRIPTIVE SEED CATALOGUE

Contains many Novelties, and nearly 300 Illustrations of Plants and Flowers.

CYCLAMEN PERSICUM MONSTROSA PLENO, 2s. 6d. and 5s. per packet.
CONVOLVULUS MAJOR PICTURATA TRICOLOR, 1s.
BEGONIA, Double-flowered, 5s.
LOBELIA, Brilliant Improved, 1s.
PRIMULA SINENSIS FLORE PLENA, 2s 6d. and 5s.
" " MAIDEN'S BLUSH, Double-flowered, 5s.
" LUCY GRIEVE " PEAR, First-class Certificate, see above Catalogue.
VINES and BULBOUS-FLOWERED ROOTS, suitable for this Season's Planting and Bloom: see the Catalogue.
The Wellington Nursery, St. John's Wood, London, N.W.

NOW READY.
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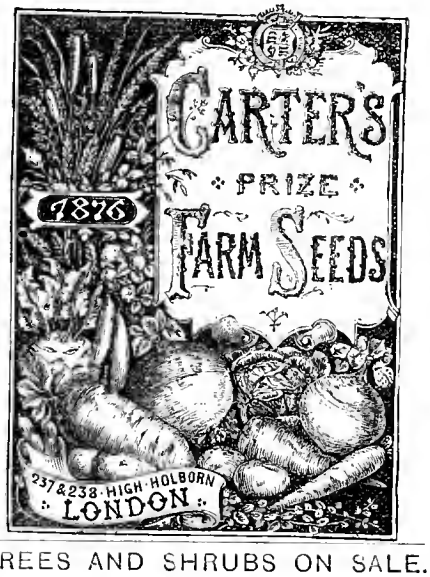

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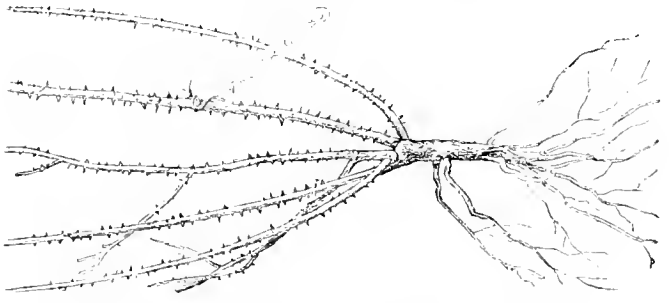

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ONCIDIUM SARCODES,
ONCIDIUM MACRANTHUM HASTIFERUM,
AERIDES JAPONICUM, in flower,
ODONTOGLOSSUM SCEPTRUM, in flower,
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SATURDAY, MARCH 18, 1876.

NATIVE SPRING VEGETABLES.

IN our anxiety to obtain new things—and there is no doubt that the weakness of the Athenians is one common to all mankind—there is often a great danger of overlooking others which, as far as actual merit is concerned, lack only the quality of novelty to render them equal to those which have taken their place. We have a good illustration of this in the abandonment of our old-fashioned garden favourites for more recently introduced but scarcely more beautiful plants; and this, not only so far as out-of-door plants are concerned, but also in regard to greenhouse favourites. All that class of flowers which used to be termed collectively "Cape plants" have suffered greatly from this versatility of popular favour, and a hasty glance through the earlier volumes of the *Botanical Magazine* will bring many a flower to our notice which would otherwise be without record in our horticultural annals.

In the same way our taste in vegetables, especially those which were called "salad herbs" by the older writers, has undergone a change; and many favourites of former days have fallen into disuse. Woolbridge in his *Art of Gardening*, published less than two centuries back, enumerates among the latter class Alexanders (Smyrnium Olusatrum), Purslane and Bugloss, none of which are now in common use, although the first and last hold a corner in some old-fashioned kitchen-gardens; with Borage, which is perhaps grown now-a-days rather as "bee-bread" than as a salad herb (albeit its use in claret-cup must not be overlooked), and Lamb's Lettuce, which is by no means as popular with us as it is on the Continent.

Besides these garden plants, our fields and hedges were laid under contribution for the supply of the table, and it is to one or two of these that we wish now to call attention. Woolbridge introduces them in the following words: "There are some plants, herbs, or parts of them, that are esculent either of themselves, or in condiments, that are not usually propagated in gardens for that purpose, as the young buds of Hops boyl'd do much resemble Asparagus in the eating, and are very pleasant and wholesome where the other are not to be had: the young shoots of a new-lopp'd Elder tree being boyl'd, are esteemed a most excellent dish; the ordinary buds of Elder, and the red young tops of Nettles, and of Watercresses, and also of Brook-lime, every herb-woman can tell you are good spring Sallads or pottage-herbs." All these, except perhaps the Elder shoots, seem reasonable enough, and, so far as Nettles and Hops are concerned, their claims to notice are by no means inconsiderable. But far stranger additions to our "festive board" have been proposed by our earlier writers. Coles, in his *Adam in Eden*, speaking of the Horsetails (Equisetum), says that "the young buds are dressed by some like Asparagus; or, being boyled, are often bestrewed with flower, and fried to be eaten." The Broom Rape (Orobanche), according to the same author, was "commended by some to be as good as Asparagus, taken when they are young, and eaten either raw or boyled," but, he adds, "they are somewhat bitter." The young stocks of the

Burdock are recommended by Coles as "pleasant to be eaten" if boiled with the broth of fat meat, or pecled and eaten raw with salt and pepper. Thistles have been recommended by Evelyn, who suggested that the tender stems of such species as Carduus palustris, should be boiled, or, like the four-and-twenty blackbirds of nursery tradition, "baked in a pie"; while the receptacle of the Bur Thistle (C. lanceolatus) has been dressed in the same manner as Artichoke bottoms.

With regard to Nettles their use as a vegetable in Scotland appears to be general, and of ancient date. It is rendered classical by Sir Walter Scott, who puts into the mouth of the faithful Andrew Fairservice (whose name will be familiar to all readers of *Rob Roy*) the remark—"Nae doubt I suld understand my ain trade o' horticulture, seeing I was bred in the parish o' Dreep-daily, near Glasco, where they raise lang Kail under glass, and force the early Nettles for their spring Kail." This would indicate that Nettles were held in considerable estimation; and the poet Campbell says that "the young and tender Nettle is an excellent pot-herb," and speaks of having eaten it in Scotland. Boiled in the same manner as Greens, they form indeed a by no means unpalatable dish; and if the virtue popularly ascribed to them of "cooling the blood" have any real existence their use may be regarded as beneficial. Nettle tea Is a popular rustic remedy in many parts of the country, and a similar decoction is a favourite prescription for consumption among the common people of Scotland. This remedy has supernatural sanction, although scarcely of the highest kind. In Chambers' *Popular Rhymes of Scotland* we are told of a Renfrewshire superstition, which states that as the funeral of a young woman who had died of consumption was passing along the high road on the margin of the Firth of Clyde, above Port Glasgow, a mermaid raised her head from the water, and in slow admonitory tones uttered these words:—

> "If they wad drink Nettles in March,
> And eat muggons in May,
> Sae mony braw maidens
> Wadna gang to the clay."

Loudon speaks very highly of the Nettle, either as a pot-herb for soups or for dishes like Spinach, and gives a plan for blanching it in the same manner as other plants. He says:—"We have known the Nettle forced by being planted close to the flue in a vinery, so as to produce excellent Nettle-Kale and Nettle-Spinach in the last week of January.

The writer just quoted mentions many other wild plants which have been used as "greens" or pot-herbs, some of which, as for instance the young leaves and tops of the Black Bryony (Tamus communis), would, we fancy, require to be ventured on with caution. Some of our common Cruciferæ, such as Charlock, Hedge Mustard, and Sauce-alone, have been eaten as pot-herbs and have been well spoken of, and these are at any rate harmless. The Shepherd's Purse, too, is a popular esculent in Philadelphia, and is there brought to the market early in the season in large quantities. "The taste, when boiled, approaches that of the Cabbage, but is softer and milder. . . . Those from the gardens and highly cultivated spots near Philadelphia come to a size and succulence of leaf scarcely to be believed without seeing them." Chickweed and Sow Thistles are said to be very good boiled; while among substitutes for Asparagus may be mentioned the young shoots of the Hop, and those of the Rosebay Willow-herb (Epilobium angustifolium). In the way of Spinach may be mentioned several of the allied-Chenopodia and Atriplices, especially the common Goosefoot (Chenopodium album.) One member of this group, the "Good King Henry" (C. Bonus-Henricus), is commonly cultivated in Lincolnshire gardens under the name of "Marquery," an evident corruption of Mercury. This plant is held in great esteem in that county as a substitute for Spinach, and is well worthy of more general cultivation.

We had intended to refer to a few of our native salad herbs, but these must stand over until a future occasion. *B. M.*

A NEW CLASSIFICATION OF APPLES.

By Robert Hogg, LL.D., F.L.S.

One of the greatest difficulties pomologists have had to contend with is the want of a classification of the varieties of Apples and Pears by which they can ascertain the names of varieties in the same way as the botanist is enabled to discover the name of a plant when it is unknown to him. Every other kind of fruit has up to the present been arranged according to characters, which are sufficiently distinct and permanent to make the classification of real service; but of the Apple and the Pear there is none which can be worked with any kind of assurance that it will lead to the desired result. It is not that no attempts have been made to form a classification—on the contrary, Diel, Dochnahl, and Lucas have each produced one, each of which is a modification or altered form of the other; but the characters upon which they are based are to my mind too varying and not sufficiently apparent to render them so useful as could be desired. In my work on the Apple, which was published five-and-twenty years ago, I gave a kind of classification to assist students in pomology to ascertain the names of the different varieties; but it has never served that purpose. Previous to this I had attempted to apply Diel's system and failed. Ever since that time I have been assiduously observant of every character in the structure of the Apple which I thought served as a basis for a classification, and at last I fixed upon those which I have accepted as the principles of the new system which I am now about to describe.

The characters upon which this system is based are well known, and have been noticed in descriptions of fruit so long ago as by Diel and other German pomologists; but just as the pre-Linnean botanists observed the stamens and pistils in plants, and entertained certain views with regard to their functions without employing them as bases for classification, so has it been with the pomologists who, while aware of the presence of the characters, have hitherto overlooked them as being applicable to classification.

For some years past I have endeavoured to apply the characters I have now adopted. The light I had at first was small and dim, but by repeated application to the subject every recurring fruit season I began to see the foundation of what has now grown up to the structure which I now offer to the world.

My reason for not giving publicity to it before this was that I wished to work it thoroughly before I committed myself to it. To do so I have procured in various years collections of fruits from different parts of the country, from different soils and climates, and also at different seasons of the year; and in every case I was gratified to find that the characters which I observed in each variety of fruit were equally well-marked in that variety from whatever district, soil, or climate it came, or at whatever season the examination took place. For instance, Wyken Pippin from Tweedside, from Chiswick, from Sussex, from Worcester, from Somerset, and from Devon invariably presented the same characters of eye open, seed-cells closed, calyx-tube conical, and stamens median. This I merely give as an example, and it is applicable in every case.

I must remark, however, that in this, as in every other classification of natural objects, the characters are not always constant, and there are varieties which refuse to submit to any scheme of man's devising. Nature refuses to be bound, and we must adapt our ideas to her laws. In every system it is so, as the botanist well knows. When he would class plants into those which are hypogynous, perigynous, and epigynous, he finds there are some that reject his interference and assert a double alliance. And so it is with fruits. There are those in which some varieties have the eye open or partially closed, seed-cells of the same character, calyx-tubes in which it is difficult to determine whether they are conical or funnel-shaped, and stamens which waver between a marginal and median position, or a median and a basal. But these are difficulties which are easily got over, as I shall show further on.

The characters which I have adopted as the basis of this classification are the eye, the seed-cells, the calyx-tube, and the stamens. These supply the primary and most important divisions; but they may be extended and broken up into fruit round, roundish, or oblate, and fruit conical, oblong, or ovate, and these for convenience may be farther divided into pale, coloured, and russet. I will now treat of the leading characters.

1. *The Eye.*—This is the pomological term used to signify what botanists call the sepals or limb, and mouth of the calyx. In French it is called *œil*.

If we examine a great number of varieties of Apples we find that in some the eye is wide open, and the segments quite reflexed, in some cases so much so as to be quite flat on the surface of the fruit. This is very apparent in Blenheim Pippin, Wyken Pippin, and Court of Wick. In many cases the segments are erect and spreading or reflexed at the tips, and this form of structure also leaves the eye open though not so much so as in the previous examples. Between the spreading and the erect open eye there are many gradations which will be remarked by any observer who examines the different varieties.

The other form is the closed eye. It will be observed in this case that the segments are erect and connivent at the tips, forming a small cone. In some cases of this form of closed eye the tips are spreading; but there is another very distinct form of the closed eye in which the segments are quite flat and convergent, closing in the eye like a trap-door in five divisions, as is seen in Trumpington. These two characters of eye open, and eye closed, I propose to employ as my primary divisions.

2. *The Seed-cells.*—These constitute what is popularly called the core of the Apple, and contain the seeds or pips. They are usually five, but they vary in number, and are occasionally three, four, and even six. They differ very much in structure, and are either open to the axis of the fruit or closed; and between the closed and the wide-open cells there are as many gradations as in the closed and open eye. Some have perfectly closed cells; some have them open, and in others again they are wide open. In the last are to be found all the Codlins, and varieties having the Codlin character.

The seed-cells form the second great divisions of my system, which are distinguished as cells open, and cells closed.

3. *The Calyx-tube.*—In making a longitudinal section of an Apple in a line through the centre of the eye to the stalk a more or less deep cavity will be observed under the segments of the eye and between them and the core. This is called the calyx-tube, or *kelchröhre* of the Germans. It is of very varied form, but all of these are modifications of two, or perhaps three, which may be regarded as distinct, and these I have called the conical and the funnel-shaped. As in the cases of the open and the closed eye and the open and closed cells these run into one another, and there are instances in which it is difficult to distinguish to which of them the individual belongs. In the examples of the conical tube, some are wide and deep, and others narrow and short. The funnel-shaped tube also assumes various forms. The third form is the cup-shaped, which very rarely occurs.

The calyx-tube is the character on which the third division is based, and is divided into calyx-tube conical and calyx-tube funnel-shaped.

4. *The Stamens.*—These are little bristle-like bodies which are found forming a fringe round the inner surface of the calyx-tube, and it is on the position they occupy that the fourth character of this system is founded. On examining a number of different varieties of Apples it will be seen that the stamens are not always in the same position. Some will form a fringe immediately under or near the base of the segments, and these I call marginal. Others occupy a midway position between the margin and the base, and these are called median; and a third are situated near the base, which are termed basal.

Taking the position of the stamens as my fourth great division, we have—1, Stamens marginal; 2, Stamens median; and 3, Stamens basal.

To prolong the subdivisions even beyond this point to which we have arrived, we can have—1, Calyx-tube short conical, and deep conical. Then we can have short funnel-shaped, and long funnel-shaped. These may again be further divided into—1, Fruit

round, roundish, or oblate; and 2, Fruit conical, oblong, or ovate.

I have already called attention to the changeableness of the characters in some varieties; how in the cases of the eye and the cells some exhibit them open or closed, or intermediate between the two; also in the interchangeable form of the calyx-tube and the positions of the stamens. In my classification I have provided against any confusion arising from this cause, and have given additional references when a variety is to be found in more than one division. For example, in Scarlet Nonpareil the eye is sometimes open and sometimes closed, though the calyx-tube is always short funnel-shaped, and the stamens marginal. This variety is therefore placed in class 1, section 2 (§§), and division 1 (†); but to provide for the case of the eye being closed, it is entered thus—"Scarlet Nonpareil iii., §§, †," showing that it is also found in class iii., section 2, and division 1.

It is important that perfect specimens of fruit be used when the classification is applied, and especially that the eyes be perfect; and to observe the calyx tube correctly, the longitudinal section should be made directly through the centre.

[In the *Journal of Horticulture*, from which this abstract is taken, a list of nearly 300 Apples, classified in accordance with [the principles above-mentioned, is given, but which our space does not allow us to reprint at present. Eds.]

JOHN SMITH,

Ex-Curator of the Royal Botanic Gardens, Kew.

It is a matter of great satisfaction to us to be able to lay before our readers a portrait and autobiographical notice of the veteran ex-Curator of the Royal Gardens, Kew. His extraordinary knowledge of plants, and of every circumstance connected with the history of the Royal Gardens, no less than his contributions to botanical science, have given him a claim to the respect of horticulturists which none will wish to gainsay, while the sympathies of all will be specially felt for one to whom the loss of sight is a more than usually sad deprivation. A life more fraught with instruction and encouragement for the young gardener can hardly be imagined; and its recital may, we hope, lead others to become distinguished botanists and gardeners, like the subject of this notice.

"Although it is not general, it is nevertheless a very common occurrence for sons to inherit the taste, and adopt the calling of their fathers; such may be truly admitted to have been my case.

"My father, after serving his apprenticeship in the garden of the ancient castle of Drum, in Aberdeenshire, in 1790, started to seek his fortune in the South, Glasgow being his destination. After serving some time in the Glasgow nurseries, he spent two years as journeyman in two different gardens in Ayrshire, and one year at Buchanan, the Duke of Montrose's seat in Argyllshire. The gardener, Mr. Kyle, was fond of plants, and had formed a collection of the rare plants of Ben Lomond, and which he knew by their botanical names, and was always pleased to communicate his knowledge to his men, and thus my father became acquainted with botanical names. After leaving Buchanan he served some time in the Edinburgh nurseries, where he gained a considerable addition to his knowledge of plants. He afterwards served another year as journeyman in the fine garden of Hopetoun House, and in 1798 became gardener to Mr. Stewart, of Hillside, Aberdour, in Fifeshire, where I was born, on October 5, 1798.

"In 1802 he became gardener to Thomas Bruce, Esq., of Grangemuir, near Pittenweem, in the east of Fife, where he assisted to convert a moorland estate into cultivated cornfields and plantations, and made a new walled-in garden.

"When about eight years old I was sent to the parish school of Pittenweem, about a mile distant, where I went through the usual course of education then commonly taught in the parish schools of Scotland; the fee for reading, writing, and the simple rules of arithmetic being only 3*s.* per quarter; and by paying the small extra fees, I went through the courses of geometry, mensuration, land surveying, book-keeping, and plain trigonometry, my whole school education not costing more than £5. I had begun Latin, but my father's apprentice having run away before his time was completed, it was agreed that I should take his place.

"The numerous anecdotes my father told me of his travels, and descriptions of gardens, and especially about collecting and drying specimens of rare plants growing on Ben Lomond, took my fancy, and impressed me with the idea that I should like to do the same; and this led me to commence forming a bed of wild flowers, such as native Orchids and other pretty plants found in the neighbourhood, of most of which I learnt the botanical names from my father, aided by the catalogue of the plants in the Edinburgh nurseries, which was one of the first nurserymen's catalogues of plants arranged according to the Linnean system.

"Having exhausted my father's knowledge of botany my questions sometimes annoyed him, and seeing that I was bent upon the study of plants, a copy of Lee's *Introduction to Botany* was accordingly procured for me from London, from which by diligent study I soon learnt the names and characters of the Linnean classes, and with a copy of Abercrombie's *Gardeners' Calendar*, presented to me by Mr. Bruce, I in time learned the botanical names of all common forest and fruit trees, as also cultivated fruits, vegetables and flowering plants, and did not despise weeds, of which I made a list.

"My apprenticeship ended in November, 1815, and I obtained a situation as journeyman in the garden of Robert Ferguson, Esq., of Raith, near Kirkcaldy, an old garden but celebrated for its collection of plants both hardy and tender. I well remember my astonishment on first seeing the flower of Strelitzia reginæ, the succulent Euphorbias, Cacti, and other curious plants quite novel to me. Being the youngest hand, much of the drudgery work fell to my share, as was common in Scotch gardens in those days; and living in a miserable back-shed bothy with three others I made but little progress in the knowledge of plants that year.

"In November, 1816, I left Raith, and entered as journeyman in the gardens of the Earl of Moray, at Donibristle, near Aberdour. This garden was then a celebrated school for young gardeners; I became a favourite with the master, and found leisure to collect and make specimens of the wild plants of the neighbourhood.

"I left Donibristle in November, 1817, and entered as journeyman in the garden of Caley House, Kirkcudbrightshire, 105 miles from Edinburgh, which distance I accomplished on foot in three days. This was a well kept garden, and the master had a taste for botany, and had formed a collection of herbaceous plants, arranged in rows according to the Linnean system; he also possessed a number of books, amongst which were the volumes of the *Botanical Magazine* up to that time, which I had the opportunity of seeing. The many wild plants of the neighbourhood, which I had not before seen, did much to add to my knowledge of native plants.

"I left Caley at the Martinmas term, in November, 1818, and in order not to traverse the way I came I took the road by way of New Galloway, Ayr, Kilmarnock, to Glasgow, and after seeing the nurseries there proceeded to Edinburgh, where, through the interest of my father with the late Mr. William McNab, I obtained a situation as journeyman in the Royal Botanic Garden, then situated in Leith Walk. The collection of hardy and hothouse plants was then considerable, being in this country second only to that of Kew. Here I met with minds congenial with my own, and although four of us lived in a back shed one-roomed bothy, all personal discomforts were forgotten, our leisure time being entirely employed with books, and in drying specimens of plants. Having the privilege of attending the botanical lectures, from which I first gained a knowledge of the natural system of botany, and Mr. McNab having kindly lent me Jussieu's *Natural System*, from which I copied the system of arrangement and the chief characters and the orders belonging to each. These circumstances, together with the examples of many exotic genera in the garden, did much to fix in my mind a knowledge of the principles of the natural system. Specimens of the native plants being required to supply the students for the lectures, it was part of our duty to collect them; and thus the localities of most of the rare plants in the vicinity of Edinburgh, as far as the Pentland Hills, became known to me. Mosses and lichens were a special object of collection. Although our wages were only 9*s.* per week I nevertheless managed to purchase paper for specimens, and a copy of Dr. Smith's *Compendium Flora Britannicæ*. This work was in Latin, but with the aid of a Latin dictionary and the glossary of botanical terms in Lee's *Introduction to Botany* I was soon able to understand the Latin descriptions. The family of grasses and Cyperaceæ also specially took my attention, and there being a fine collection of both native and foreign in the garden, I made specimens of the whole collection. During this year I gained a considerable knowledge of plants.

"In November, 1819, I went home to my father's for the winter, and, being desirous of having some practice in land surveying, I put myself under the tuition of a country parish schoolmaster, who was much employed in land surveying and measuring farms, and I thus learnt the use of the chain and field book, and the method of laying down plans, which proved of great use to me in after-life.

"In the spring of 1820 I returned to Edinburgh, and had the choice of remaining in the garden with Mr. McNab, or of proceeding, with letters of recommendation from him, to London. I chose the latter, and on presenting my letter of recommendation to the late W. T. Aiton, Esq., Director of the Royal Gardens, I was at once sent to fill a vacancy that had just occurred in the Royal forcing garden at Kensington. In this garden Pines, Vines, and Peaches were cultivated on an extensive scale. Although this branch of gardening was not in accordance with my taste and previous study, I nevertheless profited much in gaining a knowledge of forcing fruits and managing hothouses, then heated by steam.

"In April, 1822, a vacancy having occurred in the propagating department of the Royal gardens at Kew, Mr. Aiton appointed me to fill the place. At this time the Botanic Garden consisted of only 9 acres enclosed by walls. The northern part was called the arboretum, and contained the trees and shrubs described in the *Hortus Kewensis*, which, although crowded, nevertheless comprised many fine specimens of rare trees. The southern part contained the hardy herbaceous collections and hothouses, all of which, with the exception of a small span-house, were lean-to's, and heated by small flues, having in all thirty-one furnaces, which by weekly rotation were attended to by the young gardeners, then about ten in number, who had to perform the drudgery work of wheeling coals and clearing away the ashes. This was done without a complaint, as it was then considered necessary that young gardeners should be practically acquainted with the management of hothouse fires. The wages of the young gardeners were then only 12*s.* per week, out of which they had to pay for lodgings. There being but few books in those days on plants within the reach of gardeners, the knowledge of plants which they acquired was by practical observation, and as an instance of the eagerness to obtain such I may mention the following:—I had observed in a bookseller's window at Hammersmith a second-hand copy of the *Epitome Horti Kewensis*; with the price marked on it, but it was beyond my reach at the time, but in the course of several weeks, by a little stinting, I managed to accumulate the sum, and on a Saturday night started off to purchase the book, which I obtained, and had just paid for it, when my comrade entered the shop on the same errand. He had, as well as myself, seen it in the window, but, being jealous of one another, nothing was said about it. This, with my Lee's *Introduction to Botany*, Abercrombie's *Gardeners' Calendar*, and Dr. Smith's *Compendium Flora Britannica*, caused me to be looked upon as the most learned in plants in the garden.

"In the autumn of 1823 I was promoted foreman of the hothouses and propagating department. At that time great accessions were being made to the collection by the importations of seeds and plants sent home by Bowie from the Cape of Good Hope, by A. Cunningham from New South Wales, by Dr. Wallich from India, and by Lockhart from Trinidad. The Proteaceæ, Leguminosæ, and other plants of New Holland, were then in high favour with plant lovers, and to them I devoted special attention, and thus laid the foundation of the grand collection of these families which in later years became the pride of the gardens.

"In the autumn of 1826 I had the offer of an excellent situation in Scotland, but Mr. Aiton would not allow me to leave, and the cultivation of plants being more to my liking than the common routine of gardening, I consented to remain on condition that he

provided me with a comfortable house in the garden to live in, which he accordingly did.

"At this time Mr. Aiton was much engaged in carrying on the works at the Royal Lodge in Windsor Park, and the King (George IV.) requiring his attendance almost daily for several years, much of the responsibility of the management of the garden thus devolved upon me.

"At this period few of the plants had their names attached to them, the tree and shrub, herbaceous, and succulent collections, and some others having labels with a number referring to their names in a book. Having, as already stated, paid special attention to the study of grasses, and the collection at Kew being large, I, in 1828, after much hesitation on Mr. Aiton's part, obtained his consent to have them named on condition that I would be responsible for their correctness; accordingly, with the free use of Mr. Aiton's library, kept in the garden, I corrected all mistakes, and a set of cast-iron labels in the form of a T was procured, on which were printed the names of the species. This was the first of the T labels for plants, which came into general use in after years. On this point Dr. Lindley, in his report drawn up in 1838, and laid before Parliament, says:—"What names are to be found in the garden have been furnished by Mr. Smith, the foreman, and the Director does not hold himself answerable for them."

"As with all other old-established institutions, a change in its policy, based on new views consequent on the progress of knowledge, became imminent, and throughout the country an opinion existed, which began to be loudly expressed, that the management of the garden was not as it should be; and accordingly in February, 1838, a Commission, headed by the late Dr. Lindley, was appointed to examine into the state of the garden: a long report was the consequence, the important points being that, either the garden should be entirely abolished, or put upon a different footing. For two years no action was taken on this report, and during that period there were many surmises as to what was to be the fate of the garden. Up to this time the expenses of the garden were defrayed out of the Privy Purse, under the direction of the Lord Steward, then Lord Surrey, who in the autumn of 1839 paid frequent visits to Kew, and made special inspection of the hothouses and pits in the Botanic Garden, always accompanied by Mr. Aldridge, the head kitchen gardener; and it ultimately became known that it was intended to convert the houses into Pine-stoves and vineries, and to get rid of the plants. They were first offered to the Royal Horticultural Society for their garden at Chiswick, and secondly to the Royal Botanic Society's garden, Regent's Park: in neither case could they be accepted without the aid of Government, to assist in building hothouses for their accommodation, which was not acceeded to.

"This, however, did not prevent the Lord Steward from the intention of carrying out his plans, for after his visit on February 18, 1840, the kitchen gardener informed me that the Lord Steward had given him instructions to convert the Botany Bay house into a vinery, that the Cape and other houses were to follow, and that the plants were to be destroyed. It was with no ordinary sorrow that I heard this news, and although Mr. Aiton was still Director he was not consulted, and therefore could take no step in the matter.

"The following day an old botanical friend* paid one of his frequent visits to the garden, and being at that time specially engaged in studying the plants of New Holland he was consequently much grieved to hear of their intended destruction; and considering it would be a disgrace to the nation he was led to write a letter stating what was to take place with the collection of plants at Kew, and which appeared in the *Times* newspaper of February 21. This letter had the desired effect, and a semi-official denial appeared in a newspaper on the 24th to the effect that the Government had no intention of destroying the Kew collection. This led to a change in the administration of the garden, for shortly after I received notice to the effect that the management of the garden was to be transferred to the Commissioners of Her Majesty's Woods and Forests, which took effect on April 1, 1840; and on March 31, 1841, Mr. Aiton officially resigned his office of Director of the Botanic Garden, and Sir William Hooker received the appointment of Director in his place. With this commenced a new era in the history of the garden.

"Although I had been nominally Curator of the Botanic Garden for a number of years, it was not till the autumn of 1841 that I was officially appointed by the Treasury, and from that time I did everything in my power to assist Sir W. Hooker in carrying out his plans in the alterations and improvements in the garden that followed, and in increasing the collection of plants, in which I was greatly aided by my previous twenty years' practical acquaintance with the collection.

"In 1861 a gradual failure of my sight became manifest, which continued to increase, and in December, 1863, I deemed it necessary to petition the First Commissioner of Works to release me of my duty of

JOHN SMITH.

(Ex-Curator, Royal Gardens, Kew. "Historian of Ferns.")

Curator, and in May, 1864, I was accordingly released from my office, having been then forty-four years in the service of the Royal Gardens.

"Sir W. Hooker in his Parliamentary Report for 1864, speaks of my resignation as follows:—

"'The most important change which I have to mention, and indeed the most important that has occurred since 1841, when I was appointed Director, has been the retirement (owing to an affection of the eyes) of our able and highly valued Curator, Mr. John Smith, who for upwards of thirty years has superintended all departments of the Royal Gardens, and whose services and fidelity have been recognised by the Treasury in granting him the highest scale of pension. Indeed previous to my taking office Mr. Smith's services to the gardens and to science were mentioned with approbation by the Commissioners, whose report on the condition of the Royal Gardens was presented to Parliament in 1838; and they especially drew attention to the fact that to Mr. Smith alone (then a foreman) was due the credit of having named any of the plants, whether for the interest of science or the instruction of the public.'

* Mr. Robert Heward, F.L.S., of Kensington.

"*Appendix.*—The following is a list of my principal papers and works on plants:—

1. Observations on the Cause of Ergot on Grasses. 1838. *Linnean Transactions.*
2. Notice of a Plant which Produces Perfect Seeds without any Apparent Action of Pollen. 1830. *Linnean Transactions.* (Cælobogoyne.)
3. An Enumeration of the Ferns of the Philippine Islands. Hooker's *Journal of Botany.* 1841.
4. An Arrangement and Definition of the Genera of Ferns. Hooker's *Journal of Botany.* 1841.

Fig. 64.—I. A. AURIFODINA.

5. Characters of Twenty New Genera of Ferns in Hooker and Bauer's *Genera Filicum.* 1842.
6. An Enumeration of the Ferns Cultivated at Kew in 1845. *Botanical Magazine.* 1846.
7. Enumeration of the Ferns Collected During the Voyage of Her Majesty's Surveying Ship *Herald*, published in Seemann's *Botany of the Voyage.* 1856.
8. Catalogue of Ferns Cultivated at Kew and other British Gardens, with Characters of the Genera. 1857.
9. Ferns, British and Foreign, their History, Organography, and Classification. 1866. Pp. 412. One vol.
10. Domestic Botany; an Exposition of the Structure, Classification, and Uses of Plants. 1871. One vol. Pp. 547, with 16 coloured plates.
11. Historia Filicum; an Exposition of the Nature, Number, and Organography of Ferns. 1875. One vol. Pp. 429, with 30 plates."

THE COMMON HOLLY AND ITS VARIETIES.—IX.

C. Leaves Gold-Variegated.

§ Spines marginal, numerous, strongly developed.
* Spines divaricate—*i.e.*, variously directed.
† Leaves gold-edged.
‡ Leaves large, 2½—3 inches long (*continued*).

104. I. A. Madame Briot.—This fine Continental variety was noticed by error under No. 62 amongst

Fig. 65—I. A. MYRTIFOLIA AUREA.

the silver-leaved sorts, the specimens then before us not being characteristic as to colour. It really belongs to the gold-leaved section, as shown in specimens recently forwarded by Messrs. Paul & Son, of Cheshunt, and consequently the former description should be quashed, and the following substituted in place thereof. The young shoots are furnished with purple bark. The leaves are large, 2½ to 3 inches long, and 1¾ to 1½ inch broad, oblong-ovate, and furnished at the edge with strongly developed spines, which are wavy or divaricate; their surface is considerably mottled with yellow and green on the disk, and they have a narrow golden edge. In the size of the leaves, and their bold spines it has some resemblance to Golden Queen, but the leaves are longer and narrower, and the coloured margin is very much narrower and less effective.

Fig. 66—I. A. MYRTIFOLIA AUREA.

†† Leaves medium-sized.

105. I. A. aurea marginata intermedia; intermedia aurea marginata, Lee.—A neat form of golden Holly, with the young bark brownish, the leaves ovate, the largest about 2 inches long and an inch broad, the disk dark green or mottled, the golden margin broadest at the tip, and the spines broad and strongly developed.

Fig. 67.—I. A. AUREA PICTA LATIFOLIA.

Very similar to this, except that the bark of the young wood is green, is a form received from Ochtertyre, under the name of I. A. rigida marginata.

106. I. A. aurea marginata crispa; crispa marginata, Lee.—This also has considerable resemblance in the size and form of leaf to No. 105; but the leaf is of a very dull opaque green, and the edge is unequally bordered with dull yellow; it is also very

Fig. 68.—I. A. AUREA MEDIO-PICTA.

much divaricate, the spines being often recurved. The bark of the young wood is brownish.

107. I. A. aurifodina; aurifodina marginata, Lee; croceo-fuscum, Masters; aureum scoticum, W. Paul; Smudge Holly, Waterer (fig. 64).—These names appear to represent the same variety, which is a strikingly distinct and handsome plant, especially during the winter months. The bark is in most instances of a reddish colour, but in one or two samples was greenish. The leaves are ovate acuminate, about 1¾ inch long, the spines continuous but distant along the edge, or more rarely few and scattered, always moderately divaricated, the disk dark green, flushed or marbled with dull yellow-green,

Fig. 69.—I. A. AUREA MEDIO-PICTA.

the edge unequally marked with tawny orange-yellow, sometimes extending over fully half of the leaf. It is of upright or pyramidal habit, thickly clothed with the medium-sized or rather small foliage, and very distinct and peculiar on account of the tawny hue which the variegation assumes during the winter season.

108. I. A. aurea angustimarginata; angustimarginatum aureum, Lawson; aurea vestita, Barron.—This variety has purplish or reddish-purple bark. The leaves are elliptic-lanceolate or ovate-lanceolate, with numerous, strong, and widely-set spines, which are moderately divaricate, the disk dark green mottled with grey, the margin yellow, but irregular in width, and usually narrow.

109. I. A. Todmanni; Todman's Holly, Waterer.—A purple-barked variety, with medium-sized ovate leaves 1¾ inch in length, the margins irregularly spiny and more or less wavy, the disk pale green mottled, and the yellow margin usually rather narrow, but occasionally breaking out so as to occupy half the width of the leaf.

110. I. A. obscura, W. Paul.—This variety has dark purple bark. The leaves are oblong-ovate, about 2 inches or rather more in length, the disk dark green freely marked with bands and patches of greyish-green, and having a regular deep golden-coloured

Fig. 70.—I. A. SERRATIFOLIA ALBO-MARGINATA.

margin, which is furnished with rather prominent divaricate spines.

‡‡ Leaves small.

111. I. A. speciosa, W. Paul.—A green-barked variety with the leaves below medium size, being about 1¾ inch in length; they are of an ovate form, with a conspicuously mottled centre, and a deep golden edge.

112. I. A. aurea nana, W. Paul; nana aurea, Fisher.—A strongly-spined green-barked variety, with leaves of an elliptic-lanceolate outline, from 1½ to 2 inches long, the broad long spiny teeth very much

divaricated; the disk is of a dark green, mottled, while the margin is yellow, but unequal in width.

113. I. A. MYRTIFOLIA AUREA, Fisher; myrtifolia aureo-marginata, Barron; striped serratifolia, Waterer; pectinata aureo-marginata, Lawson (figs. 65, 66).—A beautiful small-leaved glossy golden Holly, with purple bark. The leaves are lanceolate or ovate-lanceolate, about 1½ inch long, with unequal and irregular spines, which are sometimes a good deal divaricated, and at other times nearly plane; they have a disk of dark mottled green, the central parts being freely marked with grey and yellow-green, while the edge, which is of a pale golden-yellow, is often broad and usually well defined, though occasionally running in on broadish patches. It is a very bright looking sort, and one of the best small-leaved golden forms.

114. I. A. MYRTIFOLIA ELEGANS.—Under the name of De Smet's Holly Mr. Waterer grows a narrow-leaved gold-edged form, which seems to be dissimilar from any other we have met with. It has reddish brown bark. The leaves are lanceolate, 1½ inch long, with rather distant and distinct spines, which are somewhat wavy; the ordinary colour is a greenish centre with a narrowish golden edge, but the leaves are sometimes either partially or wholly golden. This appears to be the serrata elegans marginata (De Smet) of Messrs. Simon-Louis' Catalogue Raisonné.

115. I. A. AUREA VESTITA, W. Paul.—This has deep purple bark, and the leaves are ovate, about 1½ inch long, with very irregularly placed and unequal-sized spines, which are somewhat divaricate, the disk of the leaf being a good deal overrun with a yellowish tint, and the yellow edge being rather indistinct.

116. I. A. WALTHAMENSIS, W. Paul.—This has very strongly-developed spines for the size of the leaf, which is only about 1½ inch in length. It is of elliptic form, with the spines much divaricated. The disk is mottled and streaked with yellowish-green, and it has a broad and conspicuous yellow margin. The bark of the young shoots is reddish brown.

†† Leaves gold-blotched.
‡ Leaves large.

117. I. A. AUREA PICTA PENDULA, Barron; Weeping Gold Milkmaid, Lawson; Blotched Weeping, Waterer.—A very handsome pendulous-habited variety, the bark of which is reddish brown or purplish. The leaves are oblong-ovate or ovate, 2 to 2½ inches long, with large triangular spines, which are much divaricated. The margin of the leaves is of a deep glossy green, while the centre or disk is marked with a large but irregular and unequal-sized blotch of sulphur-yellow. It is a desirable variety for placing in prominent positions on the shrubbery or on the lawn.

118. I. A. AUREA PICTA SPINOSA; picta spinosa, Fisher.—A strikingly distinct and effective variety, the young bark of which is purplish. The leaves are oblong-ovate, 2½ inches long, with very long formidable spines, which are strongly divaricated; the disk is broadly blotched with golden-yellow, and the irregular margins are of a deep green.

119. I. A. AUREA PICTA LATIFOLIA; picta, Barron, Fisher, W. Paul; Gold Milkmaid, finest variety, Paul & Son (fig. 67).—This is one of the handsomest of the varieties with gold-blotched leaves, the broad and well-marked leaf surface being very effective. It is one of the purple or dark reddish brown barked sorts. The leaves are ovate or broadly ovate, 2 inches or upwards in length, and sometimes nearly 1½ inch in breadth. The spines are variable in number and position, but they are stout, well-developed, and divaricate, rather distinctly placed, generally wanting at the rounded base of the leaf, and sometimes confined to a few near the apex. The broad disk is irregularly marked by a large branching deep yellow blotch, which frequently occupies more than half the surface, while the irregular often narrow margin is of a dark glossy green. It is very distinct from all the other varieties of this subsection.

120. I. A. AUREA MACULATA; maculata aurea, Fisher.—A distinct blotched-leaved golden Holly, with the bark of the young wood green. The leaves are oblong-ovate, about 2½ inches long, with distant triangular spines, which are moderately divaricate, and they have in the disk a large blotch of creamy yellow, surrounded by a green border, the outer part of which is dark green, and the inner part of a mottled pale green. It is less strongly spined than No. 118, which it resembles in colour and marking.

121. I. A. AUREA MEDIO PICTA; aurea picta, Lee, W. Paul; Gold Milkmaid, Waterer (figs. 68, 69).—This when well-coloured is a bright-looking and effective variety in the shrubbery, but it is not equal to I. A. aurea picta spinosa, which it a good deal resembles in its strongly-developed and as strongly divaricate spines, but is considerably smaller in its parts. It belongs to the reddish purple barked series, and has ovate or elliptic-ovate leaves barely 2 inches long, which have the marginal spines long and numerous, and very much divaricated, the apex of the leaf being always lengthened out into a spine which is considerably larger and longer than the rest; the margin, of irregular width, is green, and the centre or disk is occupied by a larger or smaller blotch of golden-yellow, which frequently nearly covers the whole surface. *T. Moore.*

P.S. I. A. SERRATIFOLIA ALBO-MARGINATA.—The annexed woodcut (fig. 70) of this neat little Holly was omitted when the description was printed (n.s., iv., 741). We therefore now insert it, and repeat the description:—A pretty little plant with purple bark, the twigs of which appear to be erect. The leaves are linear-lanceolate, about 1 inch long, with fine regular spines; the disk mottley green, and the margin creamy white, most strongly developed at the apex of the leaf.

Foreign Correspondence.

WEST CHESTER, PA.: *Feb.* 15.—Noticing the controversy in the *Gardeners' Chronicle* in relation to the various Piceas, or, as I prefer to designate them at present, Abies, I have made free to offer you my opinion in relation to the classification of the same. My opportunities for close study of Abies grandis and its numerous forms, under every climatal vicissitude, in both mountain and valley, on the Sierra Nevada of California, as well as the various localities in the Rocky Mountain range of Colorado, &c., lead me to adopt the following conclusion:—That A. grandis is of course an excellent species, but that A. Parsonsiana, A. lasiocarpa, and A. Lowiana are nothing more than well-marked forms of the same, varying in length and shape of leaf, and size of cone. It is a well-known fact among botanists in this country who are familiar with these trees in their native haunts, that with scarcely an exception the trees of the Pacific Coast are larger in every characteristic than their brethren in the interior; hence the errors that so many writers have fallen into when describing, not only the Conifers, but many of the deciduous trees and shrubs as well.

These remarks apply to the foliage, flower, and fruit as well as to the trees themselves, and can best be ascertained by studying the specimens as they grow. It appears to me, however, that if our writers on the Coniferæ would endeavour to curtail the list of species instead of multiplying names, their labours would prove more beneficial to the science at large, bearing always in mind that something more than size and colour are necessary to constitute a species. Although we cannot define what constitutes a species in plain words, there are certain idiosyncracies, if I may be allowed to use the expression, that appeal to the eye of a critical botanist, and very frequently save him from falling into error.

A botanist anxious to form new species can readily satisfy his ambition by taking in hand the Pinus ponderosa. It sports into such a variety of forms that one can scarcely believe the huge trees of California to be identical specifically with those of Pike's and Gray's Peaks in Colorado, and yet they are scientifically the same. *Josiah Hoopes.*

Florists' Flowers.

THE JAPANESE CHRYSANTHEMUMS, so curious and grotesque, and yet so beautiful and striking in character, are fast finding favour with those who have house accommodation for blooming a few plants in autumn. As a rule, they do not fully develope their flowers till the middle of November, and even later; therefore they cannot be depended on for cultivation out-of-doors—in fact they are altogether unsuited for it, both by their tall and erect habit of growth and the late period at which they bloom. For house decoration the plants should be grown in pots, and allowed to carry two or three main flowering shoots according to their size. Mr. Cannell states that they must have good cultivation, and as soon as the flower-buds appear he recommends that they be reduced to one on each shoot, and grown very strong, otherwise the flowers will possess neither form nor beauty. The Japanese varieties possess one great advantage over the ordinary large-flowered kinds, in that the blooms vary so much in character, not having that monotonous similarity of form so common in the Chinese Chrysanthemums. Good plants to flower in autumn can be had from cuttings struck at this season of the year, and grown on into size to insure fine plants by the autumn. Some of the best of the older varieties are Elaine, large white florets, flowers very fine and full; Dr. Masters, long sword-like florets, the upper surface bright yellow changing to red, the reverse deep red, and tipped with gold all over the surface; Hero of Magdala, blood-red and orange-buff, very novel and striking; Yeddo Lilac, rosy lilac, with a paler centre; Nagasaki Violet, dark rose with violet and golden disk, a very pleasing combination; Wizard, a curious and yet beautiful variety, flowering in the form of loose tassels, of a bright red colour: this is of dwarfer growth than usual with this race, and one of the earliest to flower; Grandiflora, large golden-yellow, very fine and full; James Salter, flowers very double and of immense size, and composed of a large number of broad ribbon-like florets, of a clear lilac or mauve hue, shaded towards the centre, and these florets, as the flowers expand, become curled and twisted in a most extraordinary manner; and Fair Maid of Guernsey, pure white and entirely distinct, the flowers composed of long ribbon-shaped florets. When in bloom the flowers should be kept as dry as possible, and they will last much longer in consequence.

New Garden Plants.

PHALÆNOPSIS INTERMEDIA (*Lindl.*) BRYMERIANA.

This is a very beautiful thing, and it is very probable it will increase in beauty next year, as was the case with P. Veitchiana, which I scarcely recognised when it flowered the second time. It has "smooth round green roots, green even at the tips." The leaves are "intermediate between those of P. Schilleriana and amabilis. They are slightly speckled and not shining, and the back is more decidedly like that of P. Schilleriana. They are about 9 inches in length, and 2½ in the broadest part." The flowers are just beautiful, yet smaller than those of P. Schilleriana. Sepals white, the lateral ones spotted with purple at the base. Petals richly washed with purple. The anterior part of the lip deep crimson-violet, the lateral parts white, edged and blotched with deep crimson-violet. The callus yellow, with crimson blotches. The plant belongs to that celebrated importation Mr. S. Low made last spring. I obtained flowers and the best information from the lucky possessor, Mr. E. Brymer, M.P., Ilsington House, Dorchester, a most zealous Orchidist, to whom the beautiful variety is dedicated. *H. G. Rchb. f.*

DENDROBIUM BRYMERIANUM, *H. G. Rchb. f.; Gard. Chron.* 1875, ii. 323.

When I described this species I had no idea how beautifully it developes. I have just obtained from Mr. Harry Veitch a flower received from E. Salt, Esq., Fernichurst, Shipley. Well, it is Brymerianum, but developed as if it were a Desmotrichum. The whole anterior part of the lip is solved in very long fringes. I should think some racemes of this plant, laden with the great golden-yellow flowers, the lip cut in many long tendrils, would make a most gorgeous appearance. It is a most interesting pendent to the wonderful D. Lowii. May it not be so shy of flowering! *H. G. Rchb. f.*

MASDEVALLIA DAVISII, *H. G. Rchb. f.; Gard. Chron.* 1874, ii. 710; *Bot. Mag.* 1875.

I have recently obtained a flower from the collection of Mr. Burnley Hume, sent by Mr. Harry Veitch. It proves to be a very attracting plant, on account of its deep yellow flower. Let me add that it now shows those deep purplish eye-spots at the base of the tube of the perigones missed by Dr. Hooker in Mr. Fitch's representation, from which he described the plant. Beautiful as the flower is, it may improve immensely in a few years, if the plants are kept under good cultivation. I had recently in my hands the first flower of Masdevallia Veitchiana, H. G. Rchb. f., seen in the Veitchian nursery, and another one obtained 1875—with a series of intermediate degrees between, the last one nearly surpasses the wild flowers originally discovered. It rather appears that few Orchids are so thirsty as growing Masdevallias. Want of moisture may be the reason of several disappointments, though, as a rule, they appear to be very well grown nowadays universally. "*De l'eau, de l'eau, et encore de l'eau*" is the great mystery of Orchid growing in the opinion of M. Rivière, of the Luxembourg garden, and the Masdevallias, no doubt, support his view. *H. G. Rchb. f.*

Garden Operations.

PLANT HOUSES.

Greenhouse Hard-wooded Plants. — The earliest Epacrises that have done flowering should be cut back to within 6 inches of where the shoots were shortened to last year; these plants are frequently spoilt by not being sufficiently cut-in, which gets them into a bare, naked, unsightly condition, with little flower except at the top. Any that have got into this state may be headed back into the old wood, reducing them to one-third their size, but this should not be attempted unless they can be accommodated with a genial temperature of something like 50° in the night and 60° in the day, with plenty of light and a moderate amount of air in the day; so managed they will break freely, making long vigorous shoots. Plants treated in this way will be benefited by an application of "Standen's Manure" when they have got fairly into growth; it will in most cases be better than potting the same season they are headed back. Acacias and Genistas that have been forced should also be similarly cut back, reducing them sufficiently to keep them in shape, and on no account placing them after flowering, as is sometimes done, in cold pits or similar places, where the disposition to grow which has been induced by submitting them to heat will be checked to the certain injury of the roots and retarding growth.

Camellias.—The first-bloomed plants should be encouraged to make growth by a little warmth and a close moist atmosphere, syringing freely overhead every afternoon. Strong plants with plenty of healthy roots now in growth when well drained should have water liberally applied to the soil: manure-water once a week through the growing season will much strengthen them; let it be given in a clear state, and if a moderate quantity of soot is added it will not only improve the appearance of the foliage, giving it a deep green hue, but it will also help to banish worms that may have taken up their abode in the soil, and which if existent to any considerable extent will do serious mischief by choking up the drainage and inducing a sour unhealthy condition of the soil. Camellias that are about finishing flowering, and that are much cramped for pot-room, may be shifted at once, but where this can be avoided I much prefer potting these plants just when the growth is completed before the flowers are formed, for injury to the roots inevitably takes place, on account of their brittle nature, when they are potted immediately before growth has commenced. Any that have got into a straggling naked condition should be at once cut back, to avoid injury from bleeding. In cutting back these plants it is of no use resorting to half measures, but reduce them sufficiently to lay the foundation for a compact bushy specimen that will bear looking at for years to come. After they are cut in keep them moderately dry at the root, and for three or four weeks in a night temperature of 45°, with 10° or 15° higher in the day. Also at once cut back large plants that are intended to be grafted, which operation it is better to carry out immediately, placing them in heat. Do not attempt to graft or head-down any plant that has not got plenty of healthy roots *T. Baines.*

FLOWER GARDEN.

All the rough work, such as wheeling, turfing, walk-making, &c., should now be finished, or if it is not, push it to a close vigorously, after which cut all the verges and roll the walks, resurfacing such as require it. On some gravels Stonecrop (Sedum acre) and Spergula pilifera are very troublesome, and their eradication almost a matter of impossibility. Salt applied twice or thrice successively, at intervals of a week, is the best remedy I know of, though I have the greatest aversion to its use, first on account of the injury caused through the careless use of it, and secondly because, if once used, it must be so constantly to keep down the weeds, for after a certain time it acts manurially and causes the weeds to grow thicker and faster. Frequent rolling tends greatly to keep down weeds, and any extra time spent at this operation saves a large amount of weeding, and ensures firm, well-kept walks. Roll the lawn at least once weekly till mowing commences, after which the machine will do all the rolling required.

If grass seeds are to be sown they should be done now, and there will then be a chance of their germinating and getting established before a dry period arrives. The ground should be levelled and made firm by rolling, after which rake it over with a coarse-tined rake, and sow the seeds; again rake and roll, and the operation is complete. If a sharp frost intervenes between the sowing and germination of the seeds another rolling should be given, to ensure the seeds being well compressed in the soil.

Rose pruning ought now to be completed, and the beds or borders made trim for the season. If the Roses are thinly planted, and it is desired to fill up the beds with some other plant, Mignonette may be sown. To my mind, this associates with Roses better than any other plant that can be named. Violas also look well, and some few annual flowers, such as Sanvitalia procumbens, Saponaria calabrica, and Virginian Stock. I have also seen and used Gladiolus amongst them with good effect, the spikes of flower making a capital succession to the Roses, and now is the time to plant these, putting them a couple of inches under the soil, and with each bulb a handful of sharp silver sand, which is a preventive of rot.

Look well to the stock of bedding plants as the season is advancing apace. All kinds of tender plants are so readily increased, where proper appliances are at command, that no excuse for being short of them should ever be attempted. Forethought as to numbers required, and timely commencement of propagation, will always insure a sufficiency of plants. To make room for more tender subjects the hardier kinds of Pelargoniums, Verbenas, Ageratums, and Lobelias may be transplanted to turf or cold pits, but must be protected whenever the weather is threatening. Pot off and prick out seedlings of the various "subtropicals," and do not allow them to have a check of any kind, as it tells against them the whole of the season. When a suitable situation can be found—say a dell, or near water, or a sheltered recess in any part of the dressed grounds—subtropical gardening should be attempted by way of relief to the unavoidable formal style of parterre gardening. *W. Widdmith, Heckfield.*

FRUIT HOUSES.

Vines.—Where Grapes are now fairly set and swelling, so that the best-formed bunches can be selected, no time should be lost in taking off all superfluous clusters, so as to have a fair and evenly distributed crop. It is somewhat difficult to give a general definition as to the amount of fruit that may be left, so much depending not only on the constitutional vigour of the kinds grown, but also on the season at which the Grapes are required for use. Vines which are required to ripen the fruit early in May or June, have to do this to a great extent during the short and comparatively dark days of the spring months, and therefore should be cropped much lighter than those required to ripen in July and onwards. Thin the berries as soon as the best-swelled can be distinguished, and keep up a moist atmosphere by sprinkling the floors, paths, &c., three or four times daily. A little manure-water so applied on mild afternoons, after closing the house, has a beneficial effect on both foliage and fruit. Keep a steady night temperature of 60°; give air when the thermometer rises above 70° with sun-heat, and close early in the afternoon. Vines for later crops will now require daily attention as to disbudding, stopping, and tying when necessary. Keep the winter house still as cool as possible consistent with the exclusion of frost. Outside borders of vineries which have been protected by leaves or other fermenting material may now have a considerable portion of this removed, so as to admit of sun-heat reaching the soil, merely keeping a mulching of the leaves or litter to prevent sudden variations of temperature in the border. *William Cox.*

Peaches and Nectarines.—Let the artificial temperature at night in early started houses remain at about 55°, and let 65° rule in the daytime until the stoning process is complete. After this stage much more heat may be tolerated to accelerate the crop, although a medium course in this respect will ensure the best results. In order to keep the foliage of the trees clean and healthy, copious syringings will now be necessary every day. Proceed with thinning the fruit, leaving at this period more than ample for a crop, and finally defer this matter until the stones are perfect; likewise attend to stopping and training. For the sake of symmetry heel in the shoots which are to remain where they are about 4 inches long. "This practice considerably adds to the appearance of the trees without involving extra labour," and so regulate the growths as to avoid having them densely packed together. Those which are very exuberant should be stopped when 8 or 9 inches of wood is made, and the terminals also under the same conditions when about 18 inches long. See that water at about the temperature of the house is applied to the borders when necessary. The stimulus which is imparted from a sprinkling of guano over the surface of the border once a week or fortnight is very beneficial, and, therefore, it is commendable. The treatment, as recorded in former Calendars, during the early stages of growth for the house in which forcing was commenced in December last, will, under the several conditions, be applicable to the succeeding one. In late houses, where Nature is merely assisted when circumstances demand it, these should be abundantly ventilated whenever favourable, and unless it be requisite to advance the crop so as to ripen it by the beginning of July no artificial means need be applied, except when the temperature in the house drops below 40°. Attend to disbudding and stopping in this case at the earliest stage of development, and as growth under these conditions will be vigorous, sufficient space must be allowed. Take advantage of fine sunny afternoons to syringe the trees whilst they are in blossom. *G. T. Miles, Wycombe Abbey Gardens.*

Cucumbers.—In a former article I drew attention to the convenience of having the structure devoted to the culture of Cucumbers and Melons divided into small compartments. Where this arrangement is adopted, the spring-sown Cucumbers are now coming into bearing, that portion which has been at work all the winter may be cleared of its present occupants, thoroughly washed, cleansed, and prepared for the reception of either Cucumbers or Melons, according to the requirements of the family. Assuming that strong plants established in pots are now ready for planting out, the hills for summer culture should be formed as far as possible from the hot-water pipes, otherwise red-spider and thrips will soon attack the plants, and prevention is always better than cure. If old plants must be retained a complete change of foliage may be brought about by gradual thinning at short intervals and light cropping. A portion of the exhausted soil may also give way to a light, rich, turfy compost, into which new roots will soon penetrate, when stimulants may be given. A good stock of plants should now be raised for succeeding forced Potatos in pits and frames, allowing about four weeks for them to become fit for turning out. The cold tempestuous weather of the past fortnight having been unfavourable to Cucumbers in frames, but little progress will have been made unless constant attention has been paid to the turning and renovation of linings, early closing, and heavy covering at night. *W. Coleman, Eastnor.*

KITCHEN GARDEN.

The weather of late has been almost as inclement as at any time during the depth of winter, and has for the present put an end to all preparatory operations connected with seed sowing; however, a few sunny days, with the usual drying winds that generally prevail more or less during the month of March, will soon put matters right, and the work of cleaning, sowing, planting, &c., must then be pushed on in real earnest. Tender vegetables, such as Cauliflower, Celery, Lettuce, &c., that have been sown in boxes or slight hotbeds should be pricked out under glass in light rich vegetable mould, and, if possible, where they can enjoy a little bottom-heat, so as to grow them quickly on without a check. If seeds of early Broccoli are not yet in, a sowing should be made at once on a dry sheltered border, and a similar position ought likewise to be chosen to get in a bed of Leeks, Brussels Sprouts, and Cabbage. Parsley is both useful and ornamental as an edging plant in certain positions in the kitchen garden, and a bed sown thickly will afford the necessary plants for transplanting when the best can be chosen for the purpose. The Hamburgh variety being grown for the sake of its root should be sown in deep loose soil, where it can penetrate freely and attain its proper size. The main crop of Onions should be got in as soon as the land is in a fit condition to receive the seed. Few vegetables penetrate more deeply than these, and, therefore, ground that has been recently trenched and heavily manured should be selected to grow them if large-sized bulbs are desired. Make the land as firm as it is possible to do so by well treading it, after which give it a rough rake over, and allow it to become nice and dry before sowing the seed and giving the final finish. The main crop of Potatos ought now to be got in, except in low-lying districts where late spring frosts prevail, and in such situations planting had better be deferred till April. In most places the bulk of the early varieties to furnish the first supply have to be grown in the gardens, and it is a good practice to plant the rows at wide distances apart, so as to admit of Broccoli, Brussels Sprouts, or some other winter crop, being planted between. By so doing both are greatly benefited, as the Potatos are more productive and less liable to disease, and the power of Broccoli to resist frost when so treated is greatly augmented from exposure to sun and air. All growing crops should frequently have the hoe run through them, to loosen the soil and keep weeds in check. Cauliflowers under handlights or other protection should have all the air that can be given them, or they will turn in prematurely; those wintered under walls or in frames should be got out at once in sheltered situations. Where glass can be spared for the purpose, a few old lights placed over a bed of Asparagus will help to forward it considerably, and thus save taking up the roots. Forced vegetables, such as Potatos, Carrots, &c., must now have plenty of air, so as to keep them sturdy and strong. As the former are dug for use, so as to set frames at liberty, they may at once be profitably occupied by being planted with French Beans, which will relieve the forcing houses of a dangerous crop, and afford a supply till they can be got on a warm border. A slight bottom-heat will, however, be required to give them a start. *J. Sheppard, Woolverstone Park.*

THE
Gardeners' Chronicle.

SATURDAY, MARCH 18, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, March 20 — Sale of Orchids, at Stevens' Rooms.
WEDNESDAY, Mar. 22 — Bristol, West of England, and South Wales Chrysanthemum Society's Spring Show (two days). Sale of Specimen Plants, at Stevens' Rooms.
THURSDAY, March 23 — Sale of Orchids, at Stevens' Rooms.
SATURDAY, March 25 — Sale of Roses, Shrubs, Fruit Trees, Bulbs, &c., at Stevens' Rooms.

WE give in another column the introductory portion of Dr. HOGG'S paper on a new CLASSIFICATION OF APPLES, which appeared in the *Journal of Horticulture* last week, and of which the Doctor gave a short account before the Scientific Committee on the 1st inst., and again before the Fruit Committee at its last meeting. The great want of such a classification makes us welcome any such attempt with *empressement*, and when that attempt is made by the author of the *Fruit Manual*, we are the more disposed to receive it with acclamation.

Now that we have the full text of the scheme before us, we are in a position to examine, in part at least, into its merits; and, although from the late period of the season it has not been possible for us to apply the most satisfactory of all tests—practical use—to it, except to a very limited extent, yet we have seen enough to convince us that some at least of Dr. HOGG'S characters are good, and easily applied. Moreover, we have the assurance of others that the classification has been tried by them with satisfactory results. Dr. HOGG is careful to make it known that the characters upon which his classification depends have been long known; and, with the modesty which characterises a man who has studied long and deeply, he freely admits the imperfections of his scheme, and invites criticism and suggestion. We shall therefore not scruple to express our opinions on the general principles of the classification, reserving any detailed comments on its practical value till time and season shall permit us to come to a fairer conclusion than it is now possible to do.

In the first place we may express a hope that the author will make public the details of his scheme in some form less complicated and more easily read than that in which it occurs in the *Journal of Horticulture*. The form in which it appears there was doubtless necessitated by the "pressure on our space." The same reason prevents our giving the re-arrangement of Dr. HOGG'S tables—which we have made for our own use in a less condensed and clearer form, and freed from the bewildering array of i, ‡, †, §, *, and so on. It may seem that this is a minor matter, but, considering that these tables are designed for the special behoof of gardeners unaccustomed to the use of such "keys" we think really a matter of considerable importance.

Proceeding now to discuss the general principles of the scheme, we may say that the classification before us is avowedly and to a great extent necessarily "artificial." Its object is practical utility alone. It is intended as a device to enable the uninitiated to discover the name of an Apple, and in so far as it succeeds in doing this will its merits be recognised. It is not intended as a scientific method of grouping together those Apples which are most nearly allied in the *ensemble* of their characters—putting, as it were, brothers with brothers, cousins with cousins, according to their known or assumed degree of kinship. For purposes of practical pomology such refinements would be out of place. Nevertheless, whatever be the object—whether one of convenience only, or one with more comprehensive aim—everything depends on the value of the characters employed. We use the word "character," of course, in its botanical signification of a mark or sign of distinction. There are several ways in which the value of characters is appraised and estimated by naturalists, but in the present case, where we are dealing with a matter of practical convenience only, there is only one direct means of so doing, and that is to ascertain its degree of constancy. We say degree of constancy, for, as every one knows, absolute constancy in Nature is a thing all but unknown. As Dr. HOGG well remarks, "there are varieties which refuse to submit to any scheme of man's devising; Nature refuses to be bound, and we must adapt our ideas to her laws."

A character, then, from our present point of view, is valuable in proportion as it is constant and invariable. The more constant or the less variable the better the character, and conversely. Complete evidence upon this point, if attainable at all, is only to be had after many seasons' experience — after the examination of samples of the same variety of Apple grown in every locality, and under the most widely diverse conditions. For ordinary purposes, where great nicety is not required, one season will probably be sufficient if abundant specimens be forthcoming.

But while the test of actual use is the only perfectly satisfactory one that can be applied, it is quite possible to arrive at approximate conclusions from a careful investigation of the general principles upon which the classification is founded, and from the consideration of the characters on which it is based. Those characters are the appearance of the eye, open or closed, the appearance of the carpels or seed-cells open or closed, the form of the flower-tube (calyx-tube), and, fourthly, the position of the stamens at or near the margin, in the centre or at the base of the tube. Then follow certain characters considered as of minor importance. By the employment of these characters Dr. HOGG is enabled to throw Apples into four principal groups, which are again divided and subdivided for facility of reference. In all somewhat fewer than 300 varieties of Apples are so classed and arranged, and to get so many subjected to any sort of arrangement is in itself a great advantage, however much open to future improvement that arrangement may be. It is unfortunate that it is quite impossible for practical use to combine with these characters of the fruit those derived from the flower, the leaf, and general habit of the tree. Nevertheless, we hope Dr. HOGG will find leisure and opportunity of doing so in the future, as we have no doubt that such an investigation will enable him to arrive at a better estimate of the value of the characters of the fruit.

If the flowers, for instance, of the various forms of Apples could be examined in various stages, and the appearances co-related with those presented by the ripe fruit and seeds, the significance and import of these latter would undoubtedly be far better appreciated than is possible by the mere inspection of the ripe fruit. Still, taking things as we find them, it is possible, as we have already said, to arrive at an approximate estimate of the value of any scheme of classification by an examination of the general principles upon which it is based, and this we propose to do in a subsequent issue.

— AT the March meeting of the Edinburgh Botanical Society, Professor BALFOUR read a communication from Mr. JOHN GARRETT, Whittinghame Gardens, East Lothian, regarding a specimen of EUCALYPTUS growing in the open air there. Mr. GARRETT says: "It was grown from seed sown here, by the then gardener, about thirty years ago, and it has been growing in its present situation, as nearly as I can ascertain, about twenty-seven years. At the beginning of 1861 it had attained the height of about 25 feet, and was then a very symmetrical tree. During that spring like a great many other plants it got nipped with the frost, and was cut over at about 9 feet from the ground. It remained standing like a bare post, without signs of life, for some time. This led to the conclusion that it was wholly dead, and it was consequently ordered to be taken out. The men had begun to root it up, when one of them discovered a bud about to burst. On this being reported to the gardener he decided to let it remain. It threw out several shoots from near the base, and also some from near the top of the old stem where it had been cut over. A few years later some of the lower shoots were layered, and several young plants raised therefrom, but all of them have now disappeared. The original plant is now between 48 and 50 feet high. The main or old stem, at 1 foot from the ground, which is the smallest part of it, is 7 feet 10 inches in circumference. The main branch, issuing from near the top of the old stem, is 4 feet 10 inches in circumference; one of the other branches springing from near the base is 3 feet 4 inches, and another is 3 feet 1 inch. There are several others of smaller dimensions." Specimens of the plant had been submitted to Mr. BENTHAM, who believes it to be a variety of E. viminalis.

— The complimentary dinner given to Mr. BARRON by the Lindley Club on Wednesday last passed off most satisfactorily. About forty gentlemen sat down, and a very agreeable evening was spent, the health of the guest being drunk with musical honours.

— Mr. EDWARD HARDY, Forest Hill, writes to the *Times*:—"The snowstorm of Sunday (about 2 P.M.) was distinguished here by the appearance of the very remarkable phenomenon known as 'RED SNOW.' As I believe such an occurrence is very rare in this country, I am rather anxious to know what was the range of it—and whether the appearances in other parts corresponded with those which I observed. Immediately on the ground becoming fairly covered with snow, there appeared at intervals on the garden paths reddish patches of somewhat circular form; on some of the flower-beds, and in a sheltered part of the grass-plot, the redness was more general and less distinguished by any particular shape, though nowhere quite continuous. On being taken up in a spoon the 'red snow' had a very distinctly red tinge, much resembling Strawberry ice, and on melting has left a red deposit which with a very low-powered microscope has the appearance of vegetable cells."

— ROSES MADE FROM BREAD CRUMBS are the latest novelties introduced into Covent Garden. The flowers, which are small in size, are excellent imitations of dark red Roses. They may be seen in Mr. GARCIA'S window.

— A meeting of amateur growers of CHRYSANTHEMUMS was held in Maidstone, on Thursday, March 9, when it was resolved to establish a club, and to invite gentlemen to become members. It is proposed to hold an exhibition, both for plants in pots and cut blooms, in November, and a prize list and rules will be issued as soon as possible.

— Mr. HARRISON, of Darlington, mentions in the *Gardeners' Magazine*, that a plant of the MARÉCHAL NIEL ROSE in his nursery "has attained the immense growth of 500 yards, and is now (Feb. 22) making nearly 2 yards of wood per day." Mr. HARRISON continues:—"We have people coming from all parts to see it. It is now beginning to bloom, which will stay its growth. Splendid blooms have gone to Covent Garden to-day at 1*s.* 6*d.* each. What a pity to have to destroy such a plant! as I must, because the place has been sold over my head, and I shall have to move this spring to Catterick."

— The first FLOWER SHOW to be held at the CRYSTAL PALACE during the coming season is announced for May 19 and 20. The Annual Rose Show is fixed for June 16 and 17, and an exhibition of fruits and flowers for the middle of August.

— At the last meeting of the HIGHLAND AND AGRICULTURAL SOCIETY a premium of £25 was

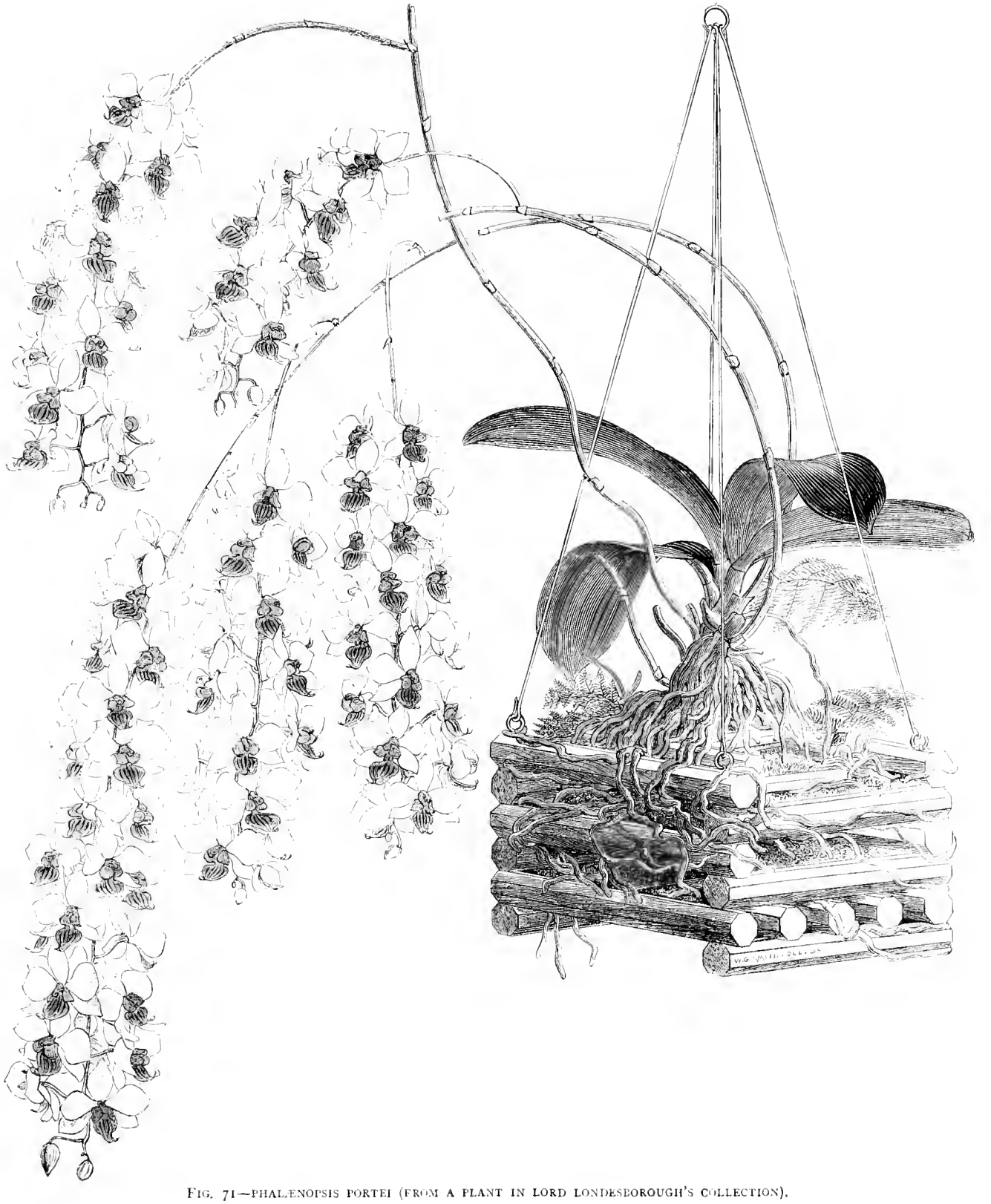


Fig. 71—Phalænopsis portei (from a plant in Lord Londesborough's collection).

awarded to Mr. R. Henderson, Crosslanes, York, for the best text-book on Agriculture as a Branch of Physical Science, including the Application of Botany, Geology, Chemistry, and Animal Physiology.

—— The schedule of prizes for the International Potato Show, to be held at the Alexandra Palace on September 28 and 29, is a very liberal one, and should bring about an even better show than that held last year. The Alexandra Palace Company contribute 40 guineas to the general fund, and special prizes of various amounts are contributed by Messrs. Sutton & Sons and Messrs. James Carter & Co., the President, James Abbiss, Esq., J.P.; Messrs. Daniels Brothers, Mr. John Coutts, The Lawson Seed Company, Messrs. Hooper & Co., Mr. J. Harrison, Mr. Freeman, Mr. R. Dean, and Messrs. G. Gibbs & Co. The Vice-President is Mr. Shirley Hibberd, and the Hon. Sec., Mr. Peter McKinlay.

—— Among new publications on our table, fuller notice of which we are obliged to defer, are Dr. Hooker's shilling *Primer of Botany* (Macmillan), which no young gardener should be without; and Mr. Randal Alcock's *Botanical Names for English Readers* (Reeve & Co.), a work very appropriate at the present time.

—— The question whether Helleborus niger is a seed-producing species or not, has led to some discussion among fanciers of these fine hardy plants. Miss Hope, of Wardie Lodge, has asserted that H. niger does not seed; but that what are supposed to be seedlings are simply small pieces of the roots that had made growth round the spot occupied by the plants.

Mr. B. HOOKE, Bradfield, Berks, has raised seedlings from H. niger, but at present without any appreciable departure from the type. Mr. HOOKE has a collection of some thirty species and varieties, but he thinks H. niger major to be the finest of all. H. colchicus is blooming finely just now.

—— Mr. BENNETT, of Manor Farm Nursery, Stapleford, Salisbury, sends us beautiful buds of the TEA ROSE MADAME FRANÇOIS JANIN, than which we can imagine nothing more beautiful and agreeable as a button-hole flower, for the neat-looking buds, which are neither too large in size nor clumsy in form, are of a deep rich Apricot colour, and the perfume is most delicious and penetrating. This Rose should be largely grown for decorative purposes.

—— It would be idle to assert that THE WEATHER of late has not aroused grave apprehensions in the minds of all who gain a livelihood from the soil. A remarkably wet autumn naturally led to the conclusion that we should at least get a dry spring, and with it a favourable seed-time, but this hope has not been fulfilled, for although we have not had to lament floods we have had such frequent, although intermittent rains that it has been almost impossible to work the soil to advantage. And in the case of heavy or even loamy clays any attempt to work them has only resulted in making matters worse than better. The hope bred by the few fine drying days of last week was terribly dissipated by the fierce storm of snow, sleet, and rain that prevailed last Sunday, and converted it into one of the most winterly days experienced for a long time. The ground was thus once more not merely saturated but water-logged, and the mischief caused can only be repaired by a week's continuous fine weather. To have reached the middle of March and yet find in many districts that it has been impossible to prepare the ground in any way for planting is most disheartening, and as one result it is probable that this will have to be deferred to a much later period than usual. Even then, however, the soil works stiff and stubborn, and can hardly be reduced to a friable state all the season. The Weather Forecast Association announced last autumn that we should have a very severe winter; practically the winter has been the reverse of severe, but it is a long dreary one, and we must now look for a considerably retarded spring.

—— REANA LUXURIANS, a grass very highly lauded as a forage plant, is reported to be flourishing at different altitudes in the Isle of Bourbon, and is regarded as a valuable acquisition to the country. As we have already recorded, seeds of this grass were imported and distributed by the French Society of Acclimatisation. It should be looked after by our agricultural friends in the colonies enjoying a suitable climate, for if half that is said of it be true it will produce a profitable crop.

—— In striking contrast to the affairs of the Royal Horticultural Society the FRENCH CENTRAL HORTICULTURAL SOCIETY issues a balance-sheet, showing a good sum in its favour. With a total income of less than £4000, there was a balance of cash in hand of nearly £400 at the close of last year. But this is not all: the property and assets of the Society are estimated as exceeding its liabilities by upwards of £21,000!

—— PHYSALIS EDULIS is receiving the attention it deserves from some French horticulturists, and M. DE ST. QUENTIN, writing in the *Bulletin de la Société d'Acclimatation*, declares the fruit to be superior to the best flavoured Tomatos. With us it is still very little grown, and usually more as a novelty than for the sake of its crop of fruit, but doubtless it will sooner or later come into favour in this country, just as the Tomato has done. Within the last ten or fifteen years the demand for Tomatos in England has increased to an enormous extent, though few persons like them on the first trial; but after the taste for them is once acquired nothing is more palatable. The same remark applies to the Beetroot, which is now rapidly superseding the less wholesome and more expensive indigestible pickles.

—— An attractive feature in Sir JAMES WATTS' garden at Abney Hall, Cheadle, at the present time, is a vase out-of-doors filled with the Scilla sibirica and the variegated Golden Thyme. Pieces of decoration such as this are very pretty, and few fail to take notice of them at this time of year. A broad vase would be best for this, and it should be raised as a bed in the middle, so as to show the Scillas to advantage. The Scillas should be planted about 2½ inches apart, and the Thyme thick enough to form a carpet between.

—— A correspondent of the French Acclimatisation Society reports that ECHINOPSIS MULTIPLEX has this winter borne 14° of frost for six nights in succession without receiving the slightest injury. Subsequently it was under snow for ten days, and took no harm therefrom.

—— The following extract from the *British Medical Journal*, referring to the astonishing physical endurance of the American pedestrian, WESTON, may be interesting to plant lovers, as additional testimony in favour of the COCA, to which we have alluded at various times:—

"At intervals, as he persistently pursues his route, WESTON may be seen to go through the action of chewing; and a brown stain upon his lips, which the observant spectator may notice at the same time, leads to the suspicion that he is refreshing himself with a quid of tobacco. Yet it is well known that both during a walk, and for some time previous to it, WESTON renounces tobacco, and on these occasions he is masticating a substance which, although credited with some of the properties of tobacco, is the most serviceable of its class for use under exertion. That substance is the dried leaf of the Erythroxylon Coca. This, it need scarcely be remarked, has no connection with the Cacao plant, although the active principle of each is said to be similar, if not identical, with the other, as well as with that of Tea, Coffee, and Guarana. Provided with adequate supplies of this leaf the South American Indian is able to perform tasks, prolonged over a period of days, not only without food, but without discomfort. As a rule, however, he uses it during the day only, in the evening taking a copious meal with a hearty appetite. Perhaps the best authenticated accounts of its effects, save those which have been written by such travellers as POPPIG and VON TSCHUDI, is that given by Sir ROBERT CHRISTISON in his address to the Edinburgh Botanical Society in 1875. That gentleman, who is well known to be advanced in years, related how he made the ascent of Ben Voirlich; and how, arriving at the summit greatly fatigued, he chewed a portion of Coca leaves, and found himself able to make the descent with firmness and juvenile elasticity. He also stated that, with the assistance of the Coca leaf, he could walk 16 miles with ease, while without it he felt (on other occasions) very much fatigued. According to Dr. ALEXANDER BENNETT, this plant, when taken into the system, affects the pulse and respiration, increasing both in frequency, and the former in force, at first; subsequently, if the dose be large, it diminishes both. VON TSCHUDI also refers to its effects upon respiration from a personal observation of them, alleging that under its influence, at a height of 18,000 feet above the sea level, he was able to run, hunting and shooting, with no more discomfort than he would have suffered on the sea-coast. The general opinion is that Coca, like other plants from which theine may be extracted, diminishes the waste of the tissues; and on no other hypothesis does it seem possible to account for the power of sustaining prolonged exertion without food which it confers, for no part of the leaf is swallowed, and even of the juice extracted by mastication a part is rejected.

Hence it appears that this plant acts upon the system in precisely the manner anticipated, by retarding the waste of the tissues; and that the reduction of temperature by 2°, which was noticed in WESTON'S forty-eight hours' walk, may be accounted for.

—— Mr. ALFRED DAWSON communicates to the *Times* a rumour which he has heard, to the effect that an act of Vandalism is projected by some one connected with the suburb of Hammersmith. It is to cut down the noble Elm trees, known, doubtless, to thousands of those who visit the locality on the day of the boat-race, situated at the east end of the Upper Mall, Hammersmith. These trees are not only some of the finest specimens of their kind in the west of London, but are objects of historic interest, having been planted nearly 200 years ago by the Queen of CHARLES II. Mr. DAWSON makes this communication with the object of evoking public feeling in the matter, and also of getting from those in whose legal power the trees remain a clear statement of the cause of this rumour, although he believes it would be found that this power is not really possessed by any one, and that the only right in the matter is of the same sort as what we have seen so much of lately in connection with our ancient forests.

—— The plates in the current number of the *Floral Magazine* represent ×Dracæna Hibberdi, with foliage of "a luminous carmine." Begonia Magenta Queen is a fine broad-petalled kind, of great brilliancy of colour. Three Gloxinias follow—Masterpiece, Crown Princess, and Mauve Queen, all of the pendulous section, and presenting little novelty. The plants just mentioned are all in the possession of Mr. WILLIAMS, by whom they will be sent out. Amaryllis Honneur de Haarlem has flowers of a ground colour of pale yellow striped with linear streaks and dots of purplish pink—a distinct and handsome kind. This is introduced to British commerce through Messrs. VEITCH.

—— We learn that Mr. ANTHONY WATERER is again about to "heard the lion in his den" by making an EXHIBITION OF ENGLISH-GROWN AMERICAN PLANTS in America. The occasion is the forthcoming International Show at Philadelphia. It will be remembered that a year or two since we reported a grand show of Knap Hill American plants which took place with great *éclat* at Boston, the "improved" Americans being then fully appreciated by the immense concourse of visitors which flocked to see them. The experiment is now to be repeated. The plants are probably already there, as they were sent out in the *City of Bristol*, which was expected to arrive in the course of the present week. They are to occupy a tent 150 feet long by 50 feet wide, and are already creating no little interest amongst the Yankees.

—— Some of the HIMALAYAN RHODODENDRONS are in gorgeous beauty just now at Kew. The kinds in flower are R. barbatum, R. arboreum, R. ciliatum, R. argenteum, and R. fulgens, with many others to follow. These are all in the temperate-house, where also is a splendid specimen, 30 feet high, of the Silver Wattle, Acacia dealbata, which, being in full flower, is extremely magnificent. While in the vicinity of Boronia megastigma it is impossible not to be charmed by the delightful perfume of its sombre and peculiar-looking flowers. This interesting species was introduced to Kew about three years ago, and is likely to become a popular plant, if only on account of its odoriferous properties; but in addition to this it is very elegant in habit, and flowers profusely.

PHALÆNOPSIS PORTEI.

THIS species is without doubt one of the finest of the genus. It bears a long drooping and branching spike, which will continue in flower fully four months annually; strong plants will have from forty to sixty flowers expanded at the same time. The sepals and petals are oval in form and in colour pure white, having an extremely pleasing transparency, which gives the white colour a life-like appearance; the lip is three-lobed, but the centre partition is much the larger, and is spathulate in shape, with two slender hair-like appendages at the point, otherwise the most prominent point of the lip is of quite regular outline; its colour is of a bright rosy-red, tinted with orange, making a marked and very beautiful contrast to the white sepals and petals. The habit of the plant, and its foliage, are so nearly like those of P. amabilis that it would be very difficult to distinguish it by the leaves alone. Its roots are rounder than in P. amabilis, in which species they are flattish in shape. As far as I am able to learn, there were originally only two imported plants of P. Portei brought over to this country by Mr. Port, both of which fell into the hands of R. Warner, Esq., of Broomfield. Mr. Warner still retains one of them. The two plants are quite distinct, as indeed all Orchids appear to be if they are seedlings. Mr. Warner's variety has the sepals and petals of a rosy hue, whilst the lip would appear to be even of a deeper red; but the form is exactly the same as in the subject of the present engraving (fig. 71, p. 369). It is rather singular that this Phalænopsis should have managed to survive so long in this country, as only two plants are known to have ever been imported, whilst thousands of P. grandiflora and many hundreds of P. amabilis have been imported and have gradually died. P. Portei roots very readily, and attaches itself

very firmly to the Teak baskets, of which I believe the late Mr. James Veitch was the originator. When one basket is covered with roots just insert it into another of larger size; in a very short time the young growing points will be attracted, and will ramify all over it. There should be nothing used except a little charcoal or cork, to keep the baskets firm. This latter point must be attended to, as no Orchid will root to anything which is constantly shifting about at every watering. P. Pottei will not take so much water as is usually given to Phalænopsids; and if the roots are buried in a heap of stale moss, peat, &c., they will quickly perish if they get wet. It, like its congeners, requires the hottest house, and to be shaded from the direct sunshine. *William Denning, Norbiton.*

OPEN AIR VEGETATION.

By James McNab, Curator.*

February has been rather wintry: snow lay on the ground from the 7th till the 16th, and again from the 25th till the 27th. The thermometer during the month was nineteen times at or below the freezing-point, indicating collectively 113°, the lowest markings being on the mornings of the 6th, 7th, 10th, 11th, 13th, and 14th, indicating respectively 24°, 26°, 29°, 19°, 18°, and 18°; while the highest morning temperatures were on the 17th, 18th, 19th, 23d, 28th, and 29th, indicating 38°, 37°, 38°, 39°, 37°, and 38°. The six highest morning temperatures during January were 41°, 40°, 40°, 41°, 42°, and 42°. During February, 1875, the thermometer was twenty-one times at or below the freezing-point, indicating collectively 75°. The following table shows the amount of frost during the month of February for the last thirteen years:—

1864	165°	1871	16°
1865	98°	1872	13°
1866	39°	1873	123°
1867	12°	1874	69°
1868	10°	1875	75°
1869	6	1876	113°
1870	71		

The snow and frost experienced during the month has considerably retarded vegetation. It, however, is still somewhat early, from the mildness and consequently advanced state plants were in during the month of January. The following is a list of the spring plants annually recorded for their date of flowering.

	1876.	1875.
Rhododendron Nobleanum	Feb. 10	March 13
Dondia Epipactis	Feb. 11	Feb. 5
Bulbocodium vernum	Feb. 16	Feb. 6
Scilla præcox	Feb. 16	Jan. 23
Nordmannia cordifolia	Feb. 16	March 11
Aubrietia grandiflora	Feb. 17	Feb. 15
Sisyrinchium grandiflorum album	Feb. 17	March 6
Sisyrinchium grandiflorum album	Feb. 20	March 8
Scilla siburica	Feb. 20	March 10
Iberis gibraltarica	Feb. 21	Feb. 2
Draba aizoides	Feb. 21	March 8
Orobus vernus	Feb. 23	March 28
Scilla bifolia vera	Feb. 24	March 7

On the rock garden forty-eight species were counted in bloom on February 29, the most conspicuous being the different varieties of Hepatica, Helleborus colchicus, H. purpurascens, H. purpurascens minor, Dondia Epipactis, Crocus Imperati, Galanthus nivalis, G. plicatus, Leucojum vernum, Bulbocodium vernum, Rhododendron præcox, Daphne Mezereum, Saxifraga cordifolia ovata, S. oppositifolia, Primula denticulata, P. purpurea, Iberis gibraltarica and Corydalis angustifolia. There are also to be seen in bloom on the rock garden, Veronica rupestris and Lithospermum fruticosum: one or other of the plants of the former species has been in flower more or less since January, 1875, and the latter since the month of April, 1875. On the grass slopes Snowdrops, Crocus susianus and Scilla bifolia are now flowering in abundance. In consequence of the backwardness of the month from snow and frequent frosts the Snowdrops were not seen in perfection till the 27th of the month. The Crocus vernus and its varieties, although flowering more or less from the 28th of January, did not show a full display of bloom till the end of the month. Most of the shrubby plants mentioned in my last report as being far advanced in consequence of the mildness of the month of January have not suffered, but little progress has been made on them. The yellow Stonecrop is now perfectly yellow although on January 31 the golden colour was only visible on a few pieces hanging down some stones towards the sun. During the month no perceptible change has taken place in the swelling of the buds of forest and ornamental trees, although several were recorded as being in a forward condition.

Fig. 72.—Phalænopsis Portei (flowers nat. size).

Home Correspondence.

Two Good Winter Pears.—After a trial of some seasons the two best of the new (or somewhat so) Pears are decidedly Olivier de Serres and Prince Napoléon. The first of these is in high favour abroad, and is a February Pear here. It is of medium size, Bergamotte-shaped, juicy, and aromatic, succeeding Joséphine de Malines. The second is rather newer in introduction here, and, I should think, not much known yet. For this reason I recommend it highly. It is not unlike the first-named in shape or size, but with me it is rather larger, and comes in later; that is to say, in March. Now, a good juicy, high-flavoured Pear in March is not so easy to find as catalogues tell us, and after the equinoctial season, table Pears really abdicate, *i. e.*, one looks out for the spring fruits then, having had enough of Pears during the winter. Prince Napoléon then arrives at a good time, and being about equal to its parent, Passe Crassanne, in flavour; this is saying a great deal for it. It is also prolific, and at present the trees on the wall show about the finest bloom of any. Needless to add that winter Pears are "wall Pears," and require the very best places. In reporting on these new Pears, I do not mean to say that either is equal to that standard of excellence, Joséphine de Malines. This and Bergamotte Espèren are not to be beaten in their season, nor is Winter Nelis, previously. Such is not my opinion alone, but also that of some of our very best judges. I have also tried many of the very new late Pears, but cannot consider any of sufficient value to recommend them, as I now do Olivier de Serres and Prince Napoléon. The very late Pears are so difficult to ripen that it becomes disappointing; the two here spoken of are not "very late," of course. I shall give the others one more season, and hope to report on them. Others may find them more successful, as soils vary so much, and as to dates of ripening these seem to alter amazingly in different catalogues. *Thomas C. Bréhaut.* P.S. An additional, though sad test of the value of these Pears has just occurred. We were happily able to supply some for a dying girl, whose parents had sought in vain for choice Pears, and who had eaten nothing for days, but liked and ate those sent her.

Pyrus domestica.—Until last autumn there were two fine specimens of this tree standing in the park here. Unfortunately during the high wind of September 27, 1875, one of these trees, which had suffered from gales on previous occasions, was blown down to the ground. The other tree still stands uninjured; it girths 14 feet at 4 feet from the ground, and divides into several branches at 11 feet in height. The foliage is very like that of the Mountain Ash, and the fruit, which grows in clusters, is perfectly pear-shaped, and turns yellow with ruddy streakings when ripe. The fruit is very hard and acid in taste. The following letters as to these trees may be of some interest. They were addressed to my father at the time of the meeting of the British Association in York, in 1844:—

"Dear Sir,—Your tree is not the wild, but the common Service tree, Sorbus domestica.—Yours faithfully, *W. Herbert* (afterwards Dean of Manchester).

"St. John's College, Cambridge, Oct. 10, 1844.

"Sir,—Before leaving York I had had reason to believe that my original idea concerning the wild Pear which you left with me was correct—viz., that it is the Pyrus domestica of Smith, of which one naturalised tree exists in Wyre Forest, on the borders of Shropshire. Mr. James Backhouse examined the specimen, and gave that as his opinion; and since my return home I have examined it carefully, and am satisfied that that is its true name.—I am, sir, your obedient servant, *Charles C. Babington.*"

"York, October 3, 1844.

"My dear Sir,—The botanists here assembled have laid their heads together upon your specimen of Pyrus, and have decided that it is the true Pyrus domestica, only one specimen of which was known to exist in this island—viz., in the midst of Wyre Forest, in Staffordshire. It has therefore afforded much interest to them.—*H. E. Strickland.*"

I may mention that about 80 yards from the specimen which was blown down last year we have still flourishing the old oriental Plane, which girths over 14 feet at about 4 feet from the ground, and then breaks out with eight massive, wide-spreading branches about 10 feet from the root. More recently planted trees seem to find soil and climate suit them here, as we have in the pinetum a Wellingtonia about 38 feet in height. *John Dent Dent, Ribston Hall, Wetherby, Yorkshire.*

Gladiolus.—Although reluctant to prolong this discussion, I must beg to thank "T. F. R." for his candid admission, and for acquitting me of any intention to confound English with Latin pronunciation. Why we say "senator," and yet "creator," is more than I can explain, except by the fact of our language preferring, especially in her adopted words, what the grammarians call "proparoxytones" to "paroxytones." But it was as of a naturalised English word that I ventured to criticise the pronunciation of "Gladiolus;" and the word "society," on the same page as "T. F. R.'s" letter, caught my eye, and appeared to be apposite in argument as well as in position. I cannot follow my opponent into the intricacies of modern Greek pronunciation, which,

* Read at the March meeting of the Botanical Society of Edinburgh.

besides being somewhat foreign to the present inquiry, would occupy too much of your valuable space; and therefore, if he declines to be bound by the muse of Sophocles, I shall appeal from the Attic to what I suppose we may expect to have amongst ourselves before long, the "Pronouncing" Bee. *W. F. H., Weybridge, March* 13.

Juglans nigra.—In a clayish soil it is impossible to keep the branches from being twisted off by the wind every year if the soil is moderately moist. I have never known a season pass without its suffering severely from this cause, so that I have at last been compelled to cut mine down. The soil must never be moist clay, nor can the tree be exposed to strong winds. It grows almost as fast as the common Walnut, but is more slender. *Somerset East.*

Wilcox's Dunham Red or Turnmoss Red Celery.—I can corroborate what Mr. Simpson says with respect to the Turnmoss Celery, having been intimately acquainted with both the late Mr. Wilcox and Mr. Clark, who were excellent judges of vegetables, and always on the look-out for anything of superior quality. During the time Mr. Wilcox was gardener at Dunham Hall he introduced several varieties of vegetables from the South into the neighbourhood, his red Celery being the principal. Its excellent keeping qualities in standing so late without running to seed soon became known in the neighbourhood, where a large quantity is grown for the Manchester market; and through Mr. Wilcox's liberality both plants and seed were freely distributed by him, and was named by the growers Wilcox's Dunham Red, which name is still retained by the growers and in the seedmen's catalogues in the neighbourhood. The large flats grown by the late Mr. Clark at Turnmoss were from Mr. Wilcox's seed, and the variety was called by him Wilcox's Red, which he considered the best late Celery in cultivation. As neither Mr. Clark nor his successors were the means of distributing it to the public, why should they dub it with the name Turnmoss? If priority is to rule the question, its right name is Wilcox's Dunham Red (all the other names are only synonyms)—a name which is worthy of being kept, as Mr. Wilcox was not only a first-class horticulturist, but his amiable and liberal character was most highly appreciated by all who had the pleasure of his acquaintance. *James Smith, Waterdale, St. Helen's, Lancashire.*

The Orchids at Tredrea.—These are looking very healthy, having made good growths, and are showing bloom profusely. Among the plants in flower may be noticed Angræcum sesquipedale, Brassavola glauca, Broughtonia sanguinea, a variety of Cattleya Skinneri with sixteen spikes (upwards of 130 flowers), Cattleya Trianiæ and C. Mendelii; Dendrobium Veitchianum, with eight spikes; D. moniliforme, a large plant covered with bloom; D. crassinode and Wardianum; Cypripedium insigne, C. villosum, and C. venustum; Cœlogyne cristata, Calanthe vestita, Odontoglossum bictoniense and O. Insleayi tigrina; four plants of Phalænopsis amabilis, three of P. Schilleriana; Vanda cœrulescens and V. gigantea; several plants of Lycaste Skinneri and Saccolabium giganteum. A great many more are showing flower, and will keep up a good display for some time to come. Large masses of Dendrobium nobile, nice bits of D. albo-sanguineum, D. Farmeri, D. chrysotoxum, and several others. Dendrobium Parishii grows very fine here in baskets suspended from the roof. A nice plant of Trichopilia suavis will be open in a few days. Sobralia macrantha and Phajus Wallichii are exceedingly strong. Several nice pieces of Cattleya citrina are showing numerous flowers. Several Aerides and Vanda Batemanni are also showing flower. The Odontoglossums are grown in low cool pits, and show by large pseudobulbs and fine clean foliage they like their quarters; while Disa grandiflora seems quite at home in a sheltered corner of the Heath-house. *J. Murton.*

Celery Protectors.—Mr. Brierly, the gardener at The Towers, Didsbury, uses as a protector for Celery from the cold rains, damp, &c., a wooden cover only made of two boards joined together, as the top of a span. By means of this wooden coping—for the plants are in single lines—much water is prevented from getting down amongst the heads. This plan is said to repay the labour incurred in adopting it, and seems a very useful one, especially for Celey that may be wanted late in the season, or where the soil is such that it retains much moisture. *R. M.*

Spring Primroses.—It is generally said, I believe, that strong light has a tendency to "draw" plants upwards, but I too have noticed the fact named by Mr. Earley with respect to Primroses. Those found in the shade have far longer stalks than some on a sunny bank close by, and a few roots at the foot of a hedge in this garden came into bloom this year sooner than those exposed to the sun in a flower border did. Oxlips, Cowslips, and Primroses, all grew in the same garden hedge last spring, but the birds ate the Primroses, and I find this year that sparrows like the blossoms of the white Violet. "I know a bank" sweet with this bloom. *Helen Watney.*

Rose-buds for Button-holes. — Your correspondent "W. T. T." in describing the exquisitely beautiful bouquet Rose, Madame François Janin, has made a slight mistake in the name, calling it Jamin. If "W. T. T." will forward me his address, I will give him the name and history of the other Rose he has described. *H. Bennett, Stapleford, Salisbury.*

Syringing Peaches when in Flower.—Mr. Miller's description of my practice in this matter is a little apt to mislead, though I quite believe that such was not his intention. I hardly adopt the "cold water cure" to set our Peaches, but simply never discontinue damping in a moderate way when the trees come into flower, and am a little particular at that period to see that they are syringed at least two or three times a week, even in the dullest weather, with water of the same temperature as the house, though if it happens to be 10° above or below the figure I am now not uneasy about the result. I use the syringe instead of the camel's-hair pencil because it is a more natural method, because it is safer and more effectual, as it neither injures the flowers nor misses them, and because it is about fifty times more expeditious—three very good reasons, according to my way of thinking, which want to be set aside on good grounds before the plan is condemned. Mr. Hinds' argument that the practice is not to be recommended because it is not "essential," and because it is apt to be abused in the hands of stupid people, is very bad logic. It is not "essential" to syringe the trees at all, for that part of it; it is not "essential" to prune fruit trees. It is not essential to give plants manure-water, nor to do many other things which it is very desirable should be done; but are we to discontinue such practices because some people blunder in putting them into execution? This would be applying teetotal principles to matters horticultural with a vengeance. In our own case there is no difficulty whatever, and, like my neighbours, I have to trust to people of ordinary intelligence to carry out my orders. The result is that we have not missed a good "set" in our early Peach-houses—where the syringing practice is most particularly adhered to—these ten years. And now I have just a little crow to pluck good-naturedly with my "friend," Mr. Miller. If, as he states, it is now twenty years since he used the syringe for setting his Peaches (and I doubt not it is since he says so), and found the plan a good one, I think he deserves riding on a rail for rendering me such lukewarm assistance when I called attention to the subject in the spring of 1871. After my remarks appeared on that occasion I find Mr. Miller (April 29, 1871) lamenting that the weather at Worksop Manor did not promise to be sunny enough "to dry the pollen into a dust to complete its work of fructification;" and a week or two later, responding to some question of mine, he says, referring to his Peach-houses and vineries:—"My other divisions of forcing, when in flower, are treated similar to my Peach-houses, with the exception of the difference in their respective temperatures. At all times during growth the atmosphere is kept moist and nourishing, with free ventilation, but I have not proved in practice going 'the whole hog' with the syringe, as Mr. Simpson seems to recommend." In the same article he does admit that "during some very hot days" he ventured to "dip several bunches (of Muscats) in a tub of water, when they were in full flower, without any bad results"—rather negative testimony, I must say, and cautions practice in an old "setter with the syringe" of twenty years' standing. I can testify to the excellence of the Peaches produced under Mr. Miller's care, and he can stand a rub. I therefore do not hesitate to poke him up for affecting to doubt a practice which he had proved was right long before he had began to experiment at all. *J. Simpson.*

Primrose Culture.—Mr. Wm. Earley's note on Primroses affords a capital illustration of the sort of treatment they like, and exhibits exactly the sort of conditions under which they best thrive. Warm sunny banks in spring are very well, and there is something sweetly sentimental in the Primrose when it opens its first blooms to greet the new year's sun, but sunny banks although very pleasant in the spring are liable to become rather too hot in summer, and under a broiling sun for several weeks hardy plants are likely to find it rather uncomfortable. It is in such situations as these that Primroses lose their foliage, and, scorched by the heat or eaten up by the thrips, the crowns are weakened and incapable of producing those fine heads of flowers that, as Mr. Earley has shown, will come from them in cool shady situations, where they are practically evergreen. My earliest and best flowers this spring came from a lot of seedling plants that had been kept in a box under a north wall all last summer and not allowed to get dry. The Primrose invariably blooms first from the crowns of the previous season, and the quantity and earliness depend entirely upon the growth and leafiness of the previous year. The second bloom equally depends upon the strength of the winter growth of the new crowns, and thus a robust growth is invariably accompanied by an extended blooming period. *A. D.*

Dendrobium Wardianum.—Last spring we obtained several imported pieces of the thick-stemmed Dendrobium Wardianum, and from which we have had an abundance of bloom more or less since the commencement of the year. A fortnight ago I had six plants in flower, with 200 blooms fully expanded at one time. One single growth bore seventeen blooms—the average was eleven—the majority of them measuring nearly 4 inches across, and in one instance over 4 inches. I have also two plants of the old form in flower; the difference in my case between the two is quite the reverse to that of your correspondent, "J. G. H." (p. 339), the blooms of the former being rather larger, the centre spots larger and darker in the midst of them, but all vary a little, while the tips of the sepals and petals of the latter are certainly of a much deeper colour, all being grown under the same conditions. When the imported pieces came to hand I placed some of them on blocks, and as soon as root-action commenced I put them in pans and baskets with good fibrous peat and broken crocks; the others were grown from the first in small baskets, with a little peat and moss, plenty of heat and moisture was given during the time they were growing, after which I removed them to the Cattleya-house for a few weeks, and then to a cooler house where the temperature at times fell to 45°, where they remained till the flower-buds had swollen to a considerable size, when they were again placed in the East India-house, where they are now growing freely: on the earliest plant the growth is nearly 2 feet long. Where a supply of choice cut flowers are required in early spring this Dendrobe should be grown largely. *Chas. J. White, The Knoll Gardens, Baildon, Leeds.*

Limestone as Fuel.—Since I must return to this subject, let me first say in reference to the quantity of coal usually employed to burn a ton of limestone, that it varies somewhat according to the quality of the lime and of the fuel. As "S. E." says, it is in some places in the proportion of one of coal to five of limestone, in others it is as one to four, in others as one to three. I took this last, and even supposed it as much as one to two, for the sake of giving every advantage to the advocates of the lime fuel by allowing them the maximum of coal to give heat, with the minimum of work to do in the expulsion of carbonic acid from the limestone. My paper at p. 139 was intended as a reply to the statements made by Mr. Moule, which, being definite and clear, admitted of a definite answer. But Mr. Cochrane, at p. 331, leads us again into the mazes of vagueness. He says I ought to have taken account of "two other actions quite different from the one summarised, in which there is a considerable evolution of heat." But of these two actions he indicates only one, "in the presence of aqueous vapour an interchange between the steam and carbonic anhydride of the limestone appears (*sic*) to be effected, and calcic hydride is formed, but the hydride produced is again quickly destroyed." Translated out of the new-fashioned nomenclature which Mr. Cochrane adopts, this means that in the kiln the lime is first slaked by the steam, and then the water of combination is driven off by the heat. Now if it were true that such a process takes place (though there is no evidence that it does), the result would merely be that whatever sensible heat was added to the mass by the slaking of the lime would be again absorbed in driving the water out of the lime. Then Mr. Cochrane says we must take into account that the amount of heat rendered latent in carbonic acid gas (carbonic anhydride), in passing from a solid to a gaseous state, does not exceed 2500° units in 2 lb. I do not know on whose authority this is stated. Perhaps Mr. Cochrane will kindly give a reference. But when he goes on to say that in solid carbonic acid gas "the particles are in a greater state of cohesion than they are when the gas is solidified in chemical combination with a base, therefore less heat will be required when the gas is expelled from the latter condition than would be required if the carbonic anhydride passed from its own solid condition to that of a gas," I must flatly join issue with him. It is a mere assertion, unsupported by a tittle of evidence, and contradicted by numberless facts in chemical science. Again, when he says that "when limestone is subjected to a certain amount of heat the atmospheric pressure is reduced to a minimum," I must be allowed to reply that this is an entirely new and unheard-of doctrine. Atmospheric pressure depends on the weight of the superincumbent column of air, and is not sensibly affected by the temperature of the body beneath. I am afraid, however, it would be neither interesting

nor profitable to your readers to discuss further a question in which chemical theories are so much involved, and in which the arguments would grow more and more abstruse. But perhaps I may suggest a method by which Mr. Moule and Mr. Cochrane may convince us. They assert that if a given quantity of coal is cunningly arranged with layers of limestone between, the heat at the top of the mass will be greater than it would be if the coal were burned in the same kiln, alone, or separated by layers of other material than limestone. Will they try this by the pyrometer, and let us know the result? The pyrometer is not, indeed, an exceedingly accurate instrument, but the amount of heat in dispute is so very large—they saying that on their arrangement it is 30 per cent. more, while I make it to be nearly 50 per cent. less, than would be yielded by the coal alone—that the rudest instrument would settle the controversy. Nay, if any gardener who has a lime apparatus will be good enough to substitute brickbats of fireclay (ordinary bricks would fuse) for the lime, and let us know the result on his boiler, it would go far to inform us. Only, as I pointed out, it will not do to compare a boiler placed over a kiln with one placed over a badly constructed fire-grate—we must have the same boiler, the same kiln, the same coals, the same stoking, and the same atmospheric temperature, with merely the difference of firebricks instead of limestone. If under these circumstances more heat is got out of the limestone than out of the brickbats we shall all be only too glad of the fact to be sorry for the explosion of unsound chemical theories. *W. Boyd Kinnear, Guernsey.*

The Potato Disease.—I should have preferred waiting for the publication of De Bary's paper in the *Journal of the Royal Agricultural Society* before replying to the Professor's views; but, as you have published Mr. Carruthers' *resumé* of De Bary's paper without referring to the remarks I made in answer at the last meeting of the Linnean Society, perhaps you will kindly allow me to at once reply to the abstract as published in your last number, p. 338. The first half of the paragraph describes, with little (or nothing) that is new, our old enemy the Potato fungus: this description calls for no comment. A new name is then suggested for this everlasting fungus; this certainly is new, and (especially as he was rechristened once before) this second renaming may be termed one way of covering our old enemy with confusion. In the sixth sentence on the third column we are informed that De Bary had found bodies "exactly corresponding to oospores" in the tubers, and in the following sentence that he "planted the oogonia of these," and "obtained minute plants, which conducted themselves exactly like zoospores." (!) Nothing could be more absurd than this. We are gravely told (in other words) that De Bary planted ovaries which produced plants, and the new plants conducted themselves like seeds. I will pass over the "moistened legs of dead flies and bodies of mites" to the happily-named Pythium vexans; this "new fungus" (line 25, col. 3) De Bary regards (line 28) as a "true Saprolegniea." It is instructive to find that De Bary classes the Saprolegnieæ with fungi, but Mr. Berkeley pointed this classification out long ago in his *Introduction to Cryptogamic Botany*, p. 10, 1857. In conclusion, there is nothing new in the idea of perennial mycelium and its probable occurrence in connection with the Potato disease. This subject has been discussed and published upon in this country already. *W. G. Smith.* [The *resumé* in question was not furnished us by Mr. Carruthers, but by an officer of the Society. Eds.]

Plant Names: how to Pronounce Them.—It is satisfactory to find Mr. Grindon at length acknowledging that "the art of consulting a lexicon" is not (as stated in his article of January 29) "one of the easiest things in the world," but that it requires a certain amount of "industry and observant powers;" and also to note that he agrees with me when he says, after I have, in reply to his challenge, furnished him with certain words, the pronunciation of which will not be found in any lexicon, that the "component members of these words are all there," but needs some "practice" to find them! On this point I have contended for nothing more. As regards the accentuation in Loudon, I certainly was not aware that "the custom with printers is to place the accentual mark over the last vowel of the syllable upon which the emphasis is to fall." It is not so placed in Babington's or Hooker's *Flora*. If such is the custom, I can only say that it is a bad one, and the sooner it is abolished the better, as its tendency is to mislead; and of this Mr. Grindon must be well aware, for in his letter of February 26 he says, "The names quoted by 'W. P.' should unquestionably be auric'omus, Polyp'orus, &c." It is very evident here that auri'comus and Poly'porus will not avail to show the desired pronunciation. Loudon does not give any indication whatever that "Fuchsia" should be pronounced as it commonly is, and, as to the word "Dahlia," I shall be quite content to rest under the imputation of any "grievous intellectual malady" Mr. Grindon pleases, if what I have written will only induce people to pronounce it (Dahlia) properly and in such a manner as will not lead others to suppose that, when using it, they mean "Dalea"—a distinct genus. The close of Mr. Grindon's communication appears to exhibit a shade or so of petulance; but, after all, this may be only an escape of some of his "playful utterances." *Quien sabe? Ebor.*

The Phylloxera.—I really must confess that, so far as actual observation is concerned, my experience of the Phylloxera was mysterious. Still there is little doubt but that it was at Elvaston. The most conclusive proof that I had of it was a *Moore's Rural New Yorker* newspaper, which was placed in my hands by Mr. Murray (Lord Harrington's agent), on the front page of which was the Phylloxera magnified. Mr. Murray said that was the insect that affected the Vines. I made inquiry of every one I could think of who was able to furnish me with information about the Phylloxera, but to most it was, as it had been to me, quite a new subject. I mentioned it to Mr. Barron, at the Elvaston Nurseries, and he at the time knew nothing of it either. It is singular how it should twice have caused the destruction of one house of young Vines in a range and then disappeared. Perhaps I was not accurate enough in stating my experience of it, still that was similar to my experience of mildew here, when three years ago it went through three vineries, and we were in dread, as we were told it would come again. A step in the right direction to get the Phylloxera stamped out would be for each purchaser of new Vines to make inquiries first as to the cleanness of the stock he was about to introduce. This would put all parties in a way to prevent it, and where in 1876 it does appear, as Mr. Thomson says, there should be a thorough clearing out. *R. Mackellar.*

Aucuba Berries.—I have never seen the Aucuba berry as it does this year. Many of my bushes are covered with coral-like beads, which are most effective at this dull season. To effect this it has been sufficient to plant males within a few yards of the old female plants; but we have, in many cases, grafted the male into the female with success. The produce is so ornamental that it is a pity that any old plant should be allowed to remain unmarried. *T. P.* [The grafting of the male upon the female plant of the Aucuba has lately been put forth as a new idea, but the practice is almost as old as the introduction of the male plant itself. Proof of this may be seen in Mr. Maurice Young's nursery at Milford, and doubtless at many other nurseries. A curious result of the practice is that the male plant in time overgrows the female to such an extent as to provide a striking illustration of the survival of the strongest in the struggle for existence. Eds.]

Fallacies in Fruit Culture.—Mr. S. Hibberd, in the paper which he read some time back at the Society of Arts, and which appeared in the *Gardeners' Chronicle* of the 12th ult., p. 203, condemns the rules laid down by various writers of high standing without reserve. He has neither spared practice nor practitioner, for both are spoken of in not very complimentary language. Fruit culture, according to Mr. Hibberd's ideas, has been sadly misunderstood, and now he (Mr. Hibberd) comes to enlighten us in the cultivation of fruit. He sets up as a standard a theory or practice of his own. Some of his arguments are very telling but yet simple, such as we sometimes employ when instructing our apprentices in different parts of their profession. Mr. Hibberd's system may be summarised thus:—Let all trees, whether standards, espaliers, &c., be allowed to grow as they like; that is to say, the saw and knife must not be applied if success be the object in view. Large trees in orchards are, according to Mr. Hibberd's ideas, to be allowed to grow on year after year. No matter how crowded they become, they are not to be judiciously pruned to let the light through them. No, we are told this would be opposing Nature. Nothing of the sort. Nature is very beautiful, and Art steps in to her assistance, and with satisfactory results. Nature is opposed every day in the human race, otherwise what guys we should be with our "finger and toe nails meeting in combat," &c. Thus it will be seen that, in many cases, by opposing Nature you improve her, and most of us prefer cultivated fruit to non-cultivated fruit. Supposing the knife, the saw, and finger and thumb were withheld for only two years from our Peach, Nectarine, and Plum trees, and all those strong rods that Mr. Hibberd adverted to were allowed to go "their way," what a neglected appearance our garden walls would present. But Mr. Hibberd thinks differently: therefore, I must be wrong, for he says:—"It is high time to restrict the liberty of those gardeners who go about 'hacking and slashing,' and who are evidently too 'thick-headed' to know that, when they have cut a waggon-load of branches off a tree, it is scarcely possible to put them on again." This language is only applicable to gardeners—if such they may be called—who are ignorant of their so-called profession. It is certainly strong language, to which I add my most emphatic protest; and it does not come with good grace from any one, especially from the editor of a horticultural paper. However, the lecturer was explicit in his remarks, for he told his hearers at the Society of Arts that an "Oak tree produces acorns, a Beech tree Beech-nuts, and an Apple tree Apples. *H. W. W., Salisbury.*

Garden Hybrids.—I wrote (see p. 147) that the Japanese Retinosporas were frequently produced from seeds of the oriental and occidental Biotas, or Thujas, to convey the idea that there was no trustworthy and characteristic distinctions to be found between the Retinosporas and some other so-called genera in the group of cupressineous Conifers; and the remark quoted by your correspondent, "G. S." (p. 147), was made partly on my own authority, having on two separate occasions selected plants of Retinospora filifera from seed-beds of Thuja (Biota) orientalis. The first time I saw this variation I was doubtful that seeds of the Retinospora had accidentally got mixed with those of the Thuja, but on the second occasion I gathered the Thuja seeds with my own hand, and was convinced that the Retinospora sprang from the Thuja seeds. I did not speak altogether on my own authority, however, for the same thing, or analogous cases, have been noted by M. Carrière, Mr. Thos. Meehan, and others. In a recent issue (see p. 235) Mr. Syme writes as follows under the head of R. filifera:—"Cones and seeds like those of R. pisifera, indeed in all its characteristics it seems to bear the same relationship to that species that Biota pendula or filiformis bears to B. orientalis, and my experience of it is that it is only an individual seedling variety of B. orientalis. When in California a few years ago I had the pleasure of collecting some cones from a fine specimen of it, and after sowing the seeds I was duly rewarded with about a dozen plants, which, from the interest I had in their development, I may say that I watched daily for three years, but only to find that they persistently assumed the character and habit of B. orientalis. I will not say the seeds were not fertilised with pollen of B. orientalis, because several large fruit-bearing specimens of it were growing in close proximity to the other." Here then we have evidence not only of R. filifera having originated from seeds of Thuja orientalis, but also of the converse of this—namely, its reversion—from another observer. Now it is well known to hybridists that if the offspring of two species, or distinct varieties, is itself fertilised by pollen from one of its parents, reversion to one or other of the original parents is facilitated, so that if Mr. Syme's idea that R. filifera was fertilised by pollen of the Biota be correct, that at once accounts far the seminal reversion he mentions. In a most interesting article on hybridity in the *Gardeners' Chronicle*, 1844, p. 459, is the following statement:—"The Red Cedar (Juniperus virginiana) has on several occasions been found to inoculate the American Arbor-vitæ, the issue from which is that curious whipcord-branched plant called in gardens Thuja filiformis. This singular shrub was produced for the first time in Messrs. Loddiges' nursery at Hackney, and has since been obtained in the same manner at Paris. These facts open a very wide field for inquiry, and are especially valuable as affording evidence that the limits of hybridising are far from narrow." Mr. G. Gordon (see *Pinetum*, pp. 55, 56) alludes to this plant under the name of Biota pendula, and says it is "found growing spontaneously on the Hakone mountains in Japan," and adds:—"It was also stated some years ago to be a hybrid raised by the Loddiges between a Red Cedar and a Chinese Arbor-vitæ, in their nursery at Hackney; and, singular as it may appear, the same was said by some person in France, only that in this case the hybrid was raised between the common Cypress and Chinese Arbor-vitæ. Dr. Siebold, however, having discovered the plant in a wild state in Japan, soon dispelled such statements." The fact of this plant being found to exist wild, however, does not prove that plants were not raised from Thuja seeds by both the parties named, and so far as my own experience goes I fully believe this not only to be possible but very probable indeed. Primula elatior and many other so-called species recently described by Professor Kerner, of Innsbruck, are wild in Europe, but no one for a moment doubts their hybrid origin. Again, in the *Pinetum*, at p. 57, we have described Biota Meldensis or the French hybrid Arbor-vitæ, and of this Mr. Gordon remarks: "This plant is said to be a hybrid between the Chinese Arbor-vitæ, and the common Red Cedar, and to have been raised at Meaux in France. It has, however, much the appearance when young of an attenuated variety of the Virginian or Red Cedar, and is a very doubtful hybrid, having not the least appearance of the Arbor-vitæ in it." In the line above this paragraph, however, Mr. Gordon says: "Cones said to be like those of the common Arbor-vitæ;" and on turning to

the *Revue Horticle* for 1874, p. 196, I find M. Carrière, who is one of the best of Continental authorities on Conifers, says: "This plant (Biota Meldensis) possesses all the characters of the Retinosporas until by hazard it fruits (which is but very rarely): this it does on flat branchlets resembling those of Biota, of which it has the cones." Here then is a plant which, to use Mr. Gordon's words, has "the appearance when young of an attenuated variety of the Virginian or Red Cedar," but instead of 2—4 seeded berry-like "dark purple fruits very small, ovate, smooth or slightly warted on the surface and covered with white glaucous powder," we have "light green or brownish six-scaled cones, each scale covering two seeds." Now if the branch of a Pear was shown to me bearing Apples, I should certainly assume that the result was due to hybridism, just as our very good friend, Professor H. G. Reichenbach, fils, assumes that an imported Orchid is a natural hybrid between two species when it unites the prominent characteristics of each in an evident and almost unmistakable manner. Retinospora Elwangeriana, or Thuja occidentalis ericoides, as it is often called in gardens, is another anomaly, some of the branchlets having linear or Juniper-like leaves, while the more mature portions have flat adpressed Thuja-like leaves. It is of American origin, and is said to have been raised from a seed of the American Arbor-vitæ. Perhaps Messrs. Elwanger & Barry can tell us the exact history of this variety. I must refer your correspondent to M. Carrière's very interesting article, "Des Retinosporas" (see *Rev. Hort.* 1874, p. 193), where this subject of seminal variation is treated at some length, with excellent illustrations. As I said in my note above cited, the art of grafting has taught us somewhat of the natural affinities of Conifers, but the intricate and confused state in which both genera and species are now plunged will never be mended until some of our patient cultivators shall have raised hybrids of undoubted parentage, which will furnish data for classifiers, many of whom in days gone by have given but little credit to the pollen-wafting labour of the wind or the work of the Chinese and Japanese gardeners, the latter especially being very skilful not only in raising new seminal forms, but also in perpetuating sports by grafting. *F. W. Burbidge.*

Reports of Societies.

Royal Horticultural: *March* 15.—The President, Lord Aberdare, in the chair. This was the best attended meeting of the Council that has been seen here for the last three or four years, and we are glad to note a revival of the old interest in these fortnightly meetings. The ordinary official business, which included the election of sixteen Fellows, being concluded, the Rev. M. J. Berkeley addressed the meeting, first calling attention to an Orange tree of the St. Michael's variety, carrying a good crop of fine fruit, and shown by Mr. Douglas, gr. to F. Whitbourn, Esq., Loxford Hall, Ilford. The plant in question had been grown against the back wall of a Cucumber-house, with a temperature of 70°. The flavour was much superior to that of imported fruit, but Mr. Douglas stated that it was even finer when they were ripened in a cooler and drier atmosphere. Mr. Berkeley next alluded to Dr. Hogg's recently published classification of Apples, which he considered bids fair to be extremely valuable. Dr. Hogg was well aware that it was not perfect, and had asked several members of the Fruit Committee to verify it next season. Dr. Hogg was not anxious to bring it forward just now, but he had done so on the pressing solicitation of himself (Mr. Berkeley). The scheme was, of course, open to criticism, and it was Dr. Hogg's anxious desire that it should be criticised. The Fruit Committee had unanimously resolved to ask the Council to award a Gold Medal to it. The pretty and interesting little plant, Claytonia caroliniana, shown by Mr. G. F. Wilson, was figured by Sweet some years ago; and having a tuberous root, and seeding freely, it should be much more grown. It was decided at a meeting of the Chiswick Board of Direction, held on the previous day, to again get together a collection of Crocuses; and it was hoped that growers of these charming flowers would contribute such as they could spare for that purpose. Colonel Trevor Clarke had kindly promised to give some corms of all the species and varieties that he grows.

SCIENTIFIC COMMITTEE.—A. Murray, Esq., in the chair.

Gall on Broom.—Mr. McLachlan showed a shoot of common Broom with elongated ribbed galls formed from leaf-buds, and produced by very minute species of Cecidomyiæ, the habits of which do not appear to have been noticed, and quite distinct from the large Cecidomyia sarothamni, which forms large galls from flower-buds of the same plant.

Classification of Apples.—A discussion ensued on this subject, on Dr. Masters making some criticism of the principles of the arrangement proposed by Dr. Hogg. The general feeling of the committee was strongly in favour of the scheme, which could be improved by future investigation and further experience.

Effects of Gas-tar on Plants.—Mr. Renny showed leaves of Pelargoniums and Fuchsias killed by having been placed in a house which had been painted over with tar. Hard-wooded plants, such as Azaleas, were not hurt, nor Chinese Primulas. Among the Pelargoniums the tricolor varieties suffered most. The Hon. and Rev. J. T. Boscawen adduced other instances of a similar character, and stated that he had found pig-dung injurious to some plants and not to others.

THE HYACINTH SHOW.—This was held in the Western Arcade, and proved, nowithstanding the unpropitious weather, a great improvement on the corresponding show of last year. Hyacinths were the most attractive feature; but though remarkably good considering the unfavourable season for ripening the bulbs which the growers experienced last year, the spikes were by no means so fine as were seen two and three years ago. The arcade was well filled with fresh and charming flowers, and the large conservatory is just now in beautiful order; but for all this the attendance was but poor. The best group of fifty single spikes of Hyacinths came from those well-known growers of this flower, Messrs. W. Cutbush & Son, of Highgate. Their best representations were of Lord Derby, single blue; La Grandesse, single white; Alba maxima, single white; Baron von Tuyll, single blue; Duchess of Richmond, single red; Blondin, single blue; and Ida, single yellow. Messrs. Barr & Sugden, Covent Garden, came in 2d. The class for eighteen was a better one as regards the quality of the spikes than the former one; and here Messrs. James Cutbush & Son again came in 1st with a fine lot, including particularly good examples of Lord Derby, Czar Peter, De Candolle, and Grand Lilas, all single blues; Macaulay and Von Schiller, single reds; Louis Philippe, double blue; Grandeur à Merveille, single white; Feruck Khan, single black; and Alba maxima, single white. Messrs. Osborn & Sons, Fulham, came in a good 2d with, amongst others, admirable specimens of Lothair, pale porcelain-blue; Vuurbaak, single red; Leviathan, single white; Koh-i-noor, single red; Grand Monarch, single blue; Fabiola, single red; Ida, single yellow; and La Grandesse, single white. Messrs. James Carter & Co., Crystal Palace Nursery, Forest Hill, were 3d.

Five competitors appeared in the amateurs' class, and Mr. James Douglas, gr. to F. Whitbourn, Esq., Loxford Hall, Ilford, well held his own by coming in 1st with a capital lot. Mr. J. Weir, gr. to Mrs. Hodgson, The Elms, Hampstead; and Mr. J. W. Moorman, gr. to the Misses Christy, Coombe Bank, Kingston-on-Thames, were the other prize-takers. Messrs. Barr & Sugden were the only exhibitors of new Hyacinths, and took a 2d prize. La Grande Duchesse and Florence Nightingale, double white, were the pick of the group. The competition with Tulips was rather limited—Messrs. W. Cutbush & Son and Messrs. Barr & Sugden, amongst nurserymen, and Mr. Douglas and Mr. Weir, amongst amateurs, being the only exhibitors, the prizes being awarded in the order named. Mr. Douglas' dozen were by far the best, and consisted of fine blooms of Vermillon Brillant, Proserpine, Pottebakker White, Chrysolora, Wouverman, and Keizer Kroon.

Cyclamens made a very effective display. The best thirty plants came from Mr. Goddard, gr. to H. Little, Esq., Cambridge Park, Twickenham, and a fine lot they were. Mr. H. B. Smith, Ealing Dean, was a fair 2d. Mr. Smith had a 1st prize for twelve, and also Mr. Goddard, who again staged some large and splendidly-flowered plants. Primulas were better shown than usual, but dingy in the case of large plants, as is always the case. Mr. James, gr. to W. F. Watson, Esq., Isleworth, had the best twelve amongst amateurs, and Mr. R. Dean, Ealing, amongst nurserymen. Messrs. Dobson & Son sent a nicely-flowered group of small plants, the white especially being good.

Mr. R. Dean, Ealing, was the only exhibitor of hardy Primroses, and took three 1st prizes. Mr. James, Isleworth, also took a 1st prize for Cinerarias, which were very good for the season.

In the miscellaneous class Messrs. James Veitch & Sons contributed a fine group of forced Roses in pots, very fresh and particularly attractive, as usual at this time of the year; also a nice group of Orchids, including the singular Restrepia antennifera, and good specimens of Dendrobium Farmeri, Trichopilia suavis, Dendrochilum glumaceum, with about seventy spikes, Dendrobium thyrsiflorum, and Dendrobium aggregatum, and the very distinct and rarely seen Sikkim Vanda, crisiata, with four flowers. The Messrs. Veitch also showed a large collection of admirably grown Hyacinths and Tulips, and a small group of Amaryllis, amongst the former being La Grandesse, Lord Byron, Prince of Wales, L'Innocence, Etna, Von Schiller, Grand Lilas, Charles Dickens, Lord Palmerston, Grand Duc de Luxembourg, and Princess Beatrice, all remarkable for their fine spikes of bloom. Yellow Tournesol, Proserpine, Fabiola, Queen of the Violets, Yellow and White Pottebakker, Chrysolora, and Vermillon Brillant were the best of the Tulips. Messrs. Osborn & Sons, Fulham, showed a pretty group of ornamental foliaged plants, principally handsome young Palms. Another group of mixed foliage and flowering plants came from Mr. Aldous, Gloucester Road, South Kensington; and Mr. B. S. Williams had a fine group, which included some good examples of his fine strain of Primulas, various Orchids, Amaryllis, Palms, &c. From Messrs. William Rollisson & Sons came a showy group of Azalea mollis, of various colours; a large batch of the very sweet Boronia megastigma, &c. Messrs. Osborn & Sons, and Messrs. James Carter & Co. each contributed nice collections of Hyacinths; and Mr. R. Parker, Tooting, an interesting group of spring flowers. Messrs. William Paul & Son exhibited cut blooms of over fifty varieties of Camellias, which made a most interesting and attractive display.

Mr. Ford, gr. to Egerton Hubbard, Esq., Leonardslee, Horsham, contributed seventy-two dishes of Apples and nine dishes of Pears, a most meritorious collection, which included many varieties long past their season, and all in excellent condition. Messrs. W. Paul & Son also contributed forty-six dishes of Apples in a fine state of preservation. A silver medal was in each case most deservedly awarded.

It scarcely comes within our province, but we cannot help stating that for the present, at all events, the Society, in addition to its other virtues, seems to have taken up the cause of Good Templarism. It has no licence for refreshments, consequently hungry and thirsty exhibitors—a large class—must now go elsewhere for the needful fuel for the inner man. Now is the time to test the merits of Erythroxylon Coca.

FLORAL COMMITTEE.—R. B. Postans, Esq., in the chair. Messrs. James Veitch & Co. again sent some of their new seedling Amaryllis, and received First-class Certificates for Thalia and Clio. The former is the largest-flowered variety we have seen. It measures 8½ inches across, and 2¼ inches across the top petals; the colour being very deep maroon-crimson. Clio is smaller and brighter in colour, a rich crimson-scarlet. The same firm also received First-class Certificates for Abutilon Darwinii tessellata, a dwarf mottled-leaved and free-flowering variety. For Phalænopsis Veitchii, supposed to be a hybrid between P. Schilleriana and P. rosea, the flowers of which are very distinct, larger than those of P. rosea, and of a soft rosy shaded colour, while the leaves slightly resemble those of P. Schilleriana. For Odontoglossum Chestertoni, a distinct form, with creamy white flowers bearing large brown spots; for Hyacinths Sultan, very dark single pucy violet, very distinct; The Shah, single, very dark pucy lilac; and Golden Lion, single yellow, with very fine smooth bells for a yellow. Messrs. Thibaut & Keteleer, Sceaux, France, received a First-class Certificate for Xanthoceras sorbifolia, a fine new shrub, with white crumpled flowers, and foliage like the Ash; it is free-flowering, and will be invaluable for forcing. A vote of thanks was awarded to Sir Trevor Lawrence, Burford Lodge, Dorking, for Dendrobium Heyneanum, a very pretty white species. Messrs. James Carter & Co. received a vote of thanks for a basket of Primrose Lady Adelaide Taylour, a violet rose-coloured flower of the P. altaica type, sent out a few years ago by Mr. Cannell. Mr. Denning, gr. to Lord Londesborough, showed a well-flowered plant of the singularly small Ornithidium coccineum; and Mr. R. Dean, Ealing, contributed several seedling hardy Primroses, one of which, named Brilliant, was remarkable for the size of its rich crimson-maroon flowers. Henry Little, Esq., Twickenham, received a First-class Certificate for Cyclamen persicum Purple Gem, a very dark rosy purple flower. Mr. Ollerhead, gr. to Sir Henry Peek, Wimbledon House, showed a fine variety of Phalænopsis Schilleriana, imported last May; a plant of Dendrobium lituiflorum, with forty-three flowers on two spikes—very fine; and Dendrobium Wardianum, with eighteen flowers on two bulbs; both imported last April. Mr. Ollerhead may think himself fortunate to get such good varieties amongst imported plants. G. F. Wilson, Esq., showed the pretty dwarf lilac flowered Claytonia caroliniana, and received a Botanical Commendation.

FRUIT COMMITTEE.—Henry Webb, Esq., in the chair. Messrs. Hooper & Co., Covent Garden, showed some new tubers of the Alpha Potato. The sets were put in pots on January 13, were grown on in a greenhouse, and lifted on March 7—a very good performance. Mr. Douglas exhibited an Orange tree, laden with ripe fruit. It was the St. Michael's variety, and had been grown in a Cucumber-house. The flavour was most excellent.

Manchester Botanical and Horticultural: *March* 14.—The first of the spring shows for the current year came off on Tuesday last, the plants being displayed, as usual, in the large room of the Town Hall. Nothing but approval could be given to the general complexion of the show. But in comparison with most of the former Town Hall

shows, in respect of rare or striking plants, the present one was rather deficient. With the exception of one or two of the Orchids, a slight novelty in the way of decorative leaves, and a pot of insectivorous plants, there was nothing, perhaps, that was unfamiliar to the regular visitors to these shows, *plus* the new visitors who have good greenhouses of their own. The charm at Manchester the other day consisted in the grand beauty of its mostly old-fashioned Orchids, its superb Hyacinths, Primulas, and Cyclamens, and, after these, in the cheerful plenteousness of its Dicentras, Cinerarias, and other universalists of the early spring. A capital foil was supplied in the copiousness of the dwarf Palms, both pinnate and fan-leaved; and the interminghng being well-managed one could not but feel that men of taste had been at work. The most noticeable among the Orchids were shown by Mr. William Leech, of Fallowfield. Among them, perhaps, the most unusual was the odd little Dendrobium senile, the stem and leaves of which are covered with white hair, while the most beautiful was certainly his Dendrobium Wardianum, shown in several fine varieties; A. Trichopilia suavis, full of bloom; a Dendrochilum glumaceum, and two or three plants of Vanda suavis were also conspicuous. Mr. Joseph Broome had a splendid Masdevallia ignea, about twenty-five blooms; Dendrobium crassinode, and several others. From London there were sent by Mr. B. S. Williams capital examples of his last new strains of Cyclamen persicum and Chinese Primula, also the very pretty Aralia elegantissima, a few good Orchids, some choice Palms, and similar subjects. Grapes and Mushrooms were done well, but to a very slight extent. From Her Majesty's garden there were sent twenty or twenty-five dishes of Apples and Pears. What more there was considered meritorious may be gathered from the awards made by the committee, viz.:—

First-class Certificates.—Seedling Azalea, Messrs. W. & G. Caldwell & Sons, Knutsford; Aralia elegantissima, Mr. B. S. Williams, Upper Holloway; Cyclamen persicum giganteum, Mr. B. S. Williams; Bertolonia Van Houttei, Mr. B. S. Williams.

First-class Cultural Certificates.—Collection of Apples and Pears, Her Majesty the Queen; Sophrontis grandiflora, Captain Shaw, Buxton; Cymbidium eburneum, Captain Shaw, Buxton; Dionæa muscipula, Mr. Joseph Broome; Dendrobium Wardianum, Mr. Wm. Leech. Collection of Hyacinths, Mr. S. Barlow; Chinese Primulas, Mr. S. Cooper.

First-class Commendations.—Collections of Miscellaneous Plants, Messrs. G. & W. Yates. Miscellaneous Plants, Mr. S. Cooper. Miscellaneous Orchids, Mr. Wm. Leech and Mr. Joseph Broome. Bouquets, Mr. Thos. Studd and Messrs. G. & W. Yates. Mushrooms, Mr. John Rylands.

The Villa Garden.

Hardy Plants.—Amid all the prevailing gloom and wet, alternated, it is true, with occasional bursts of sunshine—but how few and far between!—the outdoor garden is a place almost to be avoided in consequence of the unpleasant weather. Scarcely a day passes without a fall of rain, accompanied with storms of wind, and any pretty hardy flowers that put in appearance in the open border are soon destroyed, and with the lack of sunshine they are but slowly produced. Hence the beauty of many pretty hardy early flowering plants blooming from the middle of February onwards is almost entirely lost to sight when rough and stormy weather accompanies the advent of spring; and thus is pressed home the importance of cultivating a few of these plants under glass, so as to have the flowers in their season in all the fulness of their beauty, though storms may rage without and winds destroy.

The Hardy Plant House.—A neighbour of ours, who occupies a pleasant Villa residence, and who is a great lover of hardy plants, has built for himself a house specially for their culture during winter and early spring; and the success that has crowned his efforts, and the great pleasure he derives from the culture of his plants in this way, are excellent arguments in favour of the adoption of this plan by Villa gardeners. It is simply a cold greenhouse with a span-roof, and built low, thus ensuring a certain amount of coolness. The dimensions of the house are 12 feet by 10 feet, and the floor is about 2 feet below the level of the garden in which it stands. It stands north and south, the roof sloping towards the east and west. On either side and at the end of the house is a bed or pit, the wall of which is about 3 feet in depth, and it is filled up nearly to the top with rough cinder ashes, and on the top of this is a thick layer of cocoa-nut fibre, in which the pots containing the plants are plunged. Plenty of side ventilation can be given by opening some small lights between the bed and the roof, and in the summer the lights on the roof are altogether removed. The cost of construction was moderate, and the house is well built, and likely to last for many years to come.

On looking over the contents of this house one could not help being struck with the fact that though its space was small, it yet admitted of a varied collection of plants, comprising subjects that presented a constant source of interest the year through. There were Palms of a half-hardy character, including Chamærops Fortunei, C. humilis, and Latania borbonica. Then there were Arum crinitum and A. maculatum, Aspidistra lurida variegata, three or four Funkias, just thrusting up their pretty coloured leaves; Polemonium cœruleum variegatum, making a nicely variegated growth; the variegated Crown Imperial, the margins of the leaves clear pale gold; the variegated form of Lilium candidum, Ligularia Kæmpferi variegata, Aubrietia deltoidea variegata, nicely flowered; Bambusa Fortunei variegata, a variegated Symphytum, Hemerocallis Kwanso variegata, Centaureas, variegated Thyme, Mesembryanthemum lævigum uncatum, Chamæpeuce diacantha, Agave americana, Iris fœtidissima variegata, and others, both green and variegated.

With these were various flowering plants, such as Hepaticas, Snowdrops, Triteleia uniflora, several Narcissi, among them the pretty N. bulbocodium, and two or three other of the dwarf early-flowering forms; Tulips in species, such as T. oculus-solis, cornuta, and Gesnerana, with some of the early-flowering single varieties; Pulmonaria officinalis, in full flower; Polyanthus, The Bride, a fine white variety; some single Primroses, among them the rich crimson Auriculæflora, with others fast coming on into flower; and here and there a nice tuft of a bedding Viola, or some of the finer varieties of the double Daisies, just unfolding their flowers. Variegated-leaved plants play an important part, and that for the reason that many of them supply cheerful tints in their leaves all the year round. We have specified only the plants that are in flower now, or will be in bloom during the next two months; beyond that time, and during the summer, the hardy garden in the open air is full of floral life and leaf pictures, and there is little need for the house, and then it is the lights are removed. As soon, however, as summer darkens to autumn the lights are placed on the house, the pots are put in position, and then it is that such plants as Schizostylis coccinea, Vallota purpurea, Funkia grandiflora, Eucomis punctata, autumn Crocuses, and other things furnish their flowers, and carry on the succession of display till Bulbocodium, Scilla, Hepatica, Christmas Rose, Violets, and others take up the floral service in their own good time.

What forcibly strikes one is the number of plants that can be arranged in such a house as this, a good number being in 48 and large 60 pots, and some of the larger specimens in 32 and even 24 pots. All the pots are plunged in cocoa-nut fibre, and where tastefully arranged the effect is very pleasing. The beds are fringed along the front by means of a line of pans 12 inches in diameter filled with the choicer forms of Saxifraga, Sedum, and Sempervivums.

There is one advantage about the cultivation of many of these plants, that they do not require constant shifting as more rapid-growing plants do; there is, therefore, no necessity for constantly disarranging the plants and reforming them, though a devotee on this method of gardening will always find some little matter requiring his attention the whole year through. Should there be at any time an entire absence of flower, as for instance in the depth of winter, there is yet so much variety of character in leaf and leaf-marking that it supplies the place of flowers for the time being, though with a judicious selection of plants there is something in flower all the year round.

Such is this house and its occupants. It might be too elaborate for many who would desire to imitate as far as possible the aspects it presents. To such we would say that much might be done with an ordinary frame if, occupying a position well sheltered on the north side, it was yet open to sunny influences from the south. Just such a position does this house we have sketched occupy. A dry bottom is of great importance, therefore there should be a good foundation of stones and brick rubbish, and on this the frame should rest; and if it were built up round the sides of the frame it would be an advantage. Over the brick rubbish might be laid some mortar siftings, on which the pots could stand, and they could be plunged in Cocoa-nut fibre during the depth of winter in times of severe frost. It would be an easy matter to supply some covering or protection for the tenderer plants. The blooming season of many favourite hardy plants can be accelerated in this way, and their flowers preserved unharmed by frost and rain.

Outdoor gardens must of necessity be almost entirely desolate and devoid of floral life during a good portion of the winter. The hardy plant house and the hardy frame maintain the interest in the garden during the time of suspense in plant life; and for this reason, among many others, the practice is alone deserving of wide application.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON
For the Week ending Wednesday, March 15, 1876.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Mar.	In.	In.	°	°	°	°	°	°			In.
9	28.61	—1.32	46.1	33.7	12.4	38.4	— 21.2	28.3	67	S.W.	0.02
10	28.57	—1.35	45.9	32.3	13.6	39.2	— 1.4	35.1	86	S.S.W.; S.W.	0.25
11	28.97	—0.95	51.4	35.2	16.2	42.5	+ 1.8	35.2	76	WNW; N.W.	0.00
12	28.70	—1.21	41.0	31.9	9.1	34.5	— 6.3	33.3	95	N.E.; N.; N.W.; W.	0.74
13	29.44	—0.46	47.8	28.0	19.8	36.2	— 4.8	29.8	78	WNW	0.04
14	29.37	—0.52	55.1	37.9	17.2	46.1	+ 4.9	38.2	75	WSW; W.	0.02
15	29.15	—0.72	51.8	37.4	14.4	43.1	+ 1.7	35.6	74	WNW; W.	0.12
Mean	28.97	—0.93	48.4	33.8	14.6	40.0	— 0.9	33.6	79	W.	sum 1.19

Mar. 9.—A fine day. Cloudy. Hail fell at 3.45 P.M., and rain fell at 8 P.M.
— 10.—A partially fine day. Cloudy. Frequent heavy rain fell till noon.
— 11.—A very fine day, cloudy and windy.
— *12.—Dull, heavy clouds, with rain, hail, and snow. A very strong gale. (Depth of snow at 3 P.M., 1 inch.) A whirlwind at 2 P.M. Fine and cold at night.
— 13.—Dull, foggy, and snow fell till 10 A.M. Fine till 5 P.M. Occasional showers of hail after.
— 14.—A fine day. Cloudy. Gale of wind at times. Slight rain fell in early morning.
— 15.—Dull, with heavy rain, and strong gale till 10.30 A.M. Very fine and bright after.

—— During the week ending Saturday, March 11, in the vicinity of London the reading of the barometer at the level of the sea decreased from 29.82 inches at the beginning of the week to 29.61 inches by the morning of the 6th, increased to 29.90 inches by the evening of the 7th, decreased to 28.70 inches by the evening of the 9th, and increased to 29.27 inches by the end of the week. The mean reading for the week was 29.34 inches, being 0.38 inch lower than that of the preceding week, and 0.78 inch below the average.

The highest temperatures of the air observed by day ranged from 56° on the 6th to 46° on the 9th and 10th; the mean for the week was 50½°. The lowest temperatures of the air observed by night varied from 32¼° on the 10th to 42° on the 6th; the mean value for the week was 36°. The mean daily range of temperature in the week was 14½°, the greatest range in the day being 17° on the 8th, and the least 12½° on the 9th and 10th. The mean daily temperatures of the air and the departures from their respective averages were as follows:—5th, 43°.2, +2°.7; 6th, 47°.8, +7°.3; 7th, 41°.4, +0°.9; 8th, 43°.2, +2°.7; 9th, 38°.4, —2°.1; 10th, 39°.2, —1°.4; 11th, 42°.5, +1°.8. The mean temperature of the air for the week was 42°.2, being 1°.7 above the average of observations extending over a period of sixty years.

The highest reading of a thermometer with blackened bulb in vacuo, placed in sun's rays, was 91¼°, on the 11th; on the 5th the reading did not rise above 60°; the mean for the week was 89¼°. The lowest reading of a thermometer on grass, with its bulb

* Barometer reading at 9 A.M. = 28.393, noon = 28.265, 2 P.M. = 28.276, 2.20 P.M. = 28.365, 3 P.M. = 28.594, 4.30 P.M. = 28.795, 5 P.M. = 28.880, 6 P.M. = 28.930, 7 P.M. = 28.971, 10 P.M. = 29.065, 10.30 P.M. = 29.080, 11 P.M. = 29.121, 11.30 P.M. = 29.140, midnight = 29.179. It will be noticed that in less than three quarters of an hour the readings increased by a quarter of an inch, and that between the lowest reading at 2 and that at half-past 4 the reading had increased by more than half an inch, and the increase by midnight was nine-tenths of an inch. It is also worthy of remark that for six weeks the reading of the barometer, with the exception of one day (February 24), has been constantly below its average reading.

exposed to the sky, was 30°, on the 10th; the mean for the seven low readings was 31¾°.

The direction of the wind was mostly from the W.S.W., and its strength strong.

The weather during the week was generally stormy; gales of wind on the 6th, 7th, and 9th; snow and sleet fell occasionally on the 9th.

Rain fell on four days during the week; the amount collected was 0.51 inch.

In England the highest temperatures of the air observed by day were 56° at about London, 55° at Plymouth, 54° at Truro, Brighton and Cambridge; at Newcastle-on-Tyne 47° was the highest reading; the mean value from all stations was 52½°. The lowest temperature of the air was 27¾° at Eccles, at Truro the lowest temperature in the week was 36°; the mean from all stations was 31½°. The mean range of temperature in the week was the greatest at Birmingham and Eccles, both 24¾°, and the least at Newcastle-on-Tyne, 17°; the mean range from all stations was 21°. The mean of of the seven high day temperatures was the highest at Plymouth, 51½°, and the lowest at Newcastle-on-Tyne, 44½°; the general mean from all stations was 48°. The mean of the seven low night temperatures was the smallest at Newcastle-on-Tyne, 31¾°, and the largest at Truro, 41½°; the mean value from all stations was 36°. The mean daily range of temperature in the week was the greatest at about London, 14½°, and the least at Truro, 9°; the mean daily range from all stations was 11¾°. The mean temperature of the air (from all stations) for the week was 41°, being ¾° lower than the value for the corresponding week in 1875. The highest occurred at Truro, 45¼°, and the lowest at Newcastle-on-Tyne, 37¼°.

Rain fell on every day in the week at the southern and midland stations, but on four days only at northern stations. The amounts measured at the several stations varied from 2 inches at Bristol to 1½ inch at Sheffield and Eccles; at Cambridge and Norwich a quarter of an inch only was measured. The average fall over the country was nine-tenths of an inch.

Snow showers were pretty general over the country on the 9th. Lightning was seen at Liverpool on the 6th, and at Wolverhampton on the 7th and 8th. The weather during the week was generally bad, but occasionally fine.

In Scotland the highest temperatures of the air observed by day ranged from 51° at Aberdeen to 47½° at Glasgow; the mean value for all stations was 49¼°. The lowest temperatures of the air observed by night varied from 30° at Glasgow and Paisley to 32¾° at Aberdeen; the mean from all stations was 31¼°. The mean range of temperature in the week from all stations was 18°. The mean temperature of the air for the week was 39¾°, being 1¾° lower than the value for the corresponding week in 1875. The highest was 41¼°, at Edinburgh, and the lowest 38¾°, at Paisley.

Rain fell to the amount of 2¼ inches (nearly) at Glasgow and Greenock; at Dundee and Leith 1¼ inch was recorded; the average fall over the country was 1¾ inch nearly.

At Dublin the highest temperature was 53°, the lowest 28¾°, the range 24¼°, the mean 40½°, and the fall of rain 0.89 inch.

JAMES GLAISHER.

Obituary.

ON Tuesday, the 7th inst., died at his residence, The Oaks, Sale, Manchester, Mr. MICHAEL POTTER, solicitor, a well-known Tulip cultivator. From his boyhood he had grown this gorgeous flower, and indeed his father was a cultivator before him, and was the raiser of Potter's Albion and other fine varieties. For twenty years past the late Dr. Hardy, of Warrington, a well-known Tulip cultivator, who died about three months ago, and Mr. Michael Potter used to dine every year with Mr. Samuel Barlow, at his residence, Stoke Hill House, Chadderton, Manchester, at his annual Tulip dinner during the height of his Tulip bloom. The ranks of the Tulip cultivators are becoming much thinned, and at the present time there appears to be but small prospect of others coming forward to succeed them.

—— We regret to have to record the death of Mr. JOHN WATSON KINMONT, of Canterbury. Mr. Kinmont was for some years in the service of the Archbishop of Canterbury as gardener, subsequently was in business at Croydon and latterly at Canterbury, where he succeeded to the nursery of the late Mr. Masters. Mr. Kinmont was a thoroughly sound, practical gardener, and in private life was beloved and respected for his high principle and amiable character. Mr. Kinmont was in association with Mr. Kidd, by whom the business will in future be carried on.

Enquiries.

He that questioneth much shall learn much.—BACON.

105. ONONIS FRUTICOSA.—Where can this plant be obtained? *X. Y. Z.*

Answers to Correspondents.

*** We must beg the indulgence of numerous correspondents, whose communications are necessarily delayed by the great demand on our space.

BOTANICAL DICTIONARY: *Dr. F.* Paxton's is the one most generally used now. It is published by Messrs. Bradbury, Agnew & Co.

CUCUMBERS: *Subscriber.* The plants should not be kept constantly shaded. The syringing may be dispensed with if the atmosphere is kept sufficiently moist by other means.

CUPRESSUS: *Aberdeenshire.* The side branches may be shortened, so as to prevent the trees from spreading; it would be best done in the summer months.

INSECTS: *D. F. Cooper.* The eggs of Orgyia antiqua, the Vapourer moth.—A correspondent, whose letter we have mislaid, sent a beetle, which is Otiorhynchus notatus.—*A., Clapham.* The larva is that of Otiorhynchus sulcatus. The remedy has not yet been found. Taking up the plants and putting them in fresh earth where practicable diminishes the mischief. We have an idea on the subject which we should like to try, if any of our Correspondents who suffer from this pest would send us a plant in a pot swarming with them. *A.M.*

NAMES OF PLANTS: *X. Y. X.* Smashed in transit through the post. Plants of such a succulent nature should be sent in a small box.—*N. M.* 2, Athyrium Filix-fœmina Fieldiæ.—*S. S.* 1 and 2, Sempervivum Paivæ; 3, S. Haworthi, sometimes called repens; 4, S. glutinosum; 5, S. velutinum; 6, S. cuneatum; 7, S. urbicum.—*Florence.* Hypnum undulatum.—*T. Potter.* 1, Hypnum triquetrum; 2, H. alopecurum; 3, Mnium undulatum; 4, Thuyidium tamariscinum; 5, Hypnum molluscum; 6, Dicranum scoparium.—*G. E. L.* 1, Croton longifolius; 2, Cyperus alternifolius; 3, Libonia floribunda; 4, Aster argophyllus, the Musk tree; 5, Euonymus japonica aureo-pictus; 6, Retinospora plumosa.—*A Constant Subscriber.* Acacia cultriformis, leaves simple; A. dealbata, leaves pinnate. Both come from Australia, and you will find them do well in an ordinary greenhouse.—*H. K.* Arctostaphylos Uva-ursi.—*Stapleton.* Gnidia carinata.—*Subscriber, Clapham.* 6, Epidendrum fragrans var.; 7, next week; 8, Oncidium sphacelatum minus.—*Sigma.* We cannot pretend to name such a withered scrap; Conifers are troublesome enough even when the materials are ample.

PEA, RINGWOOD MARROW: *Pengite.* No; round, or nearly so.

ROSE-BUDS ROTTING: *A. J. W.* Too much damp in some way or other; either the atmosphere is too constantly damp, or the buds have been caught by sun after syringing.

ERRATA.—At p. 330, in col. 2, line thirty-one from the bottom, for "two," read "ten." In the fifth line lower down, for "summary," read "summer."—By an inadvertence, the flora of Rodriguez was stated, at p. 338, to be temperate rather than tropical in its character. Of course the exact reverse is the fact.

COMMUNICATIONS RECEIVED.—J. H. (thanks).—J. Caie.—R. B.—H. G. R.—J. S.—G. N. H.—T. B.—R. R.—J. O.—T. C.—K. K.—W. P.—Wanderer.—M.—P. G.—W. H.

DIED.—On the 12th inst., at Middle Abbey Street, Dublin, ALICE MAUDE, the beloved daughter of THOMAS and ALICE MOORE, aged one year and four months.

Markets.

COVENT GARDEN, March 16.

A dull trade has affected the prices of almost all sorts of forced vegetables, more especially of Cucumbers, which, together with a large supply, have experienced a fall of nearly one half the quotations of last week. A good supply of forced Strawberries is now in the market, and they will come regularly. Good Easter Beurré Pears from France are still to be had, but very few specimens of English-grown fruit can be seen. *Jas. Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1 0	2 6	Oranges, per 100	6 0	12 0
Cobs and Filbts., lb.	0 6	0 9	Pears, per doz.	3 0	10 0
Grapes, per lb.	3 0	12 0	Pine-apples, p. lb.	1 6	4 0
Lemons, per 100	6 0	10 0	Strawberries, per oz.	1 6	2 6
Melons, each	0 0	0 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz.	4 0	..	Leeks, per bunch	0 2	0 4
— Jerusalem, p. lb.	0 3	..	Lettuces, per score	2 0	..
Asparagus (English), per bundle	7 0	12 0	Mint, green, bunch	0 6	1 0
— French	18 0	25 0	Mushrooms, per pott.	1 0	2 0
Beans, French, p. 100	1 6	3 0	Onions, young, bun.	0 4	0 6
Beet, per doz.	1 0	2 0	Parsley, per bunch	0 4	..
Brussels Sprouts, lb.	0 4	..	Peas, green, per lb.	1 6	..
Cabbages, per doz.	1 0	2 0	Potatos (new), baskt.	1 0	..
Carrots, per bunch	0 6	..	— new Jersey, p. lb.	10	2 0
Cauliflowers, p. doz.	2 0	4 0	— Sweet, per lb.	0 6	..
Celery, per bundle	1 6	2 0	Radishes, per bunch.	0 1	0 3
Cucumbers, each	0 9	2 0	— Spanish, doz.	1 0	..
Endive, per doz.	1 0	2 0	— French	0 6	..
— Batavian, p. doz.	2 0	3 0	Rhubarb, per bundle	0 6	1 0
Herbs, per bunch	0 2	0 4	Salsafy, per bundle	0 9	..
Horse Radish, p. bun.	3 0	5 0	Seakale, per punnet	1 0	2 0
			Shallots, per lb.	0 3	..
			Turnips, per bundle	0 4	..

Potatos—Rocks, 105s. to 110s.; Regents, 120s. to 170s.

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	4 0	12 0	Mignonette, 12 bun.	6 0	9 0
Azaleas, 12 sprays	0 6	2 0	Narcissus, per dozen	1 0	3 0
Camellias	1 6	9 0	Pelargoniums, 12 spr.	1 0	3 0
Carnations, 12 blooms	2 0	4 0	— Zonal do.	0 9	2 0
Cineraria, per bunch	1 0	2 0	Primula, dbl., p. bun.	1 0	1 6
Cyclamen, 12 blooms	0 3	0 6	Rhododend., 12 hds.	3 0	6 0
Epiphyllum, p. doz.	1 0	3 0	Roman Hyacinths, 12 sprays	1 0	3 0
Eucharis, per doz.	6 0	12 0	Roses, indoor, p. doz.	1 6	10 0
Euphorbia, 12 spr.	4 0	9 0	Spiræa, 12 sprays	1 0	4 0
Gardenia, per doz.	6 0	12 0	Stephanotis, 12 sprays	9 0	18 0
Heliotropes, 12 spr.	0 6	1 0	Violets, 12 bunches	0 6	2 0
Lily of Valley, 12 spr.	1 0	4 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per doz.	24 0	60 0	Fuchsia, per doz.	9 0	18 0
Begonias, per doz.	6 0	12 0	Genista, do.	9 0	24 0
Bouvardias, do.	12 0	18 0	Heaths, in var., doz.	12 0	30 0
Cineraria, per doz.	9 0	18 0	Hyacinths, per doz.	9 0	18 0
Crocus, do.	4 0	9 0	Lily of Valley, doz.	18 0	36 0
Cyclamen, do.	9 0	24 0	Mignonette, do.	6 0	9 0
Cyperus, do.	6 0	12 0	Myrtles, do.	3 0	9 0
Deutzia, do.	9 0	18 0	Pelargoniums, scarlet, per doz.	6 0	9 0
Dielytra, do.	12 0	24 0	Primula sinensis, do.	6 0	12 0
Dracæna terminalis	30 0	60 0	Roses, Fairy, do.	9 0	15 0
— viridis, per doz.	18 0	24 0	— various, do.	18 0	30 0
Epacris, do.	12 0	18 0	Solanums, do.	6 0	24 0
Euphorbia jacquinifolia, per doz.	9 0	18 0	Tulips, do.	8 0	12 0
Ficus elastica	2 6	15 0	Veronica, do.	4 0	12 0

SEEDS.

LONDON: *March* 15.—Owing to delay in farming operations caused by the recent weather, there is naturally a diminished demand for agricultural seeds; but, notwithstanding the temporary lull, the trade is characterised by extreme firmness, which is fully justified by the acknowledged scarcity of all the leading descriptions dealt in on Mark Lane. The fact that the high range of values (which now for so many weeks has been so steadily supported, and, indeed, in most instances advanced) has failed to attract to this country any considerable supply, inspires holders with the belief that, as the sowing season comes on, currencies will exhibit a still further increase. To-day's advices from the United States describe the stock of American Red remaining as only about sufficient for their own domestic use. Alsike and white Clover keep very dear. Telegrams from Hamburgh quote the latter article as £3 to £4 per ton higher. Fine Trefoils, on account of their most unusual scarcity, realise more money than has been known for many years. For French Italian quotations keep strong at their recent remarkable rise. Perennial Rye-grasses have not as yet, to any notable extent, followed suit in the upward movement. In consequence of the wetness of the land there is less call for spring Vetches; a few days' brisk demand would clear off the small quantity in London. For Rape seed there is a good inquiry; and for lack of supply an advance is commanded of several shillings per quarter. In Mustard seed a similar steady improvement in value is also seen. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, E.C.*

CORN.

Trade at Mark Lane on Monday was firm, though sales of English Wheat were not easy to effect unless at some reduction. In foreign Wheat there was a want of fine dry produce, for which alone full rates were given. Barley was dull, with little or no change in the prices from Monday se'nnight. Malt was quiet, and nominally the same. Oats experienced a slow demand, and prices were reported steady. Beans and Peas changed hands to a small extent on former terms. Flour was held for extreme quotations, though the inquiry was slight.—Trade on Wednesday was quiet, though moderately firm in tone. Only the dry samples of Wheat, either English or foreign, supported the full rates of Monday. Barley and malt were quoted as before, though offers were not rejected; and in the value of Oats, Beans, Peas, and flour there was no material change.—Average prices of corn for the week ending March 11:—Wheat, 42s. 11d.; Barley, 32s. 6d.; Oats, 24s. 1d. For the corresponding week last year:—Wheat, 41s. 4d.; Barley, 42s. 5d.; Oats, 29s. 8d.

CATTLE.

At Copenhagen Fields on Monday trade in beasts was dull, and prices on the average lower; choicest qualities found purchasers in some instances at rates rather higher than quoted. Choice qualities of sheep were in demand at fully late rates. Trade was not quite so good for calves, and prices were rather lower. Quotations:—Beasts, 4s. 4d. to 5s., and 5s. 6d. to 5s. 10d.; calves, 5s. 6d. to 7s.; sheep, 5s. 4d. to 6s., and 6s. 6d. to 7s. 4d.; pigs, 4s. 4d. to 5s. 4d.—On Thursday the best English cattle met a steady sale at Monday's values; other sorts were in limited request only. Sheep were in fair demand at late rates, and calves of prime quality were scarce and dearer.

HAY.

In the Whitechapel market on Tuesday there was a good demand for fodder, and rates were firm. The supply was short. Prime Clover, 100s. to 147s.; inferior, 86s. to 95s.; prime meadow hay, 90s. to 132s.; inferior, 55s. to 75s.; and straw, 35s. to 47s. per load. Thursday's trade was steady, and supplies fair. Quotations:—Clover, best, 117s. to 147s.; inferior do., 85s. to 95s.; hay, best, 112s. to 132s.; inferior do., 55s. to 75s.; straw, 34s. to 44s. per load.—Cumberland Market quotations:—Superior meadow hay, 140s. to 147s.; inferior do., 95s. to 115s.; superior Clover, 150s. to 160s.; inferior do., 110s. to 130s.; and straw, 48s. to 54s. per load.

The Potato that Resists Disease.

Carter's

IMPROVED RED-SKIN FLOURBALL.

We again offer a very fine selected Stock of this invaluable Potato, which continues to resist the ravages of the disease in the most surprising manner. We have at all times avoided the statement published by Houses, "that the Red-skin Flourball Potato is the only DISEASE-PROOF variety." We, however, repeat that our Improved Red-skin Flourball RESISTS THE DISEASE TO A FAR GREATER EXTENT than any other variety in cultivation.

Per peck, 3s.; *bushel*, 10s. 6d.; *cwt.*, 17s.

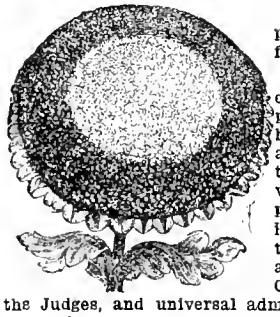
Much cheaper per half ton, or per ton.

BETTERIDGE'S

GRAND

EXHIBITION PRIZE ASTER.

For full description see p. 200, *Gardeners' Chronicle*, February 12, 1876.



Mr. Betteridge has placed in our hands for distribution the ENTIRE STOCK of the following superb Novelties. They have been exhibited at all the great Metropolitan and Provincial Shows of the past autumn, securing in every instance the highest Prizes and Certificates of Commendation from the Judges, and universal admiration from every lover of this popular flower.

SNOWFLAKE or SNOWBALL.—A grand Aster; the flowers large and full. Colour pure snow-white. Awarded a Certificate of Merit at the Alexandra Palace, August 24, 1875. *Per packet*, 2s. 6d.

PURPLE PRINCE.—Flowers of extraordinary size and substance. Colour rich velvety purple. Unquestionably one of the finest quilled Asters ever introduced. *Per packet*, 2s. 6d.

PRINCE of NOVELTIES.—This splendid novelty is strikingly distinct, and must prove a great acquisition; the outer ring of the flowers is of a bright crimson-lake, the inner ring splashed irregularly with rose; centre pure white. Awarded a Certificate of Merit at the Alexandra Palace, August 24, 1875. *Per packet*, 2s. 6d.

PRINCESS ALEXANDRA.—A greatly improved form of "Duchess of Edinburgh," already in cultivation. The flowers are of immense size and substance. Colour bright crimson-rose, pure white centre. *Per packet*, 2s. 6d.

Price per packet (each variety), as above .. 2s. 6d.
Price the Collection of four varieties .. 6s. 6d.

Caution.—*All Packets of the above Novelties will be sealed with our Registered Trade Mark.*

Carter's

The Queen's Seedsmen,

237 & 238, HIGH HOLBORN, LONDON, W.C.

Vegetable & Flower Seeds
Seed Potatos, Garden Tools &c
Superior quality, Carriage free
Descriptive Priced list post free,
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BEGS TO ANNOUNCE THAT HIS

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NEW PLANT and BULB COMPANY

BEG TO CALL ATTENTION TO THEIR

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New Ferns, Six New Lilies, Seeds of New Plants, Lilium auratum, &c.

All at extremely low prices. Post free on application.

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HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,
KNAP HILL NURSERY, WOKING, SURREY.

THE KNAP HILL CYPRESS,
Cupressus Lawsoniana erecta viridis.

ANTHONY WATERER

Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices:—

3 feet high, 2½ feet in circumference, 30s. per doz.
4 feet high, 3 to 4 feet do., 42s. to 60s. per doz.
5 feet high, 4, 5 and 6 ft. do., 10s. 6d., 15s. to 21s. each.
6 and 7 feet high, 6 to 7 and 8 ft. do., 21s. to 31s. 6d. each.

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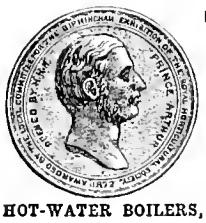

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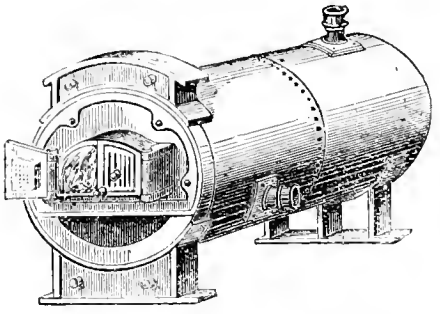

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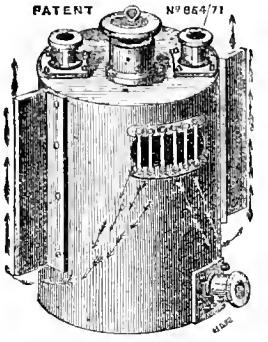

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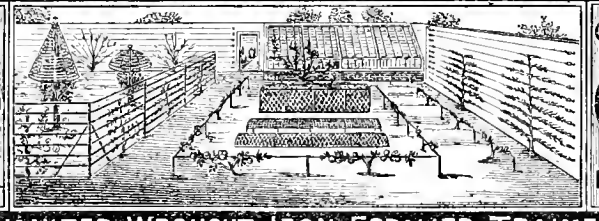

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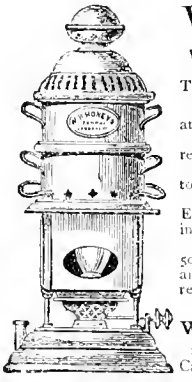

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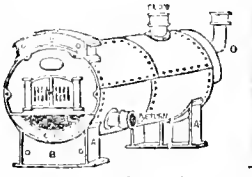

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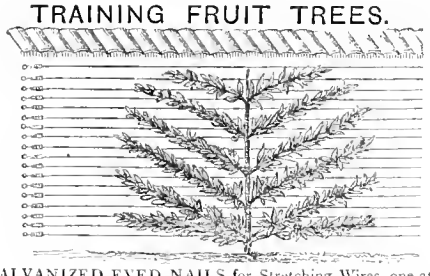

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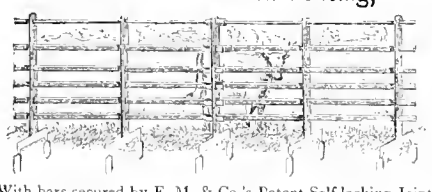

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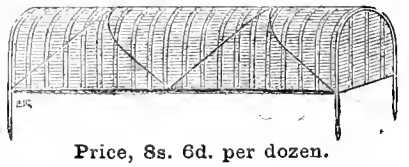

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Post-office Orders payable at 310, *Edgware Road.*

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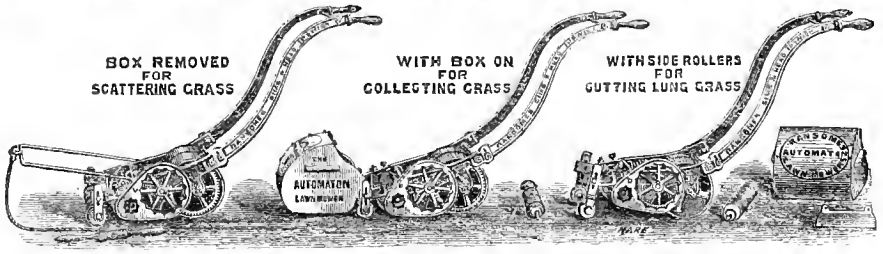

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Sizes, 8 to 20 inches. Prices from 55s.

RANSOME'S "LITTLE GEM" LAWN MOWERS,

For small gardens. These perfect "Little Gems" have a grass-collecting box, and the height of cut can be varied. They have an adjustable ledger blade, and the height of the handle can be adjusted to suit any person. The cutters can be reversed when blunt by driving the Machine in the opposite direction.

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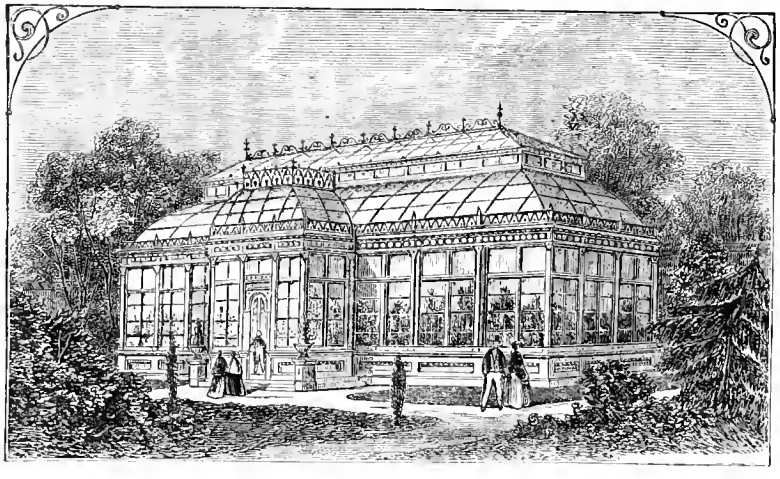

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By DRAINAGE, ENCLOSING, CLEARING, and the ERECTION of FARM BUILDINGS and COTTAGES.

The Land, Loan, and Enfranchisement Company

(Incorporated by special Act of Parliament).

ADVANCES MONEY:

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Floral Shadings, Nettings, &c.	10 ,,
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Seed Packets and Bags	10 ,,
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Flower-pot Covers	15 ,,
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Window Glass, Sheet Lead, Paints, &c.

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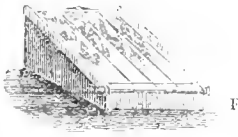
A large assortment. Various sizes in stock.



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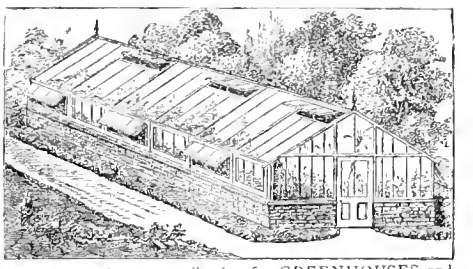

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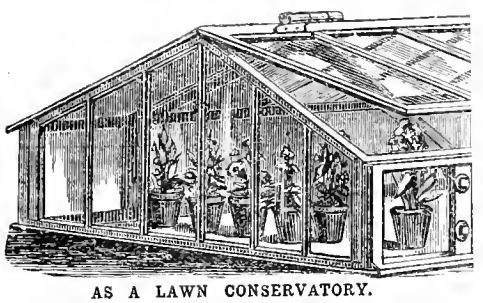
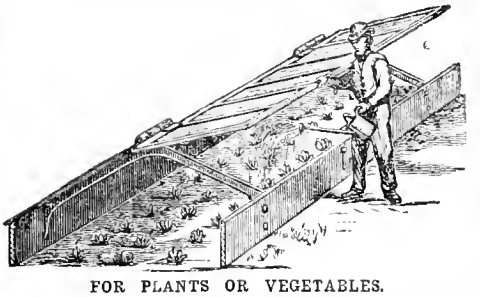


AS A LAWN CONSERVATORY.



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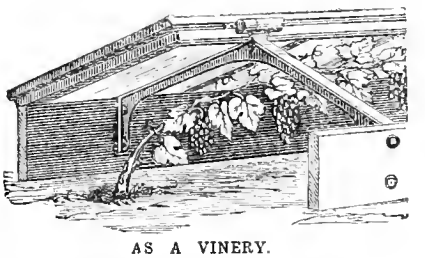

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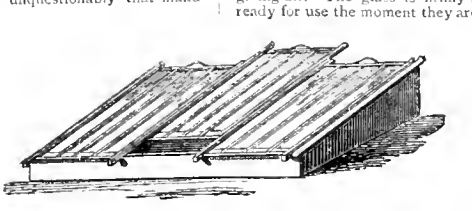

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4 feet long by 6 feet wide, 1 light	£1 17 6
8 feet long by 6 feet wide, 2 lights	3 5 0
12 feet long by 6 feet wide, 3 lights	4 17 6
16 feet long by 6 feet wide, 4 lights	6 7 6
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24 feet long by 6 feet wide, 6 lights	9 7 6

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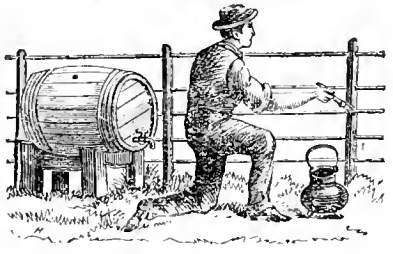

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THE AGRICULTURAL GAZETTE,

for MONDAY, MARCH 13.

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Head Gardener.

WANTED, a HEAD WORKING GARDENER, where two others are kept.—State age, if married, last place, and wages expected, to D. 459, Henry Greenwood, Advertising Agent, Liverpool.

Head Gardener.

WANTED, a HEAD WORKING GARDENER, where two others are kept. State age, if married, last place, and wages expected.—D. 459, Henry Greenwood, Advertising Agent, Liverpool.

WANTED, IMMEDIATELY, a GARDENER (SINGLE-HANDED), to take charge of small Kitchen and Ornamental Garden, Conservatory, Vinery, and Greenhouse. Must understand the management of Vines, Melons, Cucumbers, and Greenhouse Plants, &c. To assist at house, by Pumping, &c. If married, Wife could have Washing. Good character and steadiness indispensable. No house, but wages at 21*s*. per week, to include everything.—Captain S. P. OLIVER, R.A., Pallant House, Havant, Hants.

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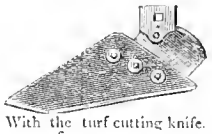
With the turf cutting knife.

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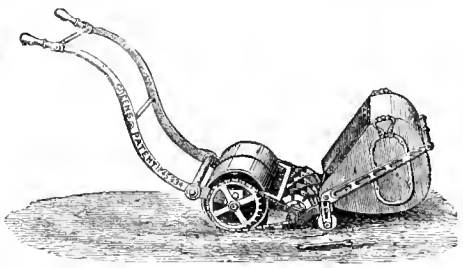

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To cut 18 inches ... ... Can be worked by a Man and Boy.	8	0	0
To cut 20 inches ... ... Ditto.	8	10	0
* „ 22 „ ... ... Ditto.	9	0	0
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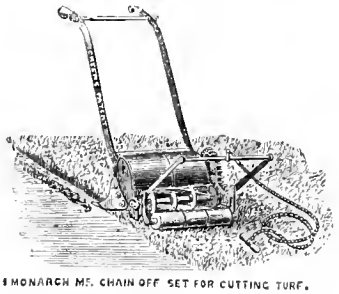
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Subscribers who wish to have "The Gardeners' Chronicle" forwarded DIRECT FROM THE OFFICE are respectfully informed that payment MUST BE MADE IN ADVANCE.

ROYAL BOTANIC SOCIETY, Regent's Park, N.W.

The FIRST EXHIBITION this Season of SPRING FLOWERS will take place on WEDNESDAY, March 29. Tickets to be obtained at the Gardens only by Vouchers from Fellows of the Society, price 2s. 6d. each. Gates open at 2 o'Clock. Schedules of Prizes and all particulars can be had by post.

ROYAL BOTANIC SOCIETY, Regent's Park, S.W.

EXHIBITIONS of SPRING FLOWERS, Wednesdays, March 29 and April 26.
SUMMER EXHIBITIONS, Wednesdays, May 26 and June 21
EVENING FETE, Wednesday, July 5.
SPECIAL FETE and EXHIBITION, Thursday, June 1.
Schedules of Prizes and Tickets are now being issued.

Flower and Fruit Shows.

ROYAL AQUARIUM SUMMER and WINTER GARDEN.—NOTICE to INTENDING EXHIBITORS.—The FIRST EXHIBITION of FLOWERS and FRUIT will take place on APRIL 12 and 13. ENTRIES for the above must be sent in not later than APRIL 4. The Directors desire to state that nothing of an inferior character can be exhibited at any of the Shows. All communications to be addressed to Mr. WILLS, Royal Aquarium.

ALEXANDRA PALACE.—The FIRST GREAT FLOWER SHOW of the Season will be held on FRIDAY and SATURDAY, May 5 and 6. LAST DAY of ENTRY, APRIL 28.

The GREAT ROSE SHOW of the Season will be held on FRIDAY and SATURDAY, July 7 and 8. LAST DAY of ENTRY, JULY 1.

Schedules of Prizes and all particulars may be had on application to
ALEX. McKENZIE, 1 and 2, Great Winchester Street Buildings, E.C., and at the Alexandra Palace, Muswell Hill, N.

THE BLACKBURN FLORAL and HORTICULTURAL SOCIETY'S ANNUAL EXHIBITION, on JUNE 5, 6, and 7. The following PRIZES are Open to NURSERYMEN:—Ten Stove and Greenhouse Plants (not less than six in bloom), £10, £7 10s., and £5. Thirty-six Cut Roses, £5 and £3; twenty-four Cut Roses, £3 and £2; twelve Cut Roses, £2 and £1 10s.

SCHEDULES, &c., may be had from WM. DITCHFIELD, Hon. Sec., Exchange, Hays, Blackburn.

THE INTERNATIONAL POTATO EXHIBITION of 1876 will be held at the Alexandra Palace, on SEPTEMBER 28 and 29, when PRIZES amounting in value to upwards of ONE HUNDRED and THIRTY POUNDS will be awarded.

The Schedule is now ready, and may be obtained on application to PETER McKINLAY, Esq.
23, Upper Thames Street, London, E.C.—March 7.

GLASGOW and WEST of SCOTLAND HORTICULTURAL SOCIETY.

EXHIBITIONS for 1876.

SPRING EXHIBITION, March 29, in City Hall.
SUMMER EXHIBITION, May 10, in Crystal Palace, Botanic Gardens.
AUTUMN EXHIBITION, Sept. 12 and 13, in City Hall.
Nearly SEVEN HUNDRED POUNDS offered in PRIZES. Schedules may be had from
FRANC. GIBB DOUGALL, Secretary.
157, Canning Street, Glasgow.—March 11, 1876.

CARTER'S GRASS SEEDS for Lawns and Parks, 20s. per bushel.

CARTER'S GRASS SEEDS for Permanent Pastures, 22s. 6d. to 36s. per acre.

CARTER'S GRASS SEEDS. Carriage Free. To suit all Soils.

CARTER'S GRASS SEEDS for Renovating Meadows and Lawns, 18s. to 20s. per bush.

CARTER'S, THE QUEEN'S SEEDSMEN, 237 and 238, High Holborn, W.C.

SPECIAL OFFER of SEEDLING RHODODENDRONS, 2-yr. and 3-yr., £7 10s. and £12 10s. per 100,000; 4-yr. and 5 yr., 7s. 6d. and 10s. per 1000. JOSEPH SMITH, Jun., Moor Edge Nurseries, Tansley, near Matlock, Derbyshire.

Cupressus Lawsoniana.

R. AND G. NEAL have the above to offer, 12 to 18 inches high, twice transplanted, bushy and well-rooted plants, at 20s. per 1000, delivered on rail in London. The Nurseries, Wandsworth Common, S.W.

Hepatica, nice varieties (Cheap).

J. VANDERSWAELMEN, Nurseryman, Gendbrugge, Ghent, Belgium, has a large stock. Prices per 100 and 1000 on application.

ALTERNANTHERAS MAGNIFICA and PARONYCHIOIDES. — Good strong, sturdy stuff, shaken out of pots, and forwarded free at 10s. per 100. WILLIAM HOLMES, Frampton Park Nursery, Hackney.

Carnations, Picotees, and Cloves.

CHARLES TURNER is now prepared to send out strong plants from his complete collection, both for the border and for exhibition. Catalogues on application. The Royal Nurseries, Slough.

Verbenas, Verbenas, Verbenas.

WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash. Cemetery Nursery, Gravesend, S.E.

Violas for Spring Bedding.

CHARLES TURNER can supply these effective Spring Flowers in nine distinct varieties. Strong plants, 2s. 6d. per dozen, 15s. per 100. The Royal Nurseries, Slough.

Lilium auratum.—Orchids.

W. F. BOFF offers magnificent Bulbs of LILIUM AURATUM, at 6s., 9s., and 12s. per dozen; one of each size post-free for 36 stamps. W. F. B. also offers ORCHIDS, good sorts, nice plants, at 21s., 30s., and 42s. per dozen.
203, Upper Street, Islington, N.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

CHARLES TURNER'S SEED CATALOGUE is now ready, containing a selection of the best varieties only, including his New Pea, "Dr. Maclean," and "The Schoolmaster" Potato. The Royal Nurseries, Slough.

Hardy Florist Flowers.

THOS. S. WARE'S 1876 SPRING CATALOGUE of the above, including Carnations, Hollyhocks, Pansies, Phloxes, Pæonies, and others, is now ready, and may be had post-free on application
Hale Farm Nurseries, Tottenham, London.

CONSIGNMENTS wanted of best FRUITS and VEGETABLES by GEO. LAXTON, Jun., Salesman, Covent Garden Market. Unexceptionable references as to cash returns.

WANTED, small MARECHAL NIEL and GLOIRE DE DIJON ROSES, on own roots, to grow on. State price to
E. COOLING, Mile Ash Nurseries, Derby.

WANTED, a quantity of EUONYMUS (Green), from 1 to 2 feet high, nice bushy stuff; also large well-grown FICUS ELASTICA, and hardy PALMS and FERNS. Send sizes and prices to
G. REEVES SMITH, Aquarium, Brighton.

Seedling Briers.

WANTED, a few more thousands. Samples and price may be sent by post to
EWING AND CO., Royal Norfolk Nurseries, Eaton, Norwich.

WANTED, 30,000 or 40,000 ALDER, 3 to 4 feet. State price for cash to
T. THORNTON, Heatherside, Bagshot.

WANTED, a few hundredweights of ESCHALOTS. Send price of good quality to
T. FLETCHER, Seedsman, &c., New Square, Chesterfield.

SUTTON'S GRASS SEEDS for PASTURES, 22s. 6d. to 36s. per Acre. Carriage free

SUTTON'S GRASS SEEDS for PARK GROUNDS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for GARDEN LAWNS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for CROQUET GROUNDS, 20s. per Bushel. Carriage free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

ARAUCARIA EXCELSA, a fine specimen, 20 feet high, to be Sold. Apply to
Mr. BOTTON, Belton House, Grantham.

EUCALYPTUS GLOBULUS (Blue Gum of Australia) - A supply of Seed always kept on hand from the establishment of Messrs. Thomas Lang & Co., Melbourne
JOHN WILSON, Seedsman, Whitehaven.

ASH.—10,000, 3 to 4 feet, stout and good rooted, for Sale.
R. COLLYER, Cart House Lane, Woking Station, Surrey

LARCH. -10,000, 1 to 1½ foot, at 15s. per 1000; 10,000, 1½ to 2 feet, at 25s. per 1000; 8000, 2½ to 3½ feet, at 35s. per 1000.
JAMES SMITH, Darley Dale Nurseries, Matlock.

LARCH, 2½ to 3 feet; SPANISH CHESTNUT, 2½ to 3 feet; ASH, 2 to 3 feet; stout transplanted Large quantity of SEEDLING SPANISH CHESTNUT, 6s per 1000.
WANTED.—SEEDLING THORN QUICK.
G. CHORLEY, Midhurst.

Thorns, Thorns, Thorns.

PARKER AND BUSH offer extra strong THORN QUICK, 2 to 3 feet, three times transplanted. Price and samples on application.
St. Michael's Hill Nursery, Bristol.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy.
The Ottershaw Nursery, Chertsey.

New Roses for 1876.

H. BENNETT offers a careful selection of the above, in plants not to be equalled unusually fine this season; ready in March. DESCRIPTIVE LISTS post-free.—Manor Farm Nursery, Stapleford, Salisbury.

TURF.—A quantity of Turf to be Sold at Balham. Apply to
Mr. STOCKER, 24 Lilliter Street. E.C.

For Sale.—New English Scarlet Runners.

WALLACE R. HARRISON has about 40 bushels of the above, harvested in splendid condition Price 15s. per bushel, or 4s. per peck. Sample sent on application. Seed Establishment, High Street, Maidstone.

SEED POTATOS.—Two tons Rivers' Royal Ashleaf, at £6 per ton. Warranted true.
JAS. SMITH, Eynsham, Oxon.

To the Trade Only.

MANGEL.—Special quotation for our guaranteed true and extra selected stocks, on application to F. SANDER AND CO., Seed Growers, St. Albans.

SEAKALE, for forcing, 60s. per 1000; SEAKALE, good planting, 30s. per 1000; DWARF ROSES, fine, 30s. per 100. For cash with orders only.
RICHARD LOCKE, Nurseries, Redhill, Surrey.

PARSNIP SEED.—True Guernsey Hollow Crown, 6d. per oz., free by post on receipt of stamps.
J. H. PARSONS, Market Place, Guernsey

SEEDLING ASPARAGUS ROOTS, in large or small quantities.
R. BRANDON, Prospect House Farm, Plaistow, Essex.

To the Trade.

ASPARAGUS, 1-yr., 2-yr., and 3-yr. TROPÆOLUM CANARIENSE.
JAMES BIRD, American Nurseries, Downham.

PEACHES and NECTARINES, in pots, set with Fruit; the Trees have been forced, and the Fruit is from the size of an Almond to that of a Walnut Price, 7s. 6d. to 10s. 6d.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

ORCHARD-HOUSE TREES, Fruiting in Pots.—Peaches, Nectarines, Plums, Pears, Apples, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

Hothouses, Hot-water Apparatus, &c.

HALLIDAY AND CO., HOTHOUSE BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates and Plans free Best Construction! Best Materials! Best Workmanship! Catalogues free.
Offices: 22, Barton Arcade, MANCHESTER.

SALES BY AUCTION.

City Auction Rooms, 38 & 39, Gracechurch Street, E.C.

IMPORTANT UNRESERVED SALE of a choice Collection of CARNATIONS, PICOTEES, and PINKS, of fine growth; about 500 Standard Dwarf and Climbing ROSES, selected hardy CONIFERÆ, SHRUBS, AMERICAN PLANTS, FRUIT TREES, with some fine Double CAMELLIAS, AZALEAS, CYTISSUS, CINERARIAS, DEUTZIAS, CYCLAMENS, &c., in flower; choice LILIUMS, RANUNCULI, ANEMONES, SEEDS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, on TUESDAY, March 28, at half-past 12 o'Clock precisely.

On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 98, Gracechurch Street, E.C.; and Leytonstone, E.

Stamford Hill.

IMPORTANT to GENTLEMEN, CAPITALISTS, BUILDERS, NURSERYMEN, and OTHERS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, E.C., on MONDAY, March 27, at 1 for 2 o'Clock, the VALUABLE LEASEHOLD PROPERTY, comprising 1a. 1r. 6p. of Building Land, with a Brick-built Cottage standing thereon, known as York Nursery, and situate in St. Ann's Road, Stamford Hill, London, N., close to St. Ann's Church, and within five minutes' walk of Stamford Hill and Seven Sisters Station, Great Eastern Railway, and the same distance from the South Tottenham Station, on the Midland Railway, and close to the new station to be opened on the projected line to the Alexandra Palace—presenting a first-class opportunity to Builders and others for profitable speculation by the erection of small property, so greatly in demand in this locality, as equally well adapted by its nicely retired situation for the erection of a good Residence. Held for a term whereof 73 years are unexpired, at the nominal ground-rent of £5 per annum. Possession will be given on completion.

N.B.—The Greenhouses, Greenhouse Plants, and other effects will be Sold by Auction, on the Premises, in April next, unless the purchaser of the estate will, on or before the 30th inst., agree to take the same at a Valuation.

May be viewed. Particulars, Plans, and Conditions of Sale may be had on the Premises; of Messrs. TRINDER, CURTIS, AND HAYWARD, Solicitors, 4, Bishopsgate Street Within, E.C.; and of Messrs. PROTHEROE AND MORRIS, Auctioneers and Estate Agents, 98, Gracechurch Street, E.C.

Orchids, Lilies, and Rare Plants.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on MONDAY, March 27, at half-past 12 o'Clock precisely, 2000 ODONTOGLOSSUMS, various, just received direct by steamer from Bogota, in fine condition. Mr. S. calls particular attention to this importation, as there are no doubt many fine varieties of Alexandræ, Blunti, and other species amongst them, and are to be sold without the least reserve. Also a few choice ESTABLISHED ORCHIDS, consisting of Oncidium concolor (true)—see dried flowers; Oncidium crispum, amongst which are some very distinct varieties, collected in a new locality: Oncidium Marshallianum (true)—see dried flowers of this lovely species; Oncidium sarcodes (true), collected in full bloom; also Cattleya marginata and Lælia præstans, all in the best possible condition; several small importations of Orchids; about 80 lots of imported Saccolabiums; a large number of extra fine Bulbs of LILIUM KRAMERI, just arrived from Japan, in splendid condition; also a quantity of other Rare LILIES and HARDY ROOTS; 100 plants of Cypripedium spectabile, a case of Araucarias, &c.

On view the morning of Sale, and Catalogues had.

Important Sale of Specimen Stove and Greenhouse PLANTS.

MR. J. C. STEVENS has received instructions from Mr. Morse, of the Original Nurseries, Epsom, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, March 28, at half-past 12 o'Clock precisely, the whole of his well grown EXHIBITION PLANTS, among which will be included magnificent specimens of Ericas, Azaleas, New Holland and Stove Plants, Orchids, Ferns, &c.

N.B.—The whole of the plants are tied, ready for Exhibition purposes, and have been exhibited by Mr. Morse with great success at all the Metropolitan and principal Provincial Shows.

On view the morning of Sale, and Catalogues had.

Imported Orchids from Assam.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, April 6, at half-past 12 o'Clock precisely, a very large importation of various ORCHIDS from Assam, including many hundreds of the hitherto rare and pretty Pleione humilis, and many hundreds of P. maculata; a large quantity of Vanda cœrulea, including one fine mass with upwards of twenty growing stems; also a quantity of the hitherto rare V. undulata, V. cristata; hundreds of Dendrobium cambridgeanum, D. transparens, and others; large quantities of Cœlogynes, Cymbidiums, Aerides, and others; also several plants of a Cypripedium which appears very distinct, and is probably quite new.

On view the morning of Sale, and Catalogues had.

Castle Nursery, Lower Norwood.—Surplus Stock.

MR. J. C. STEVENS has received instructions from Mr. James to SELL by AUCTION, on TUESDAY, April 11, at 12 o'Clock precisely, on the Premises, Castle Nursery, Lower Norwood, GREENHOUSE PLANTS, including large Specimen Camellias, Epacris, a choice lot of Epiphyllums in eight varieties, 50 Indian Azaleas, well set with buds; 100 Epacris and Ericas, 100 Cyclamen persicum, Tree Carnations, &c.; also a quantity of STOVE PLANTS, including Stephanotis floribunda, 16 Gardenias, 50 Bouvardias, 20 Crotons, 80 Draenas, 4 fine Eucharis amazonica, 6 Adiantum Farleyense, 50 mixed Stove Plants, all young, thriving stock, and about 250 lots of ESTABLISHED ORCHIDS, including Phalænopsis Schilleriana and grandiflora, some fine plants of Dendrobium Falconeri, Cattleya crispa and labata, Odontoglossum Alexandræ, &c. Many of them will be in flower.

On view the day prior and morning of Sale, and Catalogues had at the Castle Nursery, Lower Norwood; and of Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

The Nursery is situate two minutes' walk from the Lower Norwood Station.

Important Sale of Rare Plants,

From the Collection of the late S. RUCKER, Esq., of West Hill, Wandsworth.

MR. J. C. STEVENS begs to announce that he has received instructions to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and THURSDAY, April 5 and 27, at half-past 12 o'Clock precisely each day, the surplus plants from the Collection of the late S. Rucker, Esq., of West Hill, Wandsworth, comprising specimen AZALEAS and PALMS, a Collection of FERNS, including Trichomanes, Gleichenias, &c.; a very fine Collection of NERINES, including Fothergilla major, coruscans, flexuosa, many of them fifty bulbs in a pot; CROTONS, DRACÆNAS, and MISCELLANEOUS STOVE PLANTS, PITCHER PLANTS, a choice Collection of NEPENTHES, and many other rare and valuable plants.

On view the mornings of Sale, and Catalogues had.

Sale of the Collection of Orchids formed by the late S. RUCKER, Esq., of Wandsworth.

MR. J. C. STEVENS has received instructions from Messrs. James Veitch & Sons, of Chelsea, to offer for SALE on WEDNESDAY and THURSDAY, April 12 and 13, the Collection of ORCHIDS recently purchased by them from the Executors of the late S. Rucker, Esq. This collection comprises many fine and rare kinds. It was formed by Mr. Rucker during the last five years, and it is not too much to say that almost every plant was selected for its variety. The plants are healthy, vigorous, young-growing specimens, and well worthy the attention of all Orchid growers. Amongst others will be found the following:—

Oncidium Rogersii (true), the only plant at present saleable in England
Lælia anceps Dawsoni
Odontoglossum vexillarium (strong)
" Roezlii (strong)
" Alexandræ (several)
Masdevallia Wallisii (true)
" tovarensis
" Harryana
" Landeni
" Veitchii
Dendrobium Wardianum
" crassinode
" aggregatum majus (splendid masses)
" Jamesianum (very fine)
Phalænopsis grandiflora
" amabilis
" Schilleriana (a very fine lot of all the kinds)
Cattleya labiata (true autumn-flowering varieties)
" Mendelii (splendid plants), &c.

On view the mornings of Sale, and Catalogues had.

Pine-apple Nursery, Edgware Road, W.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions from Mr. J. Weeks to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., almost without reserve, on THURSDAY, April 20, at half-past 12 o'Clock precisely, the Valuable PREMISES and GOODWILL of the PINE-APPLE NURSERY, Maida Vale, Edgware Road, W., together with Dwelling-house, Seed Shop, and Offices, and all the extensive ranges of Horticultural Buildings and Sheds.

Held:—As to part, for a term which will expire in 1909, at a Ground-rent of £45; and, as to the remainder, for a term which will expire in 1923, at a Ground-rent of £89. The Nursery has, within the last three or four years, been very greatly enlarged and improved, upwards of £10,000 having been expended in additions, improvements, and repairs; and it is considered in the Trade to be the most important Establishment of the kind in the World. It possesses an extensive connection both in the Nursery and Seed Trade, amongst the Nobility and Gentry and their Gardeners. Part of the purchase-money may remain on Mortgage.

Nurseries in the immediate neighbourhood of London are seldom valued by the acre; but this is an exception, as the Horticultural Buildings and Show-grounds cover about 2½ Acres, and form a most valuable property, and well adapted for a Skating Rink (permission for which can no doubt readily be obtained), as well as a Nursery Business.

For further particulars apply to Messrs. KEARSEY, SON, AND HAWES, 35, Old Jewry, London, E.C.; and Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

Trees and Shrubs.

MR. CHARLES HADFIELD will SELL by AUCTION, without the slightest reserve, as the land must be cleared this spring, at Mr. B. Whitham's Nurseries, Reddish, near Stockport, on WEDNESDAY, April 5, a splendid COLLECTION of TREES and SHRUBS, comprising Horse Chestnuts, Beech, Limes, Poplars in sorts, Austrian Pines, Laurels in sorts, Box, English and Irish Yews, Cupressus, Arbor-vitæs, Hollies, Apples, Currants, Dogwood, Lilacs, large Hybrid Rhododendrons, and many other varieties of Trees and Shrubs. Also many thousand transplanted Rhododendrons, from 9 to 12 inches, 12 to 15 inches, and 1½ to 2 feet high, in lots to suit purchasers.

Catalogues may be had.

Sale of a very Valuable Collection of Specimen and Half-specimen STOVE and GREENHOUSE PLANTS, the whole of which have been exhibited.

ARTINGSTALL AND HIND (the surviving Partners of the late Firm of CAPES, DUNN & Co.) beg to announce that they have received peremptory instructions from Messrs. E. Cole & Sons, owing to their want of space, to SELL by AUCTION, on WEDNESDAY and THURSDAY, April 19 and 20, commencing at 12 o'Clock prompt, at their Nurseries, Withington, near Manchester, the whole of their valuable Collection of EXHIBITION PLANTS.

May be viewed one week prior to the Sale, and Catalogues then had at the Nurseries; or now, together with further information, by applying to the Auctioneers, 51, Princess Street, Manchester.

GARDEN GROUND WANTED, with Pits or Glasshouse, suitable for rearing and growing Hardy Florist Flowers. A SIX-ROOMED COTTAGE WANTED near at hand. Small valuation would not be objected to. From 10 to 60 miles off London preferred. Best security and references given.

Mr. THOMPSON, Upper Swainswick, Bath.

To Nurserymen, Seedsmen, Gentlemen or Market GARDENERS.

TO BE LET, Five Acres of NURSERY GROUND, in Yorkshire, with the option of more. Rent very low. Stock at a valuation. Also SEED SHOP if desired, in good situation, at a nominal rent. This is a first-class opportunity for any one wishing to begin the above business. Apply for particulars to

Mr. EDWIN COOLING, Nurseryman, Derby.

TO LET, a compact NURSERY and FLORIST'S, near a good town, 30 miles north of London. Five good Glasshouses. Established 20 years.—Apply CHARLES LAWFORD, Builder, Langley Road, Luton, Beds.

To Market Gardeners, Fruit Growers, and Others.

TO BE DISPOSED OF (the Proprietor retiring from Business), the valuable LEASES of about 70 acres of well-known and first-class MARKET GARDEN LAND, situated about 4 miles from Covent Garden Market; is in the highest possible state of Cultivation, well and judiciously Cropped, and second to none in England. There are 19 acres of Asparagus, 13 acres of Fruit, and 40 acres of open Land, capital and convenient DWELLING-HOUSE, large BARNS and PACKING-SHEDS, FRUIT ROOM, STABLING for eight horses, CART SHEDS, &c. The Crops, Dressings, Half-Dressings, &c., are to be taken at a valuation. The Land may be viewed by cards, which may be obtained, with all further particulars, on personal application only to

Mr. J. S. GOMME, Market Garden Auctioneer, Valuer, 12, York Street, Covent Garden, London, W.C.

The Most Beautiful new Regal Pelargonium is

BEAUTY OF OXTON.

Price, 1 guinea each.

A pretty and charming novelty is the new double-flowering IVY-LEAVED PELARGONIUM, "KONIG ALBERT." Price 7s. 6d. each.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Sow Now.

YOUNG'S NONSUCH PEA.—The most abundant and perpetual bearing of all Marrowfat Peas. Half-pint trial packets free per post for 1s. 6d., per quart, 5s., through all Seedsmen, or of

CHARLES YOUNG, Balham Hill Nursery, S.W.

GLOBE ARTICHOKE and ASPARAGUS ROOTS, of all sizes and in any quantity; also a few thousands of PRICKLY COMFREY ROOTS. Prices on application to

Messrs. JOHN AND GEORGE MCHATTIE, Seed Merchants, Chester.

TREE FERNS.—An English Gardener is now collecting and sending to England the best specimens of Dicksonia antarctica from the coolest districts of Tasmania, from 4 feet to any height required. Freight and all expenses paid to London. For price and all particulars apply to

Mr. WALKER, No. 9, Mount Pleasant, Tunbridge Wells.

To Potato Growers.

CHRISTMAS QUINCEY, Peterborough, having received from New York a further consignment of 100 barrels of SNOWFLAKE POTATOS, is prepared to supply the Trade or the Public by the stone, cwt., or ton. EUREKA also in any quantity, and most of the leading English and American varieties. Peterborough.—March 25.

Fruiting and Planting Vines.

THE COWAN PATENTS COMPANY (late Meredith) have still on hand a good selection of the above. Catalogues and prices on application. They can also offer good Fruiting and Succession PINES.

The Vineyard, Garston, near Liverpool.

Notice.—Seeds, Seeds.

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CABBAGE PLANTS, superior Bedfordshire-grown:—Early Enfield, York, and Nonpareil, at 3s. per 1000; Robinson's Champion Drumheads, at 4s. per 1000; Red Dutch Pickling, at 5s. per 1000 (supplied in any quantities). Early Longpod BEANS, at 8s. 6d. per bushel; common Windsors, at 16s per bushel. Forcing and Planting ASPARAGUS PLANTS, at 2s 6d. to 7s. 6d. per 100. Double Scarlet DAISIES, at 2s. 6d. per 100; splendid large Crown Daisies, 5s per 100. Splendid new flowering PYRETHRUMS, at 4s. per dozen. Beautiful Blue DELPHINIUMS, at 4s per dozen. Terms, cash with orders. SEED POTATOS, and all other Seeds of best quality, at lowest prices.

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2-yr. seedlings. | 4 to 8 inches, transplanted.
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Centaurea candidissima, or ragusina.
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WOOD AND INGRAM offer fine summer sown plants of the above, thoroughly established in thumb pots, at 20s. per 100; package, 3s 6d. per 100, or 2s. for 50, not less than which will be sold at the price
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ALDER, transplanted, 2½ to 3½ feet.
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Extra strong SEAKALE, 2s per dozen.
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POLYANTHUS, choice mixed, 1s. 6d. per packet; also extra choice mixed (from fine laced flowers), 2s. 6d. per packet, post free. Flower Seeds of every description of the choicest quality.
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FOR SALE, in consequence of alterations about to be made in the Hothouse, a quantity of STOVE PLANTS, including BEGONIAS (in variety), FERNS, &c. Application to be made to
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HEREFORD MEETING, JUNE 5, 6, 7, 8, and 9, 1876.
ENTRIES of LIVE STOCK, IMPLEMENTS, WORKS of ART, &c., CLOSE APRIL 12, after which date no Fees or Entries can be received
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Package free "cash." Post-office Order on Chester.
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PLANT NOW.
PORTUGAL LAURELS, 3 feet, 40s.; Common ditto, 4 to 5 feet, 30s.; Scarlet Flowering CHESTNUT, 10 to 12 feet, Standards, 60s.; BIOTA COMPACTA, 4 to 5 feet, 60s.; CUPRESSUS LAWSONI, 3 to 4 feet, 50s.; THUJA GIGANTEA, 4 feet, 60s.; HOLLY, 1½ foot, 20s.; YEWS, 1½ foot, 20s. per 100. All very fine.—J. JACKSON, Nursery, Kidderminster.

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PANSIES, fine show sorts, in great variety, 3s 6d per dozen.
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The finest ever yet offered. See
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Will be sent into commerce the first week in May.
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Keynes' grand flowers. See
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Cupressus Lawsoniana.
,, macrocarpa.
Picea amabilis.
,, bifolia
,, concolor.
,, ,, violacea
,, grandis
,, lasiocarpa.

Picea magnifica.
,, nobilis.
,, Nordmanniana.
,, Pinsapo.
Pinus aristata
,, californica.
,, contorta
,, deflexa
,, flexilis
,, Lambertiana.
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BOUQUET PAPERS, Flat, per gross :—3½ in., 3s. 6d.; 5½ in., 5s. 6d.; 7½ in., 7s. 6d.; 9 in., 10s. 6d.; 10 in., 13s.; 11 in., 14s. 6d.
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Package included. Terms cash.
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OAKS, large quantity, 3 to 4 and 4 to 5 feet.
With a GENERAL NURSERY STOCK. Prices on application.

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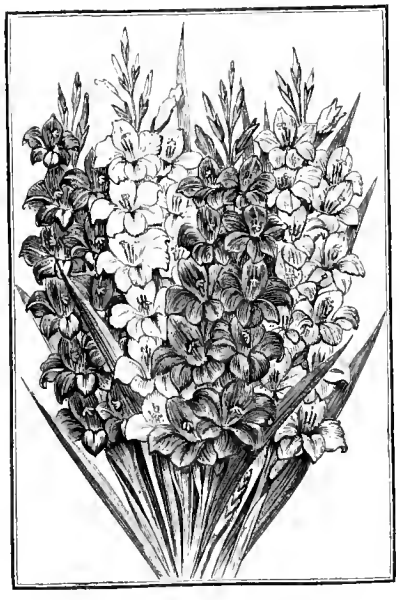

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50 in 25 superb exhibition vars. ..	3	10	0	12 in 12 fine named sorts	0	12	0
25 in 25 superb exhibition vars. ..	1	17	6	12 in 12 good named vars.	0	9	0
24 in 12 superb exhibition vars. ..	1	15	0	12 in 12 popular sorts	0	6	0

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EXCELLENT GARDEN SEEDS.
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The superiority of these Seeds is proved by the numerous testimonies constantly received, and those who wish for a superior article should order at once of
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Verbenas for the Million.

S. BIDE can now supply for cash :—VERBENAS, strong spring-struck plants of Purple King, Scarlet, White, Pink, and other varieties, at 8s. per 100, 60s. per 1000, package free.
PELARGONIUMS, Show and Fancy, of the best varieties, 40s. per 100.
GERANIUMS, plain-leaved and Zonal, strong autumn-struck plants, 10s. per 100.
CENTAUREA CANDIDISSIMA, autumn-struck and well-established in large 60-pots, 40s. per 100.
CALCEOLARIAS, aurea floribunda, Golden Gem, and others, 8s. per 100.
Cash to accompany all orders from unknown correspondents.
S. BIDE, Alma Nursery, Farnham, Surrey.

A BARGAIN is offered in a lot of very extra strong BLACK HAMBURGH VINES, which must, on account of alterations, be moved out of a border in which they were planted to be fruited this year. They have never borne a berry, and would ripen 20 lb. to 30 lb. of fruit well. Strong Canes, with splendid healthy roots, 10s. 6d. each.
L. WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

Mulberries.

March and April are the two best months for Transplanting.
KINMONT AND KIDD have a large and very fine stock of these to offer, with fine clean stems and excellent heads, which they are prepared to Dispose of to the Trade and others on very liberal terms. Particulars on application. Also a few hundred YUCCA RECURVA, cheap.
Exotic Nursery, Canterbury.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of
WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

MESSRS. BROWN AND CO. will forward the following Choice Plants to any part :—
25 AZALEAS, new hardy Belgian varieties, one of a sort, on their own roots, by name, 20s.
25 AZALEAS, American varieties, do., do., 15s.
12 Hardy RHODODENDRONS, including Scarlet, White, and Rose, one of a sort, 12s.
12 fine hardy Scarlet RHODODENDRONS, 10s.
Hardy HEATHS, LEDUMS, and KALMIAS, 6s. per dozen.
ROSES and FRUIT TREES of all kinds cheap.
American Nursery, Farnham, Surrey.

NEW FUCHSIAS of 1875, now ready to send out, carefully selected from the best kinds sent out in 1875, in good plants. Twelve select New Fuchsias, 4s. ; 12 best selected varieties of 1874, for 3s. ; 12 very fine older varieties, 2s. ; all sent post free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW DOUBLE WHITE GERANIUM, "GEORGE SAND," the largest and best Double White; 12 superb varieties Double Geraniums, including "George Sand" and other new colours, in good plants, post-free for 6s.
NEW AGERATUM, DUCHESS of EDINBURGH, the best Dwarf Blue yet produced, 3s. per dozen, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW VICTORIA DAISIES.—This new strain of Double Daisies produces flowers 6 inches in circumference, on long foot-stalks 8 inches high, looking more like large Ranunculi than Daisies. They are decided acquisitions to our early spring-blooming plants. B. W. K. is now enabled to offer the following six varieties, post-free for 2s., viz. :—Albert Edward, Albert Victor, Masterpiece, Nil Desperandum, Renown, Queen Victoria ; 12 newer varieties of 1873, in 12 fine varieties, for 6s., post-free ; also a fine mixture of colours, unnamed, at 1s. 4d. per dozen, or 8s. per 100, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

Cabbage Plants.

H. J. HARDY begs to offer a quantity of strong autumn-sown plants, all true.
ENFIELD MARKET, 3s. 6d. per 1000.
ROBINSON'S DRUMHEAD, 3s. per 1000.
Packages and Carriage Free for 5000 upwards to any Railway Station in England. Cash must accompany all orders from unknown correspondents. Post-office Orders made payable at Bures. Apply to
H. J. HARDY, Stour Valley Seed Grounds, Bures, Essex.

Alternantheras—Centaureas.

WILLIAM MILES offers good healthy Plants from stores of ALTERNANTHERA AMŒNA and A. AMŒNA SPECTABILIS, at 8s. per 100, 70s. per 1000, A. MAGNIFICA, A. PARONYCHIOIDES, and A. AMABILIS LATIFOLIA, at 6s. per 100, 50s. per 1000.
CENTAUREA CANDIDISSIMA, strong stuff, in small 60-size pots, 20s. per 100, £8 per 1000, package included. Terms cash.—West Brighton Nurseries, Brighton, Sussex.

Fuchsias, Fuchsias, Fuchsias.

T. FLETCHER, JUN., offers strong healthy rooted cuttings of all the leading exhibition varieties, at 8s. per 100, or 10d. per dozen ; also healthy cuttings at 5s. per 100, or 6d. per dozen, carriage free ; also CALCEOLARIA AUREA FLORIBUNDA, at 5s. per 100 ; also RED DAISIES, the finest in cultivation, at 10s. per 100, or £4 per 1000. Package free. Terms cash.
Westfield Nursery, Ashgate Road, Chesterfield.

To the Trade.

JACS. JURRISSEN AND SON beg to call particular attention to their large stock of FRUIT TREES, Dwarf-trained PEACHES and APRICOTS, Standard ORNAMENTAL TREES and SHRUBS, HOLLIES, ROSES, CONIFERÆ, and FOREST TREES.

Wholesale TRADE LIST now ready, free on application.

Nurseries, Naarden, near Amsterdam, Holland.

AVENUE TREES.

	Girth 4 ft. from ground.
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10 inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8 ,,
MAPLES, Norway, 12 to 16 feet high ..	5 to 8 ,,
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10 ,,
,, Scarlet, 10 to 14 feet high	8 to 10 ,,
,, Double, 10 to 14 feet high	8 to 10 ,,

POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high .. .. 5 to 10 ,,

ELMS, 15 to 18 feet .. .. .. 7 to 9 ,,

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.

Knap Hill Nursery, Woking, Surrey

Surplus Stock.

H. LANE AND SON can offer the following at greatly reduced prices, all fine, well-grown trees :—

CUPRESSUS LAWSONIANA, 3 to 15 feet.
THUJOPSIS BOREALIS, 3 to 15 feet.
THUJA LOBBII, 3 to 15 feet.
,, GIGANTEA, 4 to 9 feet.
WELLINGTONIA GIGANTEA, 5 to 10 feet.
PICEA GRANDIS, 8 to 15 feet
,, NORDMANNIANA, 2 to 12 feet.
,, NOBILIS, 2 to 8 feet.
YEWS, Irish, 4 to 8 feet.
LAURELS, Portugal, 2 to 5 feet.
CEDRUS DEODARA, 3 to 5 feet.
ARBOR-VITÆ, Siberian, 4 to 6 feet.
HOLLIES, Variegated, 2 to 7 feet.

RHODODENDRONS, named, Seedling Hybrids and Ponticums, blooming plants; Standard WALNUTS, PRUNE DAMSONS, CHERRIES, and THORNS; Dwarf-trained APPLES, PEARS, and PLUMS. Horizontal-trained APPLES and PEARS; Pyramidal APPLES, PEARS, PLUMS, and CHERRIES.

CATALOGUE and price on application.

The Nurseries, Great Berkhamsted, Herts.

JAMES SMITH, Darley Dale Nurseries, near Matlock, offers the following :—

10,000 CUPRESSUS LAWSONIANA, 15 to 18 inches, 3s. per dozen, 18s. per 100; 2 to 3 feet, 5s. per dozen, 30s. per 100; 2½ to 3½ feet, 6s. per dozen, 40s. per 100; 3 to 4 feet, 9s. per dozen, 65s. per 100, also larger plants.
5,000 CRYPTOMERIA ELEGANS, a fine Conifer from Japan, perfectly hardy—15 to 18 inches, 8s. per dozen; 1½ to 2 feet, 10s. per dozen; 2 to 3 feet, 15s. per dozen; 3 to 4 feet, 22s. per dozen. Also CRYPTOMERIA JAPONICA and LOBBII, of various sizes
10,000 IRISH IVIES, good plants, 3s. per dozen, 10s. per 100.
10,000 PICEA NOBILIS, in perfect health, 1½ to 2 feet, 8s. per dozen, 60s. per 100; 2 to 2½ feet, 22s. per dozen; 3 to 3½ feet, 60s. per dozen.
5,000 RETINOSPORAS, fine plants, of various kinds.
100,000 FLOWERING SHRUBS, of various kinds.
10,000,000 RHODODENDRONS. See Catalogue
60,000 HARDY HEATHS.
20,000 KALMIAS, various.
10,000 LEDUMS, various.
10,000 ANDROMEDAS, various.
30,000 GAULTHERIA SHALLON.
10,000 BOX, 1½ to 2 feet.
20,000 PRIVET, Evergreen, 2 to 3 feet.
20,000 PINUS CEMBRA, fine plants, of various sizes.
10,000 ARBOR-VITÆ, American, of various sizes, an excellent plant for Hedges; also LOBBII and others.
10,000 HYPERICUM CALYCINUM.

CATALOGUES free by post.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham, will be glad to send their CATALOGUE for this season on application. The stock of the undernamed, 10 best sorts and good plants, is very large and fine :—

	Per doz. s. d.	P. 100. £ s.
Antirrhinums	3 6	1 5
Ageratums	2 0	0 12
Chrysanthemums	3 0	1 0
Carnations and Picotees, single plants	6 0	2 5
,, pairs	11 0	3 15
Clematis	15 0	5 0
Calceolarias	1 0	0 8
Coleus	3 0	1 1
Carpet Bedding plants	1 6	0 10
Daisies, various colours	1 0	0 5
Fuchsias	3 0	1 0
Geraniums, tricolor	3 6	1 5
,, bicolor	3 6	1 5
,, Zonal and Nosegay in sorts for pots	3 0	1 1
,, autumn struck for bedding, out of pots	2 0	0 12
Heliotropes	2 6	0 18
Iris germanica	3 0	1
Lantanas	3 0	
Lobelias	1 0	0 6
Succulents	6 0	
Greenhouse plants 12s. to		18 0
Stove plants, 12s. to		18 0
Tree Carnations	12 0	

	Per doz. s. d.	P. 100. £ s.
Pelargoniums, 6s. to	9 0	
Herbaceous plants	3 0	1 0
Pelargoniums: Queen Victoria and Captain Raies		18 0
Pansies, show	3 6	1 5
,, bedding	2 0	0 15
Pinks	3 6	1 5
Pæonies	12 0	4 10
Pentstemons	3 6	1 5
Pyrethrums	10 0	
Salvias	3 0	1 1
Sedums	3 0	1 1
Saxifrages	3 0	1 1
Violas	1 6	0 10
Violets	2 6	0 18
Roses, in pots, H.P.'s	12 0	4 10
Hardy Climbing plants, in pots	12 0	
Dactylis elegantissima	1 0	4 6
Grape Vines	30s. to 60	0
Begonias	4 0	
Achimenes	2 6	
Dracænas terminalis and Cooperi	18 0	
Caladiums	15 0	
Epiphyllums	12 0	

Trade prices on application.

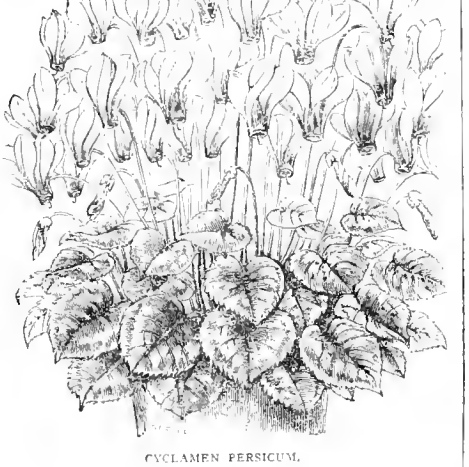
B. S. WILLIAMS'

CHOICE

FLOWER AND VEGETABLE

Seeds for 1876.

	Per Packet.—s. d.
BEANS, Williams' Early Prolific Dwarf French, in sealed half-pints	1 6
BRUSSELS SPROUTS, Weldi's Giant, one of the finest in cultivation	1 0
CUCUMBER, Osmaston Manor (new), one of the Finest Varieties, either for Summer or Winter use; 26 to 32 inches long, very prolific	2 6
MELON, Osmaston Manor Hybrid (new), a splendid Green-fleshed Variety, beautifully netted, globular in form, and of delicious flavour	2 6
ONION, Williams' Magnum Bonum, the heaviest cropping and longest keeping Onion in cultivation	1 6



CYCLAMEN PERSICUM.

CHOICE FLOWER SEEDS.

	Per Packet.—s. d.
AURICULA, saved from the finest show varieties	1 6
BALSAM, Williams' Superb Strain	2s. 6d. and 1 6
BEGONIA FRŒBELII (new).—This is a new and distinct species	2 6
,, SEDENI SEMI-PLENA, a new semi-double flowering variety	2 6
CYCLAMEN PERSICUM, Williams' Superb Strain,	5s., 3s. 6d., 2s. 6d., and 1 6
CELOSIA PYRAMIDALIS PLUMOSA	1 6
CALCEOLARIA, Williams' Superb Strain,	5s., 3s. 6d., 2s. 6d., and 1 6
CINERARIA, Weatherill's Extra Choice Strain,	5s., 3s. 6d., 2s. 6d., and 1 6
COCKSCOMB, Glasgow Prize; combs of this splendid strain measure from 33 to 36 inches from tip to tip	2 6
GLOXINIA, Finest Drooping Varieties	1 6
,, Finest Erect Varieties	1 6
PRIMULA, Williams' Superb Strain, Red, White, or Mixed	5s., 3s. 6d., 2s. 6d., and 1 6
PYRETHRUM GOLDEN GEM	1 0
STOCK, Williams' Improved Giant Scarlet Brompton	1 6
,, East Lothian, an assortment of 3 colours	2 6
,, Virginian, New Crimson, a distinct variety; the flowers are large and of a bright crimson colour, the habit is dwarf, robust and branching	1 0
WALLFLOWER, Harbinger, Autumn and Winter Flowering	1 0

ILLUSTRATED SEED CATALOGUE

Gratis and post-free on application.

Packets of Flower Seeds, excepting heavy kinds, Free by Post.

VICTORIA AND PARADISE NURSERIES,

Upper Holloway, London, N.

Important to Farmers.

SAMUEL FINNEY AND CO., SEED MERCHANTS and IMPORTERS, Newcastle-upon-Tyne, beg to inform Agriculturists and others that their FARM SEED LIST for 1876 is now ready, and will be forwarded post-free upon application.

Established more than a century.

New and Genuine Seeds Only.

Now ready, gratis and post-free,

BRUNNING AND CO.'S New Illustrated and DESCRIPTIVE CATALOGUE of the above for the present season, containing a selection of the choicest novelties, together with the most approved older varieties, profusely Illustrated, and contains a splendid Coloured Plate representing a group of choice Hybrid Gladioli, for the growth of which their Nurseries are noted. Forwarded post-free to all applicants.

ISAAC BRUNNING AND CO., The Yarmouth Seed Establishment, 1, Market Place, Great Yarmouth.

Abies excelsa aurea (the Golden Spruce).

MESSRS. J. AND C. LEE beg to announce that they now intend to send out this magnificent tree. When planted in the full sunlight the whole tree is suffused with the richest gold. First-class Certificate from the Floral Committee of the Royal Horticultural Society. Well-established plants, 21s. each. A few of extra sizes, 31s. 6d. and 42s. each. The usual allowance to the Trade.

Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

Cheap Gladioli from Paris—Named and Seedlings.

LÉVÊQUE AND SON, NURSERYMEN, Ivry-sur-Seine, near Paris, have a large and splendid stock of good and strong flowering bulbs of GLADIOLI SEEDLINGS, equal in flower to the collection, at 8s. per 100, £3 per 1000, and £26 per 10,000—mixed, white, red, and pink; per colour, 12s. to 20s. per 100; yellow, 24s. per 100; per names (100), ten sorts, 8s. per 100; 25 sorts, 14s. per 100; in 50 or 100 sorts, the best, from £1 to £6, less or more, according to the novelty of the sorts. All good flowering bulbs. English cheque on London, or Post-office Order on Paris, accepted in payment.

CERASUS LAURO-CERASUS CAMELLIÆFOLIA (the Camellia-leaved Laurel).—This extraordinary and elegant Laurel was raised by Mr. Wood, of Woodbridge, in Suffolk, on whose behalf we are now offering it for the first time to the public. The leaves are light green, like the common Laurel, but differ from it in shape in being elegantly curled, like a Camellia leaf, or more closely resembling in form the beautiful Croton volutum.

The effect of the plant, grown as a pyramid and well pruned, is peculiarly striking, and if planted close as an edging plant, and pinched well back, it produces a very neat and pleasing appearance.

We propose to distribute this well-known variety at the following low prices, being desirous of seeing it largely used, as it deserves to be, for the purposes above-mentioned :—Per plant, 5s.; per dozen, 42s. Special offer to the Trade.

J. AND C. LEE, Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

SNOWFLAKE POTATO—Having grown and imported largely of this splendid new variety, we can offer FINE ENGLISH-GROWN SEED, price 6d. per lb.; 6s. per peck of 14 lb.; 21s. per bushel of 56 lb. Much cheaper by the sack or ton.

FINE IMPORTED TUBERS, same price. Orders of 21s. and upwards carriage paid.

P. McKinlay, Esq., Beckenham, a well-known authority, writing of this Potato in the *Gardeners' Magazine*, Jan. 15 last, says :—"My experience with American varieties has been somewhat extensive, and I find that they generally improve as they become acclimatised. . . . I have no doubt Snowflake will improve in quality, and will become one of the best in cultivation"

DANIELS BROTHERS, Seed Growers, Norwich.

DAVID LLOYD AND CO. (LIMITED).

CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.

Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following :—

J. T. RUBERY, 8B, Rumford Place, Liverpool.
SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
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AGENTS WANTED.

WM. PAUL AND SON HAVE TO OFFER :—

SPECIMEN ROSES,

2 to 5 feet, 5s. to 105s. each, loaded with incipient flower-buds, suitable for exhibiting this year.

, Thousands of young plants, Standards and Dwarfs, at the customary nursery prices.

SPECIMEN CAMELLIAS,

3 to 10 feet, 21s. to 30 guineas each; handsome trees, with bloom.

, Thousands of young plants of all the best sorts, with bloom, at the ordinary nursery prices.

SPECIMEN FRUIT TREES.

Apples, Pears, Cherries, Plums, &c., pyramids, well set with fruiting buds, will bear a crop this year; 3 to 8 feet high, well balanced trees, 30s. to 60s. per dozen.

, Thousands of young trees of every kind at the usual Nursery prices.

SPECIMEN EVERGREENS and SHRUBS

of all the best sorts; acres to select from; 1000 species and varieties; individual prices on application.

SPECIMEN LIMES, 12 to 14 feet, 36s. to 48s. per dozen.
,, PLANES, 12 to 18 feet, 7s. 6d. to 15s. each.
,, ELMS, 12 to 14 feet, 24s. per dozen.
,, TURKEY OAKS, 12 to 14 feet, 36s. per dozen.

, A large collection of Avenue, Roadside, and Park trees, &c.

Priced descriptive CATALOGUES post-free on application.

IMPORTANT.—Observe the Christian Name—

WM. PAUL AND SON, Paul's Nurseries, Waltham Cross, Herts.

FRANCIS & ARTHUR DICKSON & SONS.

106 Eastgate St. & The "Upton" Nurseries CHESTER.

Farm Seeds Extra Select

& of Unsurpassed Quality

Carriage Paid.

Illustrated Catalogue, Free.

GLOXINIA CRASSIFOLIA GRANDIFLORA.

Magnificent strain, quite distinct. The leaves, which are very broad and fleshy, recurve so as to almost cover the pot; the flowers are much larger than in the old sorts, and of very brilliant shades of colour, and fine form. By sowing now on a gentle hotbed they may be had in bloom in autumn, and seedling plants always yield much the finest blooms. Erecta and horizontalis, separate or mixed.

Per packet, 1*s.* and 2*s.* 6*d.*, stamps or Post-office Order.

Seed CATALOGUE, sent free by post.

JAMES TYNAN, 68, Great George Street, Liverpool.

SUTTON'S CHOICE GLADIOLI.

SUTTON'S COLLECTIONS of GLADIOLI.

Choice Exhibition Varieties.

25 splendid varieties (our selection)	£2 0 0
12 splendid varieties (our selection)	1 0 0

Choice Varieties for Garden Decoration.

100 roots, in 50 beautiful varieties	£5 0 0
50 roots, in 50 beautiful varieties	2 10 0
25 roots, in 25 beautiful varieties	1 5 0
12 roots, in 12 beautiful varieties	0 12 0

Cheaper but Showy Varieties.

25 roots in 25 choice varieties	£0 17 6
12 roots in 12 choice varieties	0 9 0
12 roots in 12 good varieties	0 6 0
Finest Mixed	per dozen 5*s.*, per 100 1 15 0
Fine Mixed French Seedlings	per dozen 3*s.*, per 100 1 1 0
Mixed	per dozen 2*s.*, per 100 0 12 6

SUTTON & SONS,

THE QUEEN'S SEEDSMEN, READING.

RHODODENDRONS.

FINE NAMED LEADING KINDS, 1½ to 3 feet, from £7 10*s.* to £10 10*s.* per 100.

HYBRID SEEDLINGS, leading kinds, 1½ to 3 feet, from 50*s.* to 75*s.* per 100.

ANDROMEDA FLORIBUNDA, 1 foot, from 50*s.* to 60*s.* per 100.

KALMIA LATIFOLIA, 1 to 1½ feet, from 50*s.* to 60*s.* per 100.

AZALEA PONTICA, 1 to 1½ foot, from 60*s.* to 75*s.* per 100.

All the above are very fine bushy, well grown plants, and are offered very cheap to effect a clearance.

CHARLES NOBLE, BAGSHOT

E. G. HENDERSON & SON'S NEW DESCRIPTIVE SEED CATALOGUE

Contains many Novelties, and nearly 300 Illustrations of Plants and Flowers.

CYCLAMEN PERSICUM MONSTROSA PLENO, 2*s.* 6*d.* and 5*s.* per packet.
CONVOLVULUS MAJOR PICTURATA TRICOLOR, 1*s.*
BEGONIA, Double-flowered, 5*s.*
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PRIMULA SINENSIS FLORE PLENA, 2*s.* 6*d.* and 5*s.*
" MAIDEN'S BLUSH, Double-flowered, 5*s.*
"LUCY GRIEVE" PEAR, First-class Certificate, see above Catalogue.
VINES and BULBOUS-FLOWERED ROOTS, suitable for this Season's Planting and Bloom: see the Catalogue.

The Wellington Nursery, St. John's Wood, London, N.W.

HOOPER'S SPECIAL NOTICES

THE NEW POTATO, "RUBY," eclipses all other red-skinned sorts, and combines excellence of flavour and flouriness in a manner as perfect as can be desired by the most fastidious. Price 4*s.* per lb.

"ALPHA" POTATO.—Splendid early variety, 3*s.* 6*d.* per lb.; 7 lb. for 21*s.*

HOOPER AND CO., Covent Garden, London, W.C.

Vegetable & Flower Seeds

Seed Potatos, Garden Tools &c

Superior quality, Carriage free

Descriptive Priced list post free,

James Dickson & Sons

"Newton" Nurseries and

108, Eastgate Street,

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Seeds

FLOWERS ALL THE YEAR ROUND obtained by sowing one of the HEATHERSIDE NURSERIES COMPANY'S 10*s.* 6*d.* COLLECTIONS—Carriage Free. CONTAINS:—

ASTERS, 12 splendid varieties; STOCKS, 12 splendid varieties; HARDY ANNUALS, 12 splendid varieties; EVERLASTING FLOWERS, 6 splendid varieties; HARDY PERENNIALS, 6 splendid varieties; FANCY GRASSES, 3 splendid varieties; TENDER ANNUALS, 12 splendid varieties; MIGNONETTE, 1 oz.; SWEET PEAS, finest mixed, 2 oz.

For Vegetables all the Year Round, order their 21*s. Collection, the largest and best ever offered.*

ADDRESS: 59, QUEEN VICTORIA STREET, E.C.

TO POTATO PLANTERS.

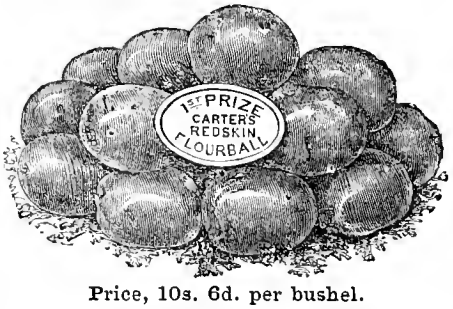
CHANGE OF SEED.

JAMES CARTER & CO.

ARE PREPARED TO SUPPLY THE FOLLOWING POPULAR AND CHOICE VARIETIES AT GREATLY REDUCED RATES PER HALF-TON OR TON.

English Varieties.

	Per bushel—*s. d.*
Carter's Main Crop	12 0
Carter's Champion	17 0
Rivers' Royal Ashleaf	14 0
Myatt's Ashleaf	12 0
Walker's Regent	9 6
Paterson's Victoria	10 6
Hundredfold Fluke	14 0
King of Potatos	12 0



American Varieties.

	Per bushel—*s. d.*
Early Rose	10 6
Late Rose	14 0
Vermont Beauty	12 6
Compton's Surprise	12 6
Peachblow	14 0
Bresee's Prolific	12 0
Bresee's Peerless	12 0
Breadfruit	21 0
Early Goodrich	10 6
Extra Early Vermont	12 6
Climax	12 0

Price, 10s. 6d. per bushel.

HALF TON AND TON PRICES ON APPLICATION.

CARTER'S (The Queen's Seedsmen), 237 and 238, HIGH HOLBORN, LONDON, W.

IMPORTANT SALE OF SPECIMEN STOVE AND GREENHOUSE PLANTS.

MR. J. C. STEVENS has received instructions from Mr. MORSE, of the Original Nurseries, Epsom, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, March 28, at half-past 12 o'Clock precisely, the whole of his well-grown EXHIBITION PLANTS, among which will be included magnificent specimens of Ericas, Azaleas, New Holland and Stove Plants, Orchids, Ferns, &c.

N.B. The whole of the Plants are tied ready for Exhibition Purposes, and have been exhibited by Mr. MORSE with great success at all the Metropolitan and principal Provincial Shows.

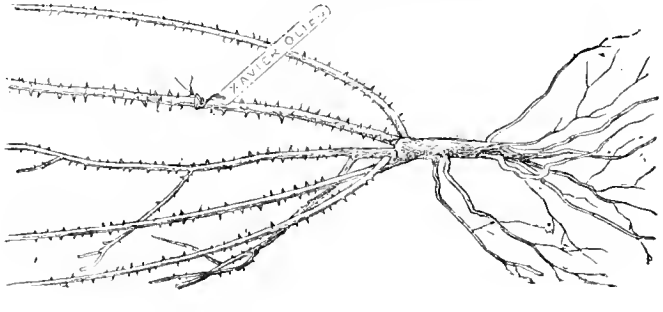
On view the morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

THE OXFORD ROSES.

DWARF PLANTS ON CULTIVATED SEEDLING BRIAR.

Five Thousand carefully lifted last Autumn for the special purpose of late Spring Planting.



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BUSINESS ESTABLISHED, 1770.

TO THE TRADE.—SEED POTATOS.

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THE FOLLOWING VARIETIES OF SEED POTATOS,

Grown from the finest selected stocks, and free from disease.

RIVERS' ROYAL ASHLEAF KIDNEY,
ALMA KIDNEY,
NEW KING of the FLUKES,
HUNDREDFOLD FLUKE,
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BROWNELL'S BEAUTY,
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SEED GROWING ESTABLISHMENT, WISBECH.

REDUCTION IN PRICES OF

YOUNG'S GOLDEN CHINESE JUNIPER

(JUNIPERUS CHINENSIS AUREA).

"The finest Golden Conifer of the day."

IT HAS BEEN EXHIBITED AT THE FOLLOWING SOCIETIES' SHOWS, WHEN THE HIGHEST HONOURS WERE AWARDED TO IT:—

Royal Horticultural, Aug. 2, 1871, First-class Certificate.
Crystal Palace, Aug. 5, 1871, First-class Certificate.
Manchester Horticultural, Sept. 10, 1872, First-class Certificate.
Glasgow and West of Scotland International Horticultural, Sept. 11, 1872, First-class Certificate.
Société Royale d'Agriculture et de Botanique de Gand, March 3, 1873, First-class Silver Medal.

On each occasion receiving the highest encomiums.

	£	s.	d.	
4 to 6 inches	5	0	0	per 100.
6 to 9 „	7	10	0	„
9 to 12 „	10	0	0	„
12 to 15 „	12	10	0	„
15 to 18 „	42s. to 3	0	0	per doz.
SPECIMENS, 1½, 2, 2½, and 3 feet ...	10s. 6d., 21s., 31s. 6d., 42s., and 63s. each.			

NEW RHODODENDRONS.

BIANCHI, | LADY WINIFRED HERBERT, | SALVINI,
CAPTAIN WEBB, | MRS. GEO. BROWN, | WM. MILTON.

☞ The above Rhododendrons having been thoroughly tested for several seasons can be confidently recommended to purchasers as really distinct and hardy late-blooming varieties, combining all the qualities most desirable in this attractive class of plants. They are now offered in good plants:—

First Size, nice Plants, £2 12s. 6d. the set. Second Size, bushy, about 1½ foot, £3 15s. the set. Third Size, bushy, ½ to 2 feet, £5 5s. the set.

NEW AUCUBAS.

AUCUBA YOUNGII (Male and Female).

These are without doubt the finest varieties of Aucuba at present known. They are the result of crossing "A. ovata," the dwarf-growing species, with "A. viridis," the strong growing green one. They are of very robust habit, yet compact in growth; the foliage is large, nearly round in shape, of great substance, and a rich deep shining green. The fruit on the female plant is very large, and of a deep blood-red. It received a First-class Certificate at the Royal Horticultural Society's Meeting, on March 19, 1873, and is described in the *Gardeners' Chronicle* as "a fine variety which has received a First-class Certificate for its dense habit, fine dark leaves of great substance, and large deep crimson fruit." They are valuable acquisitions to our hardy evergreens, and when known will demand a place in every collection, and will be universally planted in every garden and shrubbery where a really fine ornamental evergreen is a desideratum.

Strong Plants in pots, 5s. each: 42s. per dozen.

MAURICE YOUNG, MILFORD NURSERIES, near GODALMING.

FIRST PRIZE ROSES,

FROM

CRANSTON'S NURSERIES, HEREFORD.

Try our One Guinea, Two Guinea, and Three Guinea Collections.

ONE GUINEA COLLECTION contains Thirty Selected First-class Show Roses.

TWO GUINEA COLLECTION contains Sixty Selected, Distinct, and all First-class Show Roses.

THREE GUINEA COLLECTION contains One Hundred of the Finest Roses, New or Old, in cultivation, Selected from upwards of 600 Varieties.

Either of the above Collections will be carefully packed and forwarded, on receipt of Cheque or Post-office Order payable to

CRANSTON & MAYOS, HEREFORD.

N.B. Upwards of Fifty First Prizes, including the 25 Guinea Silver Challenge, open to all England, were awarded to us in 1875.

TREES AND SHRUBS ON SALE.

B. WHITHAM,

The Nurseries, Reddish, near Stockport,

Has still a large quantity of the following fine, healthy, extra transplanted Trees and Shrubs to offer, at specially low prices:—

BEECH, ranging from 2 to 10 feet.
POPLARS, in sorts, from 3 to 10 feet.
ENGLISH YEWS, 1 to 4 feet.
RHODODENDRONS, 6 to 9 and 9 to 12 inches.
„ 1 to 1½ foot, and 1½ to 2 feet.

Must be sold: no reasonable offer refused.

THE KNAP HILL CYPRESS,

Cupressus Lawsoniana erecta viridis.

ANTHONY WATERER

Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices:—

3 feet high, 2½ feet in circumference, 30s. per doz.
4 feet high, 3 to 4 feet do., 42s. to 60s. per doz.
5 feet high, 4, 5 and 6 ft. do., 10s. 6d., 15s. to 21s. each.
6 and 7 feet high, 6 to 7 and 8 ft. do., 21s. to 31s. 6d. each.

No cuttings have been taken from the plants here referred to, which are simply perfect in growth and splendidly rooted.

KNAP HILL NURSERY, WOKING, SURREY.

HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

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XANTHOCERAS SORBIFOLIA.

First-class Certificate Royal Horticultural Society, March 15, 1876.

THE

NEW PLANT and BULB COMPANY

Have much pleasure in offering the above extremely valuable hardy flowering Shrub.

For particulars of this and other choice Plants and Bulbs see SPECIAL LIST, free on application.

LION WALK, COLCHESTER.

JOHN CATTELL

BEGS TO ANNOUNCE THAT HIS

ILLUSTRATED CATALOGUE

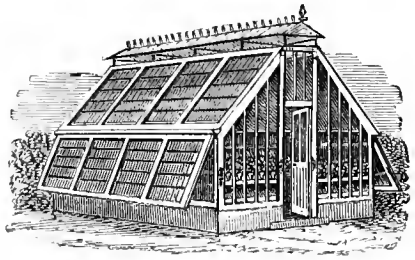
OF

KITCHEN GARDEN AND FLOWER SEEDS,

Including a Choice Selection of the latest Novelties for 1876,

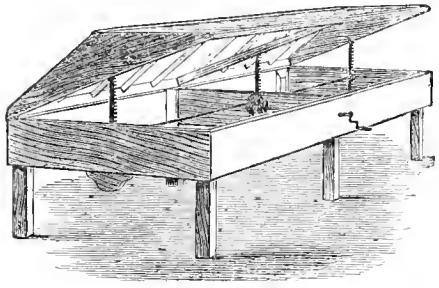
Is now ready, and will be forwarded gratis and post-free on application.

NURSERY and SEED ESTABLISHMENT,
WESTERHAM, KENT.

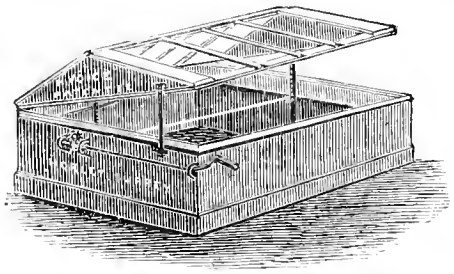


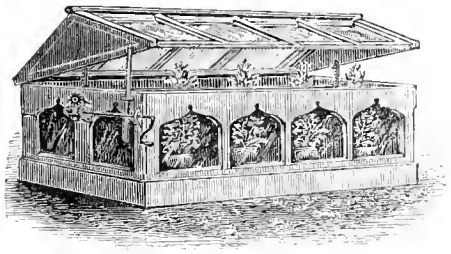
PLANS AND ESTIMATES.

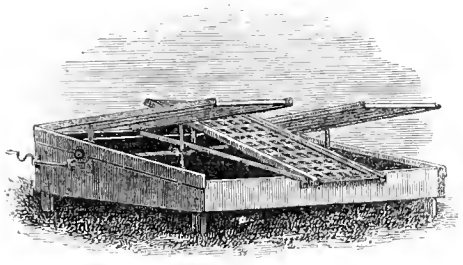
VOICE'S PATENT VENTILATING APPARATUS

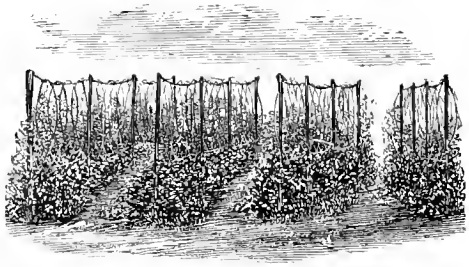


Fitted to the old-fashioned Sliding Lights of Garden Frames, which is a great saving of labour, and by which perfect ventilation can be secured without the Lights occupying more space than what the Frame stands on. The Apparatus can be applied to Sliding Lights of Conservatories and Greenhouses, and dispenses with the Cords and Weights.









Voice's Patent System of Training Peas and Beans.

FIFTY PER CENT. SAVED BY USING VOICE'S PATENT SCREWS

For Tightening Wires for Garden Walls, Peach-houses, Graperies, Conservatories, Cucumbers, Window Blinds, and Shop Fittings; also Inside Blinds for Conservatories and Skylights; for Beans, Peas, Raspberry Canes, and in every situation where wires are required to be tightened. This system of straining wires dispenses with nuts, swivels, and the French Raidisseurs, and can be done at one half the cost of other systems. The arrangements are so simple that it can be done by inexperienced hands; in fact, no gardener should be without them.

Patent Screws for Tightening Wire, at per dozen:

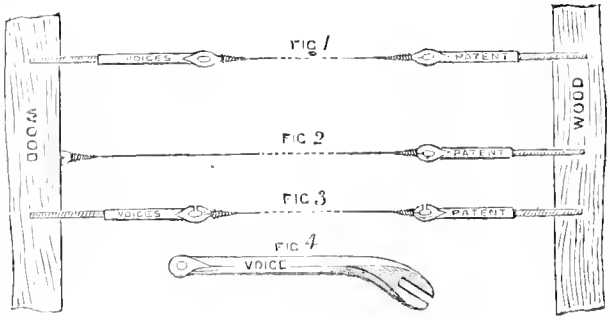
2 inches	long	..	..	..	..	..	1s. 0d.
2½	,, ,,	..	..	..	..	..	1 3
3	,, ,,	..	..	..	..	..	1 6
3½	,, ,,	..	..	..	..	..	1 9
4	,, ,,	..	..	..	..	..	2 0
5	,, ,,	..	..	..	..	..	2 3

Keys, 4d. each.

Common Screws for Fixing into Rafters or Intermediate Places, at per dozen:—

2 inches	long	..	..	..	..	..	0s 9d.
3	,, ,,	..	..	..	..	..	0 10½
4	,, ,,	..	..	..	..	..	1 0
5	,, ,,	..	..	..	..	..	1 1½
6	,, ,,	..	..	..	..	..	1 3
7	,, ,,	..	..	..	..	..	1 4½
8	,, ,,	..	..	..	..	..	1 6
9	,, ,,	..	..	..	..	..	1 7½
10	,, ,,	..	..	..	..	..	1 9
11	,, ,,	..	..	..	..	..	1 10½
12	,, ,,	..	..	..	..	..	2 0

(All Galvanised)



DIRECTIONS. — First place the screw a short distance into the wood; then attach the wire to the screws, and by the simplest process of turning the screws with the key (No. 4), the wires are tightened, and straightened at the same time.

No. 1. Represents two Patent Screws, by which wires may be strained a distance of from 50 to 100 feet.

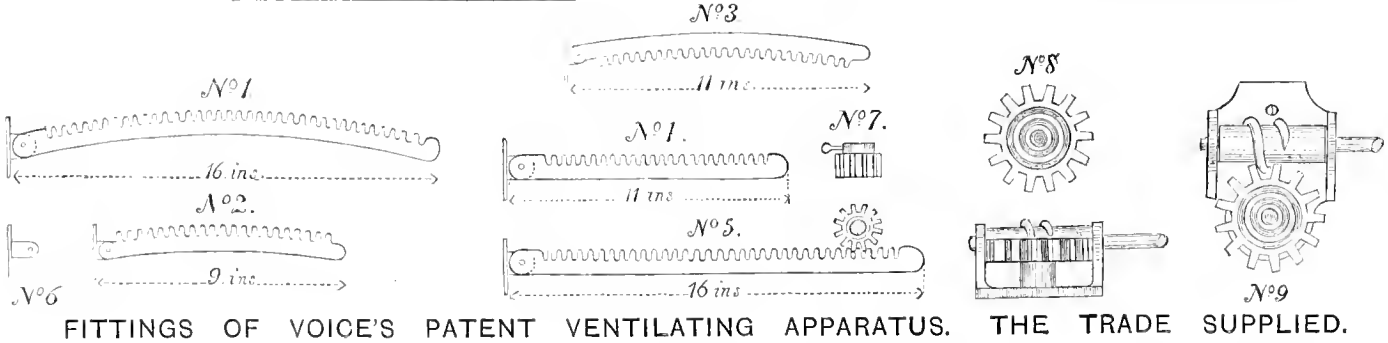
No. 2. Screws are for shorter lengths, fixed with staples.

No. 3. Are Hook Screws, suitable for shop windows, or any situation where the wires are required to be often removed.

No. 4. Is the Key for Tightening or Slackening the Screws.

☞ A reward will be given to any person who shall give information of parties infringing this patent.

14 Guage Steel Wire (Galvanised) supplied at 1s. per 100 feet. Wires fixed 6 inches apart on Garden Walls, also in Conservatories, Vineries, &c., including all Materials and Labour, at 9d. per yard super.



FITTINGS OF VOICE'S PATENT VENTILATING APPARATUS. THE TRADE SUPPLIED.

Showyard: 56, 57, and 58, LONG LANE, BERMONDSEY,

WITHIN FIVE MINUTES' WALK OF LONDON BRIDGE.

ORCHIDS

At unprecedentedly low prices.

MR. WILLIAM BULL

Is constantly receiving Importations from his Collectors and Correspondents abroad, and offers the following at the low prices annexed :—

	£	s	d
ACINETA BARKERI	0	5	0
AERIDES CRISPUM	0	7	6
ANGRÆCUM PERTUSUM	0	7	6
ANGULOA CLOWESII	0	7	6
BRASSIA CINNABARINA	0	15	0
*CALANTHE VEITCHII	0	15	0
„ VESTITA LUTEO-OCULATA	0	5	0
„ VESTITA RUBRO-OCULATA	0	5	0
CATTLEYA CITRINA	0	5	0
„ QUADRICOLOR	1	1	0
„ TRIANÆ	0	10	6
„ WARNERI	1	1	0
„ WARSCEWICZII	0	15	0
*CYMBIDIUM EBURNEUM	3	3	0
CYPRIPEDIUM BARBATUM PURPUREUM	0	7	6
„ HIRSUTISSIMUM	0	15	0
„ NIVEUM	0	5	0
„ VILLOSUM	0	15	0
DENDROBIUM CAMBRIDGEANUM	0	10	6
„ CHRYSANTHUM	0	10	6
„ CRETACEUM	0	5	0
„ CRYSTALLINUM	0	15	0
„ DENSIFLORUM	0	10	6
„ DEVONIANUM	0	3	6
„ FALCONERI	1	11	6
„ FORMOSUM GIGANTEUM	1	1	0
„ MACROPHYLLUM	0	15	0
„ PARISHII	0	10	6
* „ PIERARDII	0	5	0
„ SENILE	0	7	6
* „ SPECIOSUM	0	5	0
„ THYRSIFLORUM	0	10	6
* „ WARDIANUM	2	2	0
EPIDENDRUM DICHROMUM	0	7	6
„ MACROCHILUM	0	7	6
*LÆLIA ALBIDA	0	7	6
„ AUTUMNALIS	0	10	6
* „ FURFURACEA	0	15	0
„ MAJALIS	0	10	6
„ PURPURATA	0	15	0
*LIMATODES ROSEA	0	3	6
LYCASTE GIGANTEA	0	15	0
„ SKINNERI	0	10	6
MASDEVALLIA HARRYANA	1	1	0
MAXILLARIA NIGRESCENS	0	5	0
MESOPINIDIUM SANGUINEUM	0	15	0
ODONTOGLOSSUM ANGUSTATUM	1	11	6
* „ BICTONIENSE	0	7	6
„ CITROSMUM ROSEUM	0	10	6
„ CRISPUM (ALEXANDRÆ)	0	12	6
„ CRISTATUM	0	15	0
„ DAWSONIANUM	0	10	6
„ HASTATUM	0	7	6
„ HASTILABIUM	0	10	6
„ INSLEAYI LEOPARDINUM	0	7	6
„ LINDENI	1	1	0
„ LINDLEYANUM	0	7	6
„ LUTEO-PURPUREUM	0	15	0
* „ PULCHELLUM GRANDIFLORUM	0	15	0
„ RAMULOSUM	0	10	6
„ UROSKINNERI	0	10	6
ONCIDIUM AURIFERUM	0	15	0
„ LEUCOCHILUM	0	12	6
„ STELLIGERUM	0	7	6
* „ TIGRINUM	0	7	6
„ TRIQUETRUM	0	7	6
*PHALÆNOPSIS AMABILIS	2	2	0
* „ SCHILLERIANA	2	2	0
*PLEIONE MACULATA	0	7	6
* „ WALLICHIANA	0	7	6
SACCOLABIUM BLUMEI MAJUS	0	7	6
„ CURVIFOLIUM	0	10	6
*SOPHRONITES GRANDIFLORA	0	10	6
WARSCEWICZELLA VELATA	0	15	0
UROPEDIUM LINDENI	1	11	6

*Those marked * are winter-blooming.*

GOOD SELECTIONS OF ORCHIDS made, at 2, 3 and 4 guineas per dozen.

☞ By sending names of those already possessed, different varieties can be given, and purchasers will have a good selection made for them.

Establishment for New and Rare Plants,
KING'S ROAD, CHELSEA, LONDON, S.W.

Sutton & Sons

CHOICE FLOWER SEEDS,

FREE BY POST OR RAIL.

Sutton's Collections of Choice Flower Seeds, to produce a beautiful and continuous display during Summer and Autumn.

	£	s	d
No. 1 Collection, Free by Post or Rail	2	2	0
No. 2 Collection „ „	1	11	6
No. 3 Collection „ „	1	1	0
No. 4 Collection „ „	0	15	0
No. 5 Collection „ „	0	10	6

Small and Useful Collections can also be had, from 2s. 6d. to 7s. 6d. Free by Post.

Complete Instructions as to the Cultivation of Sutton's Choice Flower Seeds will be found in

"SUTTON'S AMATEUR'S GUIDE,"

The most practical work on gardening yet published, beautifully illustrated with 300 engravings.

Price 1s., post-free for 14 stamps. Gratis to Customers.

TO OBTAIN THE

Best Garden Lawns and Croquet Grounds

SOW

SUTTON'S

LAWN GRASS MIXTURE,

Which forms a close velvety turf in a very short time. For making New Lawns or Croquet Grounds 3 bushels or 60 pounds is required per acre, or 1 gallon to every 6 rods (or perches) of ground.

For improving those already in turf, 20 pounds should be sown per acre.

March, April, and May are the best months for sowing.

Price 1s per lb.; 20s. per bushel.

From Mr. J. MERRICK, *Gardener to* S. Forster, Esq., *Le Court.*

"The Seed you sent me last year turned out uncommonly well. Several gentlemen who came to Le Court could scarcely credit, from the appearance of the lawn, that it was only sown in May. In August it was as fine and thick as I have seen some lawns that had been laid down for three years."

Instructions on the Formation and Improvement of Garden Lawns and Croquet Grounds Gratis and post-free.

THE QUEEN'S SEEDSMEN, READING.

SATURDAY, MARCH 25, 1876.

POPULAR GARDEN TEACHING.

IT comes as a pleasant novelty to have to write of a horticultural matter in connection with the Royal Horticultural Society. Of late years gardening matters, the main objects of the Society, have, perforce, been more or less neglected in the struggle to maintain bare existence in the desert of South Kensington and amid the unsympathising and often hostile acts of the denizens of that locality. In this way the poor old Society has had to bear the unmerited obloquy of the public, who, as a rule, are quite unaware of the real merits of the disputes and wrangles they have read so much of. It is annoying to those who know how much has been done at Chiswick, and even at South Kensington, under the most disheartening circumstances, to find the public in entire ignorance of it, and abusing the Society without sufficient reason. We have, nevertheless, always felt strongly that, if the Society is to redeem itself in the eyes of the public, it must do so by doing its own legitimate work—by proving itself an institution of national importance, an establishment, as the French would say, of public benefit. We do not wish to assert that flower shows are not beneficial to the public, or that they are not of advantage to horticulture—quite the contrary ; but we do say that a Society that makes shows almost its only aim and object fails in its duty. Flower shows are only one way of promoting a taste for and of extending a knowledge of garden industry, and the benefits, material and æsthetic, that arise from its cultivation.

The scheme proposed by the Council (see p. 402) for instituting a series of practical demonstrations at Chiswick will do much good by enlightening the public not only as to the true aims and objects of horticulture, but as to what has been done by the Society, and what could be done in the future, if the horticulturists were free from the incubus of debt and difficulty imposed on them by their unfortunate connection with South Kensington.

The proposal is to explain and demonstrate the common operations of gardening to those of the Fellows who may be desirous of picking up a little gardening information in a pleasant, practical, and efficient form. Provided the plan can be efficiently worked we have nothing but great gratification to express at the proposal. It is just possible that the scheme may meet with popular favour, and that it may become fashionable for sweet girl-graduates at Chiswick to sow seeds, strike cuttings, thin out Grapes, bud Roses, and the like, and to be witnesses of other operations not so suited to their tender "habit."

Our impression is that the why, the how, and the when, of the principal gardening operations should be explained in as elementary, as clear and as agreeable a manner as possible In the case of striking cuttings, for instance, the instructor should, as it seems to us, explain for what purpose the operation is done, on what general principles as to plant structure and to plant life the operation depends—what circumstances are favourable, what adverse to it, and so on. Then the cutting should be taken off, prepared, inserted, shaded and so on under the eyes of the pupils, who should then imitate for themselves what they have seen done. We

should lay great stress on inculcating general principles—the "why" of each operation—because if this be understood the "how" is a mere matter of practice. Again, if we understand rightly, the scheme is proposed mainly for the benefit of those who have to superintend others, and who are not likely to have to take to gardening as a means of livelihood.

If the scheme be well considered and well carried out, it is fair to hope that many will be found willing to acquire information on a subject to most people of as great importance as agriculture or estate management. To ladies also gardening would open up new resources and new pleasures. The greatest benefit, however, as we take it, would be indirect. It would afford a means of showing how much gardening does, not only for the luxuries of the rich, but for the necessities and the comforts of the poor. It may be a means of diffusing a more general knowledge of gardening, vegetable-growing, fruit-culture, and the like, among the villagers and cottagers in our country districts, and in the allotment gardens near towns. It may be the means of disseminating information as to the best varieties to grow in different localities, and the appropriate method of treatment. But the possible results will suggest themselves to every reader. We do but echo the wish of all who know the capabilities of gardening as a material benefit or a healthy recreation—that this last scheme of the Royal Horticultural Society may prove successful.

New Garden Plants.

ONCIDIUM METALLICUM, *n. sp.**

This is a surprising novelty. It is one of the "Cyrtochila labello elongato sepalisque auriculatis." The shape of its lip is so peculiar, that one might make a new group of it, since it is pandurate, normal at its base, with an angle projecting from each side, an isthmus in the middle, a hastate blunt blade before. An interesting feature is, too, that the wings of the column are covered with warts, cut in various manners. I never saw such a case before, though it may occur in species we only have seen in a dried state, where one is never so nice about such questions, since prominences may be the consequences of the process of drying. One may say our plant stands between Oncidium aemulum and O. annulare. The former is a splendid thing, with an acute lip, and shorter and wider sepals and petals; the latter has a very different crest, with many finger-like processes at the sides, and the curved petals are just connected at their tops as if they were forming a ring; hence the name. The flowers of our species are equal to those of Oncidium aemulum. They belong, therefore, to the grandest of the section. Their colour is a rich chestnut-brown with a splendid metallic hue. The borders of the short, ovate, broad, superior sepal and smaller petals are blotched with rich yellow. The long-stalked lateral sepals have some much lighter insignificant yellow at their tops. The callus is whitish. It is very exceptional that this species bears also auricled petals. My opinion is, that this species is one of the best of the Cyrtochilas. It was discovered in New Grenada by M. Wallis. He dried no flowers. The living plant has lately flowered with Messrs. Veitch, who favoured me with fresh blooms. *H. G. Rchb. f.*

MILTONIA WARSCEWICZII, *Rchb. f.*

This plant, also known as Odontoglossum Weltoni, Oncidium Weltoni, and Oncidium fuscatum, has proved an *enfant chéri* of Orchidists. When I had the satisfaction to hear of it the first time in these columns (March 26, 1870, p. 417) I alluded to the very numerous variations the plant shows in colours, so that I had then never twice seen the same variety. That great propensity to variation the species appear to have is also expressed by the various expansion of its flowers. I was struck with certain dwarf flowers I obtained from M. Roezl, which do not exceed the flowers of common Oncidium sphacelatum. Now, to my great astonishment, I have just obtained the opposite case—a giant flower, equalling a large flower of Miltonia candida. It belongs to that beautiful variety with deep brown sepals and petals, tipped with whitish yellow and a broad purplish lip, showing a yellow mirror and a white border, just the same as appeared the first time at Reigate with Mr. Wilson Saunders. I have to thank for this great beauty Mr. S. B. Michael, Cholmely Park, Highgate, London. It is grown by Mr. Frederick Newman. *H. G. Rchb. f.*

LÆLIA FLAMMEA, *H. G. Rchb. f.*; *Gard. Chron.* 1874, i. 599.

I have at hand an inflorescence of four flowers, of rich deep orange, with the middle lobe of the lip deep purple. When I obtained the first flower, I think three or four years ago, I did not expect such a grand thing, so unrivalled in its colour and shape among the known Lælias, and totally beating such species as the rare L. grandis. Of all the Sedenian hybrids, to my taste this and Cypripedium Sedeni are by far the most meritorious. They have a good general shape, and are quite novel in the genera, in their bright shining colours. The flowers of this Lælia are equal to those of a medium-sized Lælia anceps. *H. G. Rchb. f.*

* *Oncidium metallicum*, H. G. Rchb. f.—Cyrtochila labello elongato, pandurilabium; sepalo summo brevius unguiculato cordato elliptico crispulo; sepalis lateralibus longius unguiculatis cuneato-oblongis acutis; tepalis brevissime unguiculatis superne auriculatis hastato triangulis crispulis, labello panduriformi constricto, dein hastato oblongo obtuso; columna recurva auriculis bi- quadrifidis papulosis.—New Grenada.

PIERREMONT PARK SOUTH,

THE SEAT OF HENRY PEASE, ESQ., NEAR DARLINGTON.

PIERREMONT PARK SOUTH is about a mile distant from the centre of the town of Darlington. The entrance is quite enough to enable the mind's eye to picture what may be expected within. The floor itself seemed to convey the idea of "touch-me-not," being laid with mosaic tiles of a most beautiful pattern. Just within the entrance stands a desk and visitors' book, where visitors to the grounds record their names either on entering or leaving. Although the book seemed quite a new one, I noticed some hundreds of names from all parts of Britain and numbers from abroad, showing the interest horticulture is exciting in the minds of the people. The first object of interest on entering the grounds is a most useful range of glass, most neatly and practically put together, and thoroughly heated for the purpose for which they are designed. The first is a Melon-house, 36 by 12 feet, and the second is a Cucumber-house, 30 by 12 feet, the plants being all trained on wire trellis to the roof, showing how admirable the system is for the development of those fruits. There was an excellent crop over both houses. Each plant had its proper name printed on a neat label in front of it.

The above two houses are divided from each other by a very handsome greenhouse. In it were some very good specimen plants, and many of the best Pelargoniums of the day, remarkably well-grown and in beautiful flower, among which the following were very superior:—Mrs. Hole, Corsair, Colonel Holden, Edward Sutton, Mrs. Turner, Harry King, Mrs. Nelson, Moor of Venice, Mrs. Vincent, Laurence Heywood, Acme, J. McIndoe, and Mrs. A. Miles. The upper kitchen garden here is about an acre in extent, well studded with wall and pyramid fruit trees. Each tree had its proper name plainly printed on a label, and placed in front of it. This system of naming all plants outside and inside is carried out most systematically by Mr. Barclay, the gardener, who attaches great importance to it. From the finest plants on the place down to the most common, all have their proper names placed to them. The fruit trees which do best here are found to be as follows:—

Pears.—Seckle, Monarch, Beurré d'Amanlis, Belle de Jersey, Beurré Diel, Doyenné du Comice, Citron des Carmes, very fine; Clipp's Favourite, Louise Bonne of Jersey, Jargonelle, Beurré Giffard, Glou Morçeau, Passe Colmar, Doré, Duchesse d'Angoulême, Fondante d'Automne, Williams' Bon Chrétien, Easter Beurré, Beurré Bosc, Beurré Bachelier, Catillac, Marie Louise, Van Mons Léon Leclerc, Urge; Hacon's Incomparable, fine; Beurré de Capiaumont, very fine.

Apples.—Cornish Gilliflower, Warner's Pippin, New Hawthornden, Court of Wick, Lord Suffield, Stirling Castle, Rose Hill, Sturmer Pippin, Ribston Pippin, very fine; Golden Pippin, fine; Keswick Codlin, Warner's King, very large; Yorkshire Greening, Cox's Orange Pippin, very fine, above average size. The above are all pyramidal fruit trees.

Wall Trees.—Pears: St. Germain, Van Mons Léon Leclerc, Williams' Bon Chrétien, fine; Marie Louise, very fine; Beurré Diel, Beurré de Capiaumont, Beurré Rance. Plums: Green Gage, Coe's Golden Drop, fine; Caledonian, large and fine; Victoria. Apricot: Moorpark, very good. Morello Cherries, great crop and large.

The next great object of attraction as one leaves the kitchen garden is a handsome fountain. The centre stands above 20 feet in height, with handsome moulded basins. I had the pleasure of seeing this exquisite work of art in full play. There are twenty-one jets in all. These fall into the lower and main basin, which is 37 feet in diameter, the circumference being divided by twelve pillars, on each of which is placed a vase, expressly designed for this fountain, and called the Pierremont Vase. These were filled alternately with variegated Yuccas and Dracæna terminalis. Attached to this fountain are what are called pockets or loops for decorative plants—bulbs in spring, and bedding plants in summer. At the time of my visit they were very gay and effective. The flower-beds around the fountain are laid out in grass, which gives a chaste and elegant appearance to the whole. The lake, though not of large dimensions, is certainly one of the best that it has been my good luck to see—not a shadow of stiffness or formality about it. Around its sides very appropriate masses of rockwork have been placed, giving the whole a very natural appearance.

The island also is well placed and executed, and, with its appropriate vegetation, looks extremely effective. I also noticed gas-lamps, which are lighted up in winter for the convenience of skaters. The rustic stone bridge, and the masterpiece of all, the boat cave, as natural as Dame Nature herself could have made it, next claimed attention; I was indeed much struck with this beautiful piece of workmanship, its fine boat and its waterfall, which supplies the lake. On the ground which finishes this rockery it is intended to construct an arrangement of alpine plants, which will afford ample scope for botanical study. We next come to what is called the south department of the grounds, on entering which two striking features are apparent. One is the Rose arcade, a wire arch 245 feet long, 14 feet wide, and 10 feet high, planted with the best assortment of climbing and the strongest-growing Hybrid Perpetual Roses in cultivation. From the centre of this arcade wire baskets are suspended, and these, filled with their summer occupants, look very effective. In a few years this will be a delightful covered promenade.

A ribbon border, 4 feet wide, runs the whole length on either side of this Rose arbour. On one side of this is the new semicircle style of espaliers in two rows, each the same length as the Rose arcade. The width is 7 feet, and the height 5 feet. The preparation of the ground was as follows:—Drainage to the depth of 4½ feet, drains 18 feet apart, and trenching to the depth of 2½ feet. At the bottom a continuous layer of broken stones, hand-laid to the depth of 1 foot. Over this was laid 1 foot of turf, and then it was filled up with the garden soil. This, as will be readily seen, gives the ground a thorough draining. The trees were planted late in April, 1874, and several of them bore fruit the same year. This year they have given ample proof of the efficacy of this system. The sorts of Apples and Pears that were in full bearing at the time of my visit were everything that could be wished for or desired, and have taken leading honours at the local shows. Their names were as follows:—Apples: King of Pippins, Melon Apple, Reinette du Canada, Scarlet Nonpareil, Claygate Pearmain, Tower of Glamis, Monarch, Margil, Adam's Permain, Alfriston, Hughes' Golden Pippin, Emperor Alexander, Lord Suffield, Williams' Paradise Pippin, Manx Codlin, Cox's Orange Pippin, Ribston Pippin, New Hawthornden, Cellini, Golden Harvey, Cox's Pomona, Early Julian, Red Ingestre, Reinette Blanche d'Espagne. Pears: Colmar d'Aremberg, Thompson's, Triomphe de Jodoigne, Prince of Wales, Beurré Superfin, Colmar Nélis, Fondante d'Automne, Williams' Bon Chrétien. Cherries, as a rule, do well. I learned that in this department of the ground there is to be a fine rangeof glass erected shortly.

To the foregoing it may be added that at the south of these beautiful grounds stands Mr. Barclay's house, and certainly it is among the best it has been my good fortune to see. It is just what a gardener's residence ought to be, overlooking the whole of his charge. I ought also to note the neat carpet bedding in front of Mr. Barclay's house, which faces the public road, and attracts the attention of the people of Darlington very much as they pass and repass. The grounds, as a whole, were in the highest state of keeping in every department. Would that all employers took as much interest in horticulture as do Mr. and Mrs. Pease. From what I could see and glean from the high

appreciation in which they are held by the people under them, it is plainly evident that they derive happiness from the happiness of others. Mrs. Pease takes great interest in the education and well-being of the young in the neighbourhood. Pierremont is divided from Pierremont South by the highway running west from Darlington. It traverses a picturesque suburban district, and has for the length of a mile been planted with magnificent arbour trees for the public delectation, at the sole expense of the Messrs. Pease. I might still further add that the Pease family have long been prominent in the North of England, not only as liberal patrons of horticulture, but also as zealous promoters of all that tends to the moral elevation and social happiness of the people. Mr. Henry Pease, whose grounds at Pierremont Park South have here received a cursory notice, was for many years M.P. for South Darlington. Mr. Barclay informed me that the generous proprietor allows every respectable person that presents himself to view these beautiful gardens and grounds; and to the young gardeners especially I would say, Visit Pierremont when you have an opportunity. *John Downie, West Coates, Edinburgh.*

HOYAS.

The individual species of these fine flowering plants are very different in their appearance, as they also are in the treatment they require, from the Chinese H. carnosa and its variegated varieties, that will succeed in an ordinary greenhouse, the strong-growing heat-loving H. imperialis from Borneo, both of which are twiners, to the most elegant dwarf shrubby H. bella that hails from Taung Kola. They are very distinct and beautiful plants, easy of cultivation, and have the advantage over many things of a twining or climbing habit, in not being too rampant in growth, consequently the twining species are suitable for places where plants of larger size would be less manageable. They are appropriate for clothing pillars and rafters, or training longitudinally over the paths in the greenhouse or stove, according to the heat requirements of the different kinds. Grown in the latter position their flowers droop so as to be seen to the best advantage. In most of the species they are borne in bunches, upon stout persistent spurs, that issue from the base of the leaf-stalks at intervals up the stems. These make their appearance as the young shoots are formed, lasting for many years, and from them are emitted the flowers—two or three times in the course of the season in the case of some kinds. There is one matter that should be observed in the cultivation of these plants: that is, if the flowers are cut for bouquets or similar purposes, on no account should the spurs be removed with them, or it necessarily follows that the blooming capabilities are so far reduced as to be dependent for future supply on the formation of fresh spurs, which are only produced upon the young shoots. It is requisite to mention this for the guidance of beginners in the culture of Hoyas, as I have known large specimens, when in the hands of the inexperienced, completely stripped of their blooming spurs, which had taken years to form, causing them to be comparatively flowerless until fresh growths had been made—thus entailing much disappointment, as in most cases it necessitated the plants being headed down.

I propose treating, first, of the fleshy Hoya (H. carnosa) and the variegated varieties of this species, H. carnosa picta and H. carnosa variegata, which are similar in habit of growth, except that the two latter differ from the normal type in having variegated leaves. These will thrive in a greenhouse; they are medium growers, and may be either used for draping a pillar or rafter, or as trained specimens, in which case they are best grown on a wire trellis. They strike freely at almost any time of the year, but if put in about April get well established in their pots before the summer is over; if at this time cuttings are made from the preceding summer's shoots, using two, three, or more joints, and they are inserted singly in 3-inch pots in half loam and sand, they will root in a few weeks placed in a temperature of 65°. They need not be kept nearly so close as things with softer leaves, that would flag if not in a confined damp atmosphere. When well rooted, move them into 6-inch pots. They will grow in almost any description of soil, but loam is the most suitable, as it is not so liable to get sour as peat is; it should be of a turfy nature, and have a liberal quantity of sand added, for although the plants are anything but of a tender nature, still if the soil ever gets in a condition that the water cannot pass freely from it the roots are almost sure to perish. They will now do in a greenhouse, but if it is necessary to grow them on quickly, and there is the convenience, they will make more progress in an intermediate temperature, yet they do not do so well in the close damp atmosphere of an ordinary stove, as the growth under such conditions is longer jointed, with less disposition to form flower spurs. When the plants get growing freely they should be stopped, to encourage the production of several shoots. Now insert a few neat sticks inside the rim of the pots, round which train the shoots as they extend. All they require during the summer is plenty of light, with sufficient air and enough water to keep the soil in a moderately moist state. The nature of the leaves is not such as to need shade; if slightly syringed in the evening during the hottest part of the summer it will assist them. In the autumn the temperature may be reduced so as to keep them from 40° to 45° in the night through the winter, giving no more water to the soil than will keep it from getting so dry as to cause the leaves to become limp. If too wet at the roots during winter when subjected to a greenhouse temperature they are liable to suffer. Where there exists the means for keeping them in the winter in a temperature of 50° or 55° they will commence growing much sooner in spring; when the roots get fairly in motion they should have a 3-inch or 4-inch shift, according to the quantity of roots they are found to have. Again pinch out the points, to cause them to make more shoots. If the plants are intended for pot specimens it will still be better this season to train them round sticks rather than on a permanent trellis, as they will not yet be large enough to cover it in a way to look well. Treat through the summer and ensuing winter as advised for the preceding season, again giving them a 2 or 3-inch shift in the spring, and putting such as are required to be so grown upon moderate-sized, stout, galvanised wire trellises. Plants that are intended to clothe pillars, rafters, or walls may at this stage of their growth be trained into their allotted places; but, with things like these, that only make a moderate quantity of roots, it is better to confine them to pots than to plant out, as the soil can in after years be renewed more easily, and is less likely to get sour. There is also a much better chance for removal for cleaning should they get affected with any of the worst description of insects. The plants so managed will last for an indefinite number of years, and require nothing further to induce them to flower than plenty of light, accompanied with such other treatment as already advised.

The cause of these Hoyas not always growing and flowering satisfactorily is generally to be found in their being put in dark unsuitable situations, where few blooming plants, especially light-loving subjects, can be induced to do well. If a large plant happens to lose its roots from the common cause, namely, that of being too wet, it may be induced to make fresh ones from the stem above the soil by removing the leaves, if any are in the way, and tying an inch thick of sphagnum round it for a foot or so of its length, moving it to a warm somewhat confined atmosphere, keeping the moss damp and the plant syringed overhead daily to prevent the leaves shrivelling until roots are formed, after which place it in a pot that will just admit the newly-rooted stem and a little soil, supporting the head of the plant till it has got established, when it may as required be moved to a larger pot.

Amongst the twining species, that need a higher temperature to grow them, the foremost place is held by H. imperialis. This is a native of Borneo; it is a strong growing plant with ample thick leathery leaves, and bears very large bunches of pale brown and yellow flowers. With this may be associated in the general treatment they require, the Cinnamon-leaved Hoya, H. cinnamomifolia, a plant of medium growth, with pale green and chocolate flowers; the bell-flowered Hoya, H. campanulata, which bears greenish yellow flowers: both these from Java; and H. Cunninghamii, also a handsome species. These may be struck in the spring from cuttings of the mature wood treated as advised for H. carnosa, except that they, being indigenous to hotter countries, require not only a higher temperature to strike the cuttings in, but also to grow them afterwards. They will root in a temperature of 75°, but neither must these be kept too damp and close, or they are liable to rot before roots are emitted. When struck they should be allowed to get a fair amount of roots before being potted off. In the subsequent stages of their growth they will need considerably more pot-room than the H. carnosa varieties, and require a brisk heat to grow them in. In the spring, from the beginning of March, it should be about 65° in the night and 10° higher in the day; in May and through the summer let it be 5° or 10° more, according to the weather. Although these plants like a high temperature, with all the light that can be given them, doing the best when trained near the glass, yet they do not like so humid an atmosphere as the generality of the habitants of the stove: this is especially the case when the flowers are advancing, as also when open; if the air is then too much charged with moisture, or stagnant through an insufficient admission of air, the whole of the flowers will frequently fall off in a few days. Neither is it advisable to syringe overhead from the time the flowers first begin to move until after the blooming is completed, as this will sometimes produce similar effects. These Hoyas can also be grown as trained specimens when required, but so managed they want larger trellises than the first-named sorts; they likewise, even when grown on the roof or similar situations, are better in pots than planted out, keeping the soil and the atmosphere drier through the autumn and winter, to ripen the wood and induce rest; a night temperature of 60°, with 5° higher in the day, will be sufficient during the dormant season. The thick-leaved Hoyas will root and form plants from mature leaves put in whole, the base inserted in sand; kept warm and damp they soon root and make shoots.

H. bella and H. Paxtoni are small-growing shrubby plants of a half procumbent habit, their beautiful pearly white and pink flowers are produced freely in the spring and summer; they strike readily in spring from cuttings made of the points of the shoots, consisting of several joints, treated as described for the other sorts. These do not require large pots, such as are 10 or 12 inches in diameter will be found big enough for most purposes. Like all the species they must have plenty of light when growing, and not too much moisture either in the atmosphere or at the root. When flowering they require to be supported by a moderate number of neat sticks, otherwise the branches will lie quite flat, but they should by no means be subject to the stiff formal training sometimes seen by placing them on trellises, as it completely destroys the elegant appearance of the plants when allowed to assume more of their natural form. The pots wherein these two kinds are grown must be well drained; they like a moderate quantity of water both to the roots and overhead when growing, but must not receive too much in the winter. They will bear the shoots shortening in moderately after flowering, when the growth has got larger than is requisite. They should be kept in a temperature of 60° when at rest during the winter. Both these sorts are peculiarly adapted for growing in 8 or 10 inch pots suspended from the roof over the paths in the stove, where there is sufficient head room; the flowers in such a position are very effective.

Insects.—Thrips and red-spider will sometimes make their appearance upon them, especially if the atmosphere is kept very dry for a considerable time during the growing season; but a weak solution of Fowler's Insecticide, at 3 oz. or 4 oz. to the gallon, will be found an effectual cure. Scale and mealy-bug must be kept under by syringing with stronger applications of the insecticide; they will bear 6 oz. to the gallon when at rest, keeping it from getting to the roots. In the growing season syringe with clean warm water as well as sponge the leaves and shoots. *T. Baines.*

BRAEFIELD, LANARK.

This romantic place, the residence of — Walker, Esq., is situate on the banks of the Clyde, about a mile from the ancient county town of Lanark, and little more than the same distance from the celebrated "Falls of Clyde." The town itself forcibly reminds a stranger of ancient times and Scottish history, particularly the days of "Wallace," whose statue stands conspicuous in a niche above the entrance to the parish church; a little further on are the remains of the house where his wife was murdered, and opposite this the stables where his steeds were kept. These relics had, I was informed, been purchased by Government. But the snow was now a foot deep and falling rapidly, the wind was high and bitterly cold, and the object of my visit was chiefly "Orchidaceous," so that I may be excused from noticing further the features of the town or neighbourhood—the country, the cottages, and even the mansion-house of Braefield, with its surroundings, being still

quite in harmony with bygone times. But once under glass—ushered into a modern Orchid-house, where at the time of my visit (March 9) I found many plants in flower, what a change! The collection, as a whole, contains a rich assortment of species, also several splendid specimens, as will be noticed from the following list, the most remarkable being a plant of Dendrobium thyrsiflorum var. magnificum, and well it deserves the latter name, for I have never seen its equal; though a little past its best it then bore eleven noble racemes, each about 16 inches in length; the flowers also, for colour, size, and substance presented a remarkable contrast to the common form, which was also in fine flower in the same house; individually fine and well-grown it (the common form) becomes poor by comparison. The forms of this species are known amongst connoisseurs as green-stemmed and dark-stemmed varieties, the major forms being dark-stemmed, as was certainly strongly demonstrated in this case. Right and left of this were grand specimens of Dendrochilum glumaceum and Cœlogyne cristata, the former bearing 126 spikes, while the latter, a most luxuriant specimen, a yard across, and still in good bloom, has this season borne forty-two spikes, with as many in some cases as seven flowers on a spike.

Dendrobium Wardianum was also in grand style and variety, several plants having from four to thirteen flowers on a stem; the varieties of this species also vary much, but generally the large flowers lack the substance of the smaller ones, the colours being on a par; variety in this case must be left to indlvidual taste. Along with these, two plants of Dendrobium crassinode were at their best, and were it not for the thick-noded short growth it might be readily taken for a variety of D. Wardianum, the only apparent want being depth of colour at the tips of the petals, and the deep chocolate spots at the base of the lahellum.

The beautiful Cattleya Trianæ alba was also very fine, the flowers very large—a grand well established plant with six buds. A luxuriant plant of Cypripedium villosum, a yard across, was only bearing nine blooms, but for individual size I have never seen them equalled. This house also contains some good Vandas, one only, a tricolor, being in bloom; a good collection of Phalænopsis, P. Schilleriana, and P. amabilis were in bloom, the former well represented by some good varieties. Several plants of Zygopetalum crinitum, one of the finest representatives of a good old genus, afford a striking contrast to the more showy colours above mentioned. I also noticed several plants of rare interest in this house, likely to keep up a good display of novelty as the season advances. Amongst others, far too numerous to mention here, are the following:—A grand plant of the pure white Aerides suavissimum, also some of the other forms of the same species; Saccolabium giganteum, S. Blumei; Cypripedium pardinum, fine; C. brasiliense, a species lately imported, habit of caudatum; C. biflorum, C. niveum, C. Crossii, C. Parishii, C. caudatum, C. longifolium, particularly fine; C. violaceum punctatum, a species with the habit of villosum; C. Hookeræ, &c.; Dendrobium Bensonæ and D. chrysotis, also some good specimens of the commoner forms of this genus; Vanda Lowii, V. gigantea, bearing one fine flower-spike; V. Batemanni, 5 feet high, with one break; Angræcum sesquipedale, very fine; Oncidium curtum, O. crispum Marshallianum in strong force, as well as the common form; Cattleya Dowiana, C. marginata, and C. Mendelii; Lælia præstans, also fine; Cymbidium eburneum, &c. The imported plants lately bought at Stevens' and elsewhere promise a rich field of interest, there being many distinct-looking forms in this collection. Another house contains a collection of Disas—fragrans, purpurea and grandiflora—and the usual assortment of Odontoglots, Oncidiums, Masdevallias, Lælia majalis, Epidendrum vitellinum, Cattleya citrina, &c.

On leaving the Orchid-houses, and entering the kitchen garden, I passed by one of the finest trees of Wellingtonia gigantea I ever saw, perfect in symmetry, 6 feet in circumference at the base, and about 40 feet high; also a golden Holly, with a circumference of branches 16 feet, and about 40 feet high, well-shaped and furnished from bottom to top. This garden is also said to contain a rich collection of hardy Ferns and bulbous plants, but they were hidden by snow. At the extreme end is a nice range of lean-to houses, the centre one well filled with a miscellaneous collection of greenhouse plants, just now a perfect blaze of Acacias, Genistas, Primulas, and Cinerarias; another devoted almost exclusively to Camellias, of which there is also a good collection. A forcing-house at the opposite end contains a miscellaneous collection of stove plants and Orchids, the most remarkable plants here being a pair of specimen Eucharis amazonica, the one having borne eighty flowers, the other seventy-four, and a grand mass of Dendrobium Falconeri suspended from the roof. The glass department is, I learn, likely to be increased.

In the Orchid department Mr. M'Gregor, the gardener, who was formerly foreman at Meadowbank, deserves great credit for his care and management, and it is pleasing to know that he receives every encouragement from his employer. *Robert Bullen.*

TWIN MUSHROOMS.

THE singular example of twin Mushrooms which is here engraved (fig. 73) was sent to the office of this paper last month by Mr. George Breese, The Gardens,

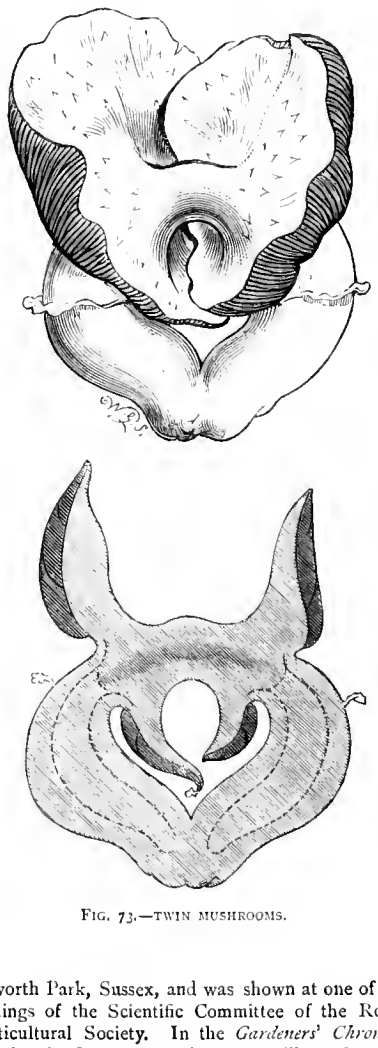


FIG. 73.—TWIN MUSHROOMS.

Petworth Park, Sussex, and was shown at one of the meetings of the Scientific Committee of the Royal Horticultural Society. In the *Gardeners' Chronicle* for July 26, 1873, pp. 1016, 1017, will be found a series of eleven figures illustrative of various monstrosities found in the Mushroom tribe, and in the fourteenth volume of the *Bulletin* of the Botanical Society of France numerous other illustrations are given by M. de Seynes. Amongst those figures, however, there is nothing like the fungoid Siamese twins and "Two-headed Nightingale" joined in one sent on to us by Mr. Breese, and we must confess to having never seen anything so complete in its way before. To a botanist the great singularity of the monster here illustrated rests in the apparently continuous stem which joins the two tops together. It is far easier to illustrate abnormalities of this class than it is to give satisfactory reasons for their occurrence. Monstrosities are always valuable for study on account of the lessons they teach in development; let us hope therefore that Mr. Breese's twins here shown in elevation and section may some day help to teach a valuable lesson. *W. G. Smith.*

BEGONIA METALLICA.

THE subject of the illustration on the opposite page, Begonia metallica (fig. 74), is a native of Bahia, from whence it was introduced about 1869 into the garden of W. W. Saunders, Esq., Hillfield, through the late Mr. Bowman. It requires stove treatment, and grows with moderate freedom, flowering in the summer for four or five months. Its leaves are of a shaded greenish bronzy hue, glossy, and covered with hairs, and the flowers are of a rosy pink tint. It belongs to the B. erecta multiflora section, and has proved a good and useful plant for table decoration. It was shown before the Floral Committee on September 1 last by Mr. Croucher, gr. to J. T. Peacock, Esq., Sudbury House, Hammersmith, and deservedly gained the coveted award of a First-class Certificate.

We are indebted to Mr. B. S. Williams, of Holloway, who will distribute the plant in May next, for the use of the accompanying illustration.

Foreign Correspondence.

BOTANICAL TOUR IN THE TYROL.—On the 3d of August last I started for the Continent, *viâ* Dover, Calais, Cologne, Munich, and Innsbruck, arriving at Botzen on Friday night the 7th. After getting my money changed into the Austrian paper money, and obtaining a good night's rest at a comfortable German hotel, I started by train between 5 and 6 A.M. for Atzwang station, about 15 miles north of Botzen, that being the nearest point from which to commence the ascent of the Schlern. From Atzwang to Ratzes Baths is a zig-zag path up the mountain side, a sort of rough, narrow horse road, up which passengers and provisions are conveyed to the baths, about 9 miles distant. Directly on leaving the station you cross the River Eisack by a rudely but firmly constructed wooden bridge, resembling a tunnel, it being covered with Pine boards. I had no sooner left the bridge and began the steep ascent when I rejoiced to see some well known alpine friends, viz., Dianthus superbus, Campanula rapunculoides, Saponaria ocymoides, Polygala Chamæbuxus, Anemone Pulsatilla and Selaginella helvetica (the last was very abundant where it was shaded by shrubs and trees), Digitalis ochroleuca and Orobus vernus.

In some places in the wood, where there were few trees, the ground was green with Vaccinium Vitis idæa. Higher up, on emerging from the wood, the walls were seen charmingly clothed with Asplenium Trichomanes, A. viride, A. septentrionale, and Cystopteris. The grass fields and hedgebanks were gay with Salvia pratensis and Prunella pyrenaica (or P. grandiflora?).

After walking some little distance a few scattered houses are to be found, which constitute the small village of Völs. Beyond this the ascent is not so steep for a mile or more. In several places the path goes round, or has been cut through hillocks of stones and earth. On these I saw Sempervivum arachnoideum, S. montanum (?), Saponaria ocymoides, Helianthemum vulgare, H. Fumana, Dianthus sylvestris, Nothochlæna Marantæ (a solitary specimen), Saxifraga notata (?), and Globularia cordifolia. The last is a very pretty dwarf evergreen alpine of trailing habit, with small roundish leathery leaves, and pale bluish flowers. It forms quite a nice clothing, especially in very stony places.

The next few miles are not particularly interesting, leading through alpine meadows and grazing land until the Pine woods are reached, which are immediately beneath the enormous perpendicular cliffs of the Schlern. Here I was pleased to meet with Pyrola secunda in great profusion, and Campanula cæspitosa, a species resembling C. pusilla, but with smaller flowers, intermediate between the latter and C. Zoysii, the mouth of the corolla being contracted like the latter species. It was growing in great profusion amongst the washed down *débris* of dolomite limestone, where the fragments were of the size of Walnuts, or even less, intermingled with a very small quantity of soil. On and on I went through the woods, composed of Spruce, Silver Fir, and Pine—a somewhat dreary walk, as all distant view is shut out by the trees, excepting the monstrous summit of the Schlern, ever looking down upon you.

As you proceed the sound of running water reaches

the ear, becoming more distinct, until at last you reach the stream, which you cross by a small wooden bridge, whence you then discern the whitewashed buildings of Ratzes Baths.

Ratzes.

A more "out-of-the-way" place it would have been difficult to find to build in, for it is erected in the highest available position in the narrow gorge between the Seisser Alp and the Schlern, an Epipactis not in flower. After climbing and scrambling for about a mile I saw the charming little Pyrola uniflora beneath a fine specimen of Silver Fir. It was growing among the decayed leaves on the shady side of the tree. Although it would never be very wet, the roots of the Fir forming such perfect drainage, yet the ground would never be dry, as the moisture draining from above would keep the soil damp. A large blue Monkshood, 1½ to 2 feet high, which was growing in open places, was very gay. Higher up I came to acres of the alpine Rose (Rhododendron intermedium), and still higher to the dwarfer Rhododendron hirsutum. Immediately beneath the cliffs the first plant which attracted my attention was an annual with scarlet fruit in whorled clusters up the stem, which was much branched and about 12 inches high; it was growing in limestone sand or dust beneath an overhanging cliff, where it would seldom, if ever, be rained upon. I have not been able to ascertain its name. All along the ledges, as high as the eye could scan the face of the cliff, Aquilegia Bertoloni was showing its charming blue flowers with yellow anthers—a very neat species.

Fig. 74.—Begonia metallica.

The waters, containing sulphur and iron, are conveyed, for the benefit of the invalids, for a considerable distance down from their respective springs to the bath-house by means of hollow trees, the thin end of one being let into the thick end of the other, and so forming a continuous pipe either above or under ground.

After dining at Ratzes, and arranging to sleep there a few nights, I turned my steps back toward the little wooden bridge, and then to the left, intending to visit the perpendicular cliffs which overlook the bath-house and the Pine forest. Here Pyrola secunda was especially plentiful. I also saw on a shelving bank

The next treasure which caught my eye was one of the most singular of all alpine plants—Phyteuma comosum—with stiff, leathery, glaucous, jagged leaves and enormous flower-heads, nestling close to the face of the rock, and resembling most a collection of small purple horns. The flowers vary in colour, some being much darker than others, the prevailing colour being light blue tipped with brownish purple. To all appearance it was growing out of the solid limestone rock, the roots penetrating far back into extremely narrow cracks. It is a most difficult plant to extricate. A little further on I found another Phyteuma, new to me, P. Sieberi, with flower-heads about the size of our native P. orbiculare, with very pubescent leaves and blue flowers, 2 to 6 inches high. As I ascended higher, plants I knew as rarities became abundant. Saxifraga Burseriana, S. valdensis, Soldanella minima, S. alpina, Cystopteris alpina (?), Pinguicula alpina; Asplenium Seelosii, a very small and singular little Fern, with fronds about 1 inch high, cleft into three small divisions at the apex, which was growing sparingly on the north side on detached masses of rock; Pedicularis, various species, Paederota Bonarota, Ranunculus montanus, R. alpestris, R. Thora, R. rutæfolius, Silene acaulis, and Viola biflora were all there; but what pleased me most was a beautiful little Campanula, of very dwarf and tufted habit, with minute roundish toothed leaves covered with hairs. The flowers were large, bell-shaped, and of a bright yet dark purple colour, extremely handsome. It was growing, like its neighbour the Phyteuma, on the face of the solid cliff, in the smallest cracks imaginable. The flowers were so conspicuous that I could see it on the face of the cliff more than a thousand feet above. When I got back to Botzen, I ascertained from a little illustrated work on alpines that it was C. Morettiana.

The Schlern.

My next excursion was to the summit of the Schlern, which is 9000 feet above the level of the sea. From the baths it is reached by a very narrow and steep winding path up the Seisser Alp, ascending for the first 2000 feet, which brings you on to the tableland of this great Alp. Here are many châlets scattered about, where the traveller can generally get milk. Then by turning south-west and crossing the stream on large stones you gain the flank of the Schlern, from whence to the summit is a very steep grassy slope varied with hillocks of rocks and stones. In the grass, not far from the water, fine specimens of Allium victoriale were growing. From about 1000 feet above this to the summit the pasturage was richly adorned with alpines. Amongst them was a pure white flower about the size of a shilling, which I took in the distance to be Dryas octopetala, but which I found to be Anemone baldensis, a very neat and showy plant, 4 to 9 inches high. Then Potentilla nitida, with its large and showy pinkish flowers, was very plentiful—I saw a solitary specimen of it which had flowers of a bright rose colour, reminding one of Rosa pyrenaica. Campanula pulla, with large dark blue solitary flowers, was sparingly scattered over the whole of the turf, not growing in tufts as it does in our gardens, but always solitary, with flowers larger and finer than I had ever seen under culture. I noticed also more Phyteuma Sieberi in the fissures; Saxifraga cæsia, Oxytropis cyanea, Aronicum glaciale (?), Anemone vernalis, Arbutus alpina, Primula longiflora, were all to be seen. Gentiana verna, G. nivalis, G. brachyphylla were sparingly scattered about, but not to be seen without looking very closely among the herbage, as they were but sparingly in flower.

On a shelving slope of *débris* a little below the summit on the east side of the mountain I saw Papaver pyrenaicum, which in such a situation was very conspicuous. Androsace obtusifolia, with simple and innocent little white flowers, was also growing in this stony material; so also was the real alpine gem, Myosotis alpestris, in tufts about 3 inches in diameter, and 2 to 4 inches high, literally covered with bright blue flowers with pink centres, looking like clusters of jewels. It was now time for me to retrace my steps, and commence the descent towards Ratzes. On the way I noticed a singular blending of vegetation on the flank of the mountain in acres of dwarf Pinus montana, with stems about the thickness of one's thigh, the first foot or so erect; the other portion of the tree was suberect, sparingly clothed with foliage, being from 4 to 6 feet high, but under all this was one complete sheet of the "alpine Rose," Rhododendron intermedium. *Wanderer.*

Florists' Flowers.

Auriculas.—The prevalence of dull, cold, frosty weather—which, if occasionally brightened by gleams of sunshine, has its genial warmth neutralised by the cold north-westerly winds—is doing much to retard the flowering of Auriculas, and to make it a matter of anxiety with some of the Northern growers, who are the chief exhibitors of the Auricula, whether they will get their flowers well into bloom by April 25, the date of the National Auricula Show at Manchester. Cold winds by day and frost by night necessitate that the plants be kept somewhat close, which causes the flower-stems to become drawn and to take on a leggy appearance. As there is a probability that some of the earlier flowering varieties will have to be depended on, it is of great importance that the plants be well protected from frost. The frames need to be shut down close at night, and the glass well covered up. The nipping frosts that are playing such havoc with the young growth of Roses, Clematis, &c., bode no good for the delicate flowers of the Auricula; and while a genial warmth does much to give density and symmetry to the zone of body colour found on the edged flowers, and develope well-rounded flat pips, the effect of cold is of the very opposite character. Frost will cause the paste to crack, and a cracked paste is a calamity to be dreaded by the exhibitor; it will also give a frilled character to the pips, and cause them to come cupped. Cold draughts of air playing immediately on the flowers hasten similar unwelcome results. Frost must be zealously guarded against, for its effects are most baleful.

Double Primulas.—A capital strain of double forms of Primula sinensis has been raised by Mr. R. Gilbert, of Burghley Gardens, from single flowers. They are of white, blush, and rose colours, the set flowers of the latter shade being very full, and there are some charming striped blooms also. All the flowers are of remarkably full substance, and since last November the plants have been laden with them, thus showing their value for house decoration during the winter.

The Villa Garden.

Roses in Pots.—A few Roses in pots is a possession worthy the ambition of any Villa gardener who has glass accommodation, and on the attention given to the plants at this season of the year will depend in a great measure the value of the flowers obtained in April and May. As a matter of course much depends on the kind of house in which the Roses can be brought on into flower, and the more heat that can be applied so much the earlier will the plants come into bloom. As a rule, Villa gardeners are content with a few varieties, and do not attempt to force till the beginning of March. We must assume the plants were potted in suitable soil last autumn, have been kept through the winter in a cold house or frame, and by this time have commenced to grow. Directly the buds begin to swell or break out the plants should be suitably pruned—cut back to three or four eyes on a shoot, and then placed in a gentle heat. Bottom-heat is not necessary, but a genial temperature sufficient to induce a regular and vigorous growth. A vinery just started into growth, or a warm greenhouse, would suit Roses very well at this season of the year. We have seen Roses doing well in such a house with the pots plunged up to their rims in tan or cocoa-nut fibre. When something like this is used as a plunging material, some moisture arises from it, and assists the healthy development of leaves, and to an appreciable extent prevents them from becoming infested with aphis or greenfly. When this pest puts in appearance the leaves should be cleansed with warm soapsuds and water, or fumigated with tobacco-smoke. Fowler's Gardeners' Insecticide is an excellent garden appliance for Villa gardeners to have by them at this season of the year. A mixture sufficient for the purpose is soon made, and it can be applied easily and in a cleanly manner.

Raising Half-hardy Annuals, &c.—A little artificial heat is of great service at this period for getting forward many plants of great service in the flower garden during the summer. When it can be had in the form of bottom-heat, obtained by one of the hot-water pipes passing through a tank beneath the bed, or a bed itself, a great many things can be soon raised and pushed on into growth, care, however, being taken that they are not drawn up lanky—a common fault with unskilful, or, shall we say, inattentive Villa gardeners. Petunias, Phlox Drummondii, Eccremocarpus scaber, Ageratum Imperial Dwarf, Pyrethrum Golden Feather, Cockscomb, Balsams, Thunbergias, Cobæa scandens, and others required in the garden can be so raised. The seeds can be sown in pots or pans, in some fine light soil, all the fine seeds being on the surface, and the larger ones only slightly covered, and then placed in a gentle heat, the pots covered with glass if possible, and then with old newspapers, or some such slight covering. The chief dangers to be avoided are, first, having too strong a heat below the plants; and, secondly, permitting the plants to be too much drawn by allowing the pots to remain for too long a time in a confined space. The growing plants need to be inured to light as soon as possible, gradually, of course, so as to make them sturdy. Some care and attention is necessary at this stage, or else the soil may be allowed to get too dry, and the plants be lost in that way. When the pots are brought out of the bottom-heat they may be stood on a shelf near the glass, on the shady side of the house, and shaded from the sun when it shines brightly.

In order to have good stocky plants ready for planting out at the end of May or early in June, they should be pricked off into other pots or boxes, as soon as it can be done, 2 inches or so apart, and kept warm and close for a few days, and then gradually brought to the light. Indeed they might remain in these boxes till the time arrives for planting out in the open ground, only it is necessary to harden them off in a cold frame, so that when the proper time arrives they may be able to bear full exposure.

A good deal can be done in an ordinary greenhouse that cannot be heated, in the way of raising many tender plants of a half-hardy character, if an upper shelf near the glass can be available for the purpose. When the sun shines brightly the warm air rises to the top of the house, and exercises a quickening influence on the seeds sown in pots placed on a high shelf. This position, while favourable in the direction of procuring a quick growth, is yet open to drying influences; but we have found that a newspaper laid over pots of young seedling plants in such a position keeps them cool and moist. In the case of newly-sown seeds a piece of glass should first be placed over each if it can be managed, shading it, of course; and then, when the plants get above the level of the rims of the pots, the glass removed, but the covering allowed to remain.

Going into a neighbour's greenhouse a day or two ago we saw several useful things being raised in this way—viz., Tomatos, variegated Japanese Maize, ornamental grasses, Balsams, and others. Each pot had been covered with a piece of glass in the way above-mentioned, and the sunny influences of occasional glimpses of bright weather had assisted germination quickly and regularly. Coming down to a lower level, the ordinary cold frame, if raised a little above the ground level, can be made to do excellent service at this time of year. A bed of nice soil can be made up in the frame, and the seeds sown in it, or pans and pots can be used, as in the case of the greenhouse. In cold and frosty weather some covering should be given at night to keep all snug and warm; by day, when bright sunshine falls on the frame from an unclouded sky, a little shading will be necessary. Many half-hardy things can be successfully raised in this way.

Forestry.

Although much has been written, especially of late years, upon the subject of forestry in general, yet few have been the efforts to show how woodlands should be treated in order to produce the most satisfactory and profitable results—results, at least, that can be compared with and bear a proportion to those of agriculture; and this is all the more to be wondered at since in the present day everything must be submitted to scrutiny, investigation, and analysis.

The art and practice of agriculture are not only conducted upon established and fixed principles, but the results are as accurately known as figures are capable of indicating. As with agriculture, so ought it to be with arboriculture; and as fixed principles, system, method, and order are indispensable in the one case, so are they in the other.

Upon only one extensive estate known to me is anything like true method and system observed in the operations of forestry. The woodlands upon the estate comprise about 2000 acres, and during a period of over fifty years have yielded a clear revenue of £2000 annually. The woods are of a mixed character, composed of Oak, Ash, and Elm timber, and a general mixture of underwood. The whole woodlands are divided into ten separate lots or divisions, each containing about 200 acres. One-tenth of the underwood is annually sold and cut for Hop-poles, hoops, crate and other ware, and which averages £5 per acre, or £1000 for the annual cut. From the same ground as the underwood is cut, there is also at the same time a certain number of timber trees taken. The Ash and Elm are cut some time in February or March, and the Oak, as soon as the sap rises to permit of its being peeled for the sake of the bark. The timber, of whatever species, requires careful selection, as the trees are of various ages, from the sapling to the mature old tree, and the requisite number of the most mature trees are cut to the value of £1000. The whole woodlands being divided into ten parts, there is thus an annual succession of crop, the underwood being reproduced from the stools, and the young Oak, Ash, and Elm from their own seed spontaneously sown, so that there is no expense entailed in planting in order to continue a succession crop. Although I have described forestry as it exists upon the estate, I do not say it is the best possible system, or that the profits would not be greater still were the timber trees grown by themselves and the underwood by itself, and still further if the Oak timber, the Elm, and Ash, were each grown by itself, as also the various species of underwood. The woodlands yield a return of 20*s.* per acre clear profit, while the arable land upon the farm property lets at only 15*s.* per acre.

The spirit of the age in which we live is hostile to good forestry. The speed at which everything is driven admits of nothing being matured, and trees unfortunately are no exceptions. Cutting green or unripe corn is admittedly unprofitable farming, and a practice justly condemned, but it is no less worthy of censure and denunciation as a practice in forestry. In the former case it is only exceptional, while in the latter it is almost the general rule.

I know a well wooded estate where the forester, who well understood his profession, took deep interest and bestowed much pains in rearing a splendid crop of Pine and Fir timber. A change in the management of the estate led to the appointment of a young and inexperienced man, who, not knowing or considering what was best to do, thinned with unsparing hand the already sufficiently thin plantations. By these means he increased the revenue of the estate by a few hundred pounds, but by doing so he depreciated the value of the woods by many thousands, and indeed ruined them so far as regarded future profit.

I know also another estate celebrated for its Oak timber upon which an emergency occurred when £6000 were required, and a quantity of timber had to be sold to meet it. The quantity cut at once being too great, young and sapling trees had to be taken to make it up, and thereby only 1*s.* per foot was realised for timber which, if allowed to stand till properly matured, would not only have increased in quantity, but the quality would have also so improved as to command 2*s.* per foot instead of 1*s.* only.

I have also seen Scots Pine timber sold at the rate of 4*d.* per cubic foot, which if allowed to have stood till the wood was mature would have readily realised 10*d.* per foot, or even more.

What is recommended is this, that upon every estate, according to its extent, a certain proportion of the woods should be cut down as a mature crop annually, and a certain corresponding extent planted. Assuming that Pine and Fir and hardwoods generally (Oak excepted) are ripe at seventy-five years' growth, and the extent of woodlands is 5000 acres, seventy-one acres might be cut and cleared off annually, which if properly grown would be worth at least £1 per acre for every year of its growth, thus making the annual revenue £5041. If, however, the woodlands are only 2500 acres, the income would be half the above, but the system and practice would be the same. Upon small estates it is often better to sell a certain quantity of standing timber at wider intervals—say every third, fourth, or fifth year—than small quantities annually. The results, however, as to cropping are the same in either case, provided always that a proportion of planting is done equivalent to what is cut down. The ruin of the woodlands of most estates is the malpractice of thinning, by which is meant continuing the operation beyond the proper period for doing so, and being too late in commencing it. *C. Y. Michie, Cullen House, Cullen, March* 18.

Garden Operations.

PLANT HOUSES.

Plant Stove.—The rapidity with which many stove plants increase in size causes them to soon get too large for accommodation where there are only small houses to grow them in, and as the greater part will flower freely in a small state, it is better in such cases to spring propagate a certain number of young ones to supplant any that outgrow their limits. Most stove subjects are free in rooting, and will strike at almost any time of the year when half-ripened wood can be obtained and sufficient heat, but at this season the young shoots after they have made some growth are in an especially suitable condition, and can in most cases be taken off at about some 6 inches in length with a heel of the firm wood from which they spring attached, when they are in the best possible state. Many plants will strike taken off with a heel in this way that are difficult to induce to root without it. Allamandas, Bougainvilleas, Clerodendrons, both the twining and shrubby kinds, not forgetting the finely scented C. fragrans, now so seldom seen, but one of the most highly and distinctly fragrant plants in existence; Æschynanthus, Gardenias, Franciscæas, Hexacentris mysorensis, Hibiscus, Medinillas, Musænda frondosa, Rondeletia speciosa, Vincas, Thunbergias, Dipladenias, Stephanotis, Tabernæmontanas, Hoyas, Jasminums, Passifloras, Ipomœas, and Bignonias — if these things are at once put in they will not only root freely but, all the season being before them, they will get well established before autumn, and make useful flowering plants another season. One thing should be observed —that is, if possible, to propagate from clean stock, especially free from mealy-bug or white scale. It is generally better to strike all such plants as the above in small single pots than several together in larger ones, thus doing away with any risk of breakage of the roots when being potted off.

A sufficient stock should also now be put in of such things as are usually struck every spring for winter flowering, including Sericographis Ghiesbreghtii, Plumbago rosea, Euphorbia jacquiniæflora, Centradenia floribunda, Salvia splendens and S. gesneræflora, Eranthemum pulchellum, and the drooping Thyrsacanthus rutilans. These are plants that can scarcely be dispensed with where blooming decorative subjects are required for the stove, or cut flowers are in regular demand. These also will be much better struck singly, as in the case of the others, in small pots, and then moved on when they require it. Many growers recommend a mixture of peat and loam for these last-named winter-flowering plants, but I prefer good turfy loam, giving enough sand to keep it well open, but no leaf-mould; this latter favours soft spongy growth to an extent that nothing else that can be added to the soil will do, and is fit for little except quick-growing soft-wooded plants, such as the Bouvardias, which luxuriate in it. Of all plants grown for the production of cut flowers there is nothing to surpass these, yet they are rarely found in private collections. Why, it would be difficult to say, as they can with little difficulty be had in bloom all the year round, and are equally suitable in a cut state for vases, bouquets, &c., or as plants for the winter and spring decoration of warm conservatories, where they will flower for a considerable time. To grow them up to the mark they like through the winter a temperature of not less than 65° at night, and the lightest position that can be found for them; under this treatment they will flower at every inch of shoot they make. It is a good time to put in cuttings now; they will strike freely from bits of soft young growth taken off with a heel, placed in a moist heat of 70°; these are also best put singly in thumb-pots in equal parts fine loam, leaf mould, and sand, and removed to bigger pots as they require it. The following kinds are all good, and may be relied upon:—B. Humboldtii corymbiflora (white), B. jasminoides longipetala (white), B. Maiden Blush (blush white), B. Hogarth (scarlet), B. Queen of Roses (rose-pink), and B. Vreelandii (small, white), an immense bloomer. Poinsettias I prefer to propagate later on, except for those who have got plants of the splendid new double-bracted kind of Messrs. Veitch's, and who will naturally be anxious to increase it as much as possible. Seeds may now also be sown of the berry-bearing Ardisia crenulata, both the white and red varieties: sow in pans in a brisk heat. Anthurium Scherzerianum throwing up its flowers should, where any of the minute yellow thrips exist, be syringed over the flowers every day with clear tepid water, or these little pests will destroy them long before their allotted time. The water will not in the least injure the flowers, even if it leaves a slight sediment upon them this can easily be removed with a soft sponge. If brown scale happens to affect this plant at all it should be diligently sought for, or the young ones increase apace upon it, and get into the expanding blooms, destroying them. The same treatment is required in every way for the new white variety of this plant. *T. Baines.*

Orchids.—Under the influence of heat and moisture a great number of the plants in the various divisions will be showing signs of bloom, and during the next two or three months will amply repay all the care and attention that have been bestowed upon them during the previous growing season, and also during the period of rest. The growing season, by its very fact of growth, will cause its wants to be regarded, and, coupled with the requirements of the individual species, must now have every attention. The season of rest, when all appears to be inactive, is, in reality, as important as the former, and the success that is looked for and ultimately attained is, in a large measure, due to the thorough rest that is induced and carefully permitted. A maxim that is well worth remembering is this—when a plant is growing, help it by all the means that can be used, and stout and healthy growth will be the result; and when it is disposed to rest, let it do so, for after a certain cessation of activity it will in due season start again with renewed vigour, and will, by its bright and healthy appearance, give evidence that the rest has greatly strengthened and invigorated it. This fact is often forced upon us by the strong growths that are generally pushed up by plants that have been imported (providing, of course, the plants at the time were in a good condition), and grown on in a suitable temperature—the long rest to which they have been subjected causing the breaks at the base of the bulbs to be full of life and vigour, and instead of just pushing one shoot at the front bulb, the eyes at the base of the old bulbs as well as the leading growth push away, and, root-action following very closely, the plant is established in a short time, and often by the end of the first growing season is in a far more satisfactory condition than many that have been under the ordinary treatment for a number of years. The Calanthes must now be seen to, and the soil prepared and placed where it can become sufficiently warm before using. C. vestita and C. Veitchii are most handy when grown in 8-inch pots, for when in flower they can be better arranged among the other plants than if grown in pots of a larger size. Let the pots be filled to about a third of their depth with crocks, on which place some sphagnum moss or rough soil, and in a mixture composed of turfy loam, well rotted manure, some leaf soil and coarse silver sand well incorporated together pot the bulbs, about six of Veitchii and eight of vestita, just keep the base of the bulbs level with the top of the pot; if potted somewhat lightly, the soil will soon settle down and permit room for the water. Give but little water until the new growths have well started and are rooting; then gradually greater quantities must be given, occasionally treating them to doses of weak liquid manure. When potted place them in a temperature of not less than 65° by night and 75° to 80° by day, gradually raising the temperatures as the growth advances, for it will be found they will stand a good amount of heat coupled of course with well regulated moisture and fresh air, when practicable. Shade from the direct action of the sun, otherwise they enjoy a share of the light. C. Turneri and nivalis and Limatodes rosea will require the same treatment in every respect, but as the two former flower later than the vestitas and Veitchii, it will be found better to give them a little more heat when the spikes are showing. *W. Swan, Fallowfield.*

FRUIT HOUSES.

Cherries and Plums.—At the present stage of growth these subjects are very impatient of fire-heat, therefore as little as is consistent with safety should be applied, forbearing its use excepting for the purpose of sustaining the minimum degrees of temperature as recommended, namely, 40° at night and 50° in the daytime, and whenever the nature of the weather is such as not to admit of giving air liberally. Use the syringe sparingly on the trees, and only occasionally when the foliage has become thoroughly dry. The presence of those troublesome pests, the grubs, which in some degree infest Cherry and Plum trees in houses every year, may now be expected; a diligent search for their capture should therefore be made, and fumigation resorted to at once if the green or black fly makes its appearance. As growth advances proceed with tying in the shoots at the base, and stop those which are not required to furnish the trees at the fifth or sixth joint; in the case of Plum trees in pots remove all superfluous shoots when they are too thickly placed and stop the growths at from 4 to 6 inches from the base. *G. T. Miles, Wycombe Abbey.*

Strawberries in Pots.—To prevent the rapid increase of that vexatious pest, red-spider, which is almost sure to abound in these plants cultivated under glass, copious syringings should be applied at least twice every day to plants in positions which are fully exposed to the light and similar influences, until the fruit commences colouring. At this point the fruit will be improved by the influence of more air and that of a drier nature. If the conveniences at hand will admit, keep the plants where the night temperature does not exceed 58° until they are bloomed off. Pits are most suitable now for advancing these plants, provided the ventilation be properly attended to on all favourable occasions. Air liberally in such places, to prevent them drawing up weakly. Where cold frames are at liberty, these places should be filled with Strawberries now to afford a supply of fruit just previous to those coming in outside. After the fruit is gathered, select a number of the best plants of early fruiting kinds, and when they have been moderately hardened they should be planted out; such plants often provide runners when there is a scarcity. *G. T. Miles, Wycombe Abbey.*

Orchard Houses.—The weather up to this date in March has been of the most boisterous and wintry character, and this morning (the 20th) the thermometer showed here 8° of frost. The heating and ventilating orchard-houses in such weather will therefore require careful attention in respect to cold draughts in the daytime, and to keep the pipes or flues sufficiently warm to keep out the frost. The syringing of the trees should likewise be only done in the afternoon, before shutting up, as after a clear frosty morning there is generally hot sunshine in the daytime. Should aphis appear on the foliage of the trees, which will be easily seen by the curling of the young leaves, tobacco-fumigation must be resorted to. When Strawberries are grown on the shelves they are very subject to red-spider, but daily syringing the leaves will keep this pest down from infesting the trees near them. Sometimes the brown scale is troublesome in orchard-houses, but it can always be kept under by going over the trees with a sponge dipped in water wherein soft-soap or Gishurst has been dissolved. In unheated houses Apricots, Peaches, and Nectarines will naturally be in bloom, and their safety now greatly depend upon the calm, dry air in the house; protecting the outside by covering the glass at night with mats or tarpaulins in severe frosts—for it is possible we may yet have them even in April—will help to keep the air warmer in the house, and if there is bright sun afterwards in the daytime the glass may be shaded with a sprinkling of whitened water put on by the syringe. The trees when in flower must be daily gone over to distribute the pollen with a feather, camel's-hair brush, or gently tapping the pots with a stout stick. A little guano dissolved in the water once-a-week, when watering the roots, will help to strengthen the growth of the trees as soon as the fruit is set. *William Tillery.*

HARDY FRUIT GARDEN.

We have but little at present to add to former directions, the late severe weather having doubtless retarded many of the operations in this department, one of which, it is hoped, has had its due share of attention, viz., that of protection to the expanding blossoms of Peaches, Nectarines, and Apricots. There has not been for some years a season in which it was more necessary than the present. At this place the frost has, for the season, been very severe. I have recorded 9° below the freezing-point, but about a mile away on lower ground I hear of 11°: fortunately during the severest part, the atmosphere has been but very little charged with moisture, which is the most favourable condition under which such extremes of temperature can be submitted to by our early blooming fruit trees. We will hope, therefore, that even a moderate amount of protection has been sufficient to ward off injurious effects, and where, in the emergency, a thicker covering has been used than is absolutely necessary, it should be removed, and a lighter one substituted as soon as possible. No covering should exclude all the light. Something, after all, must be left to the vital energy inherent in the tree, and which is very much dependant on the action of light, and if we put on a protecting material so thick as to exclude that light, and leave it on for any length of time, we interfere by such coddling with that vital energy, and cause more injury than would result from several degrees of low temperature. Whatever pruning remains to be finished off should be attended to at once, particularly that of pyramid Apples, Pears, and Plums, which should all be finished before the buds are fairly started. Under a press of work, trees on northern aspects should always be left to the last, but as they will soon be on the move they must not be neglected. Espaliers and cordons should have the necessary pruning away of the immature autumn shoots left after the last summer's pruning, the ligatures examined, and all tight-fitting ones replaced. Autumn-bearing Raspberries should have all the canes shortened at once to 3 inches, and the surface well dressed with manure to induce strong growth. In treating the Fastolf Raspberry we always leave a few canes in the row, and shorten them about this time to 6 inches; these come into bearing after the main crop, and produce very fine fruit. *John Cox, Redleaf.*

HORTICULTURAL EXHIBITIONS, 1876.

March.

29.—Royal Botanic Society, Regent's Park. Spring Show.
29.—Glasgow and West of Scotland Horticultural Society. Spring Show.

April.

5.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
5.—Royal Caledonian Horticultural Society. Spring Show.
12 and 13.—Royal Aquarium and Summer and Winter Garden. Flower Show.
19.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
25.—Manchester Botanical and Horticultural Society. Exhibition of Auriculas, &c., at the Town Hall.
26.—Royal Botanic Society. Second Spring Show.
27.—Royal Horticultural Society of Ireland. Spring Show.
30.—Opening of the International Horticultural Exhibition at Brussels.

May.

3.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
10.—Royal Agricultural and Horticultural Society of Jersey. Spring Show.
10.—Glasgow and West of Scotland Horticultural Society. Summer Show.
10 and 11.—Royal Aquarium and Summer and Winter Garden. Flower Show.
17.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.

THE

Gardeners' Chronicle.

SATURDAY, MARCH 25, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

Monday,	March 27	Sale of Orchids, Lilies, Hardy Roots, &c., at Stevens' Rooms.
Tuesday,	March 28	Sale of the Collection of Stove and Greenhouse Plants, the Property of Mr. Morse, Epsom, by Messrs. Stevens.
Wednesday,	Mar. 29	Royal Botanic Society's Spring Show. Glasgow and West of Scotland Horticultural Society's Spring Show. Sale of Roses, Shrubs, Herbaceous Plants, &c., at Stevens' Rooms.
Saturday,	April 1	Sale of Hardy Shrubs, Roses, Bulbs, &c., at Stevens' Rooms.

We learn from Brussels that the prospects of the International Horticultural Exhibition to be held in that city during the first week in May are of the most satisfactory character, and that there is little doubt but that a very splendid display will be got together. As for the hospitality of our Belgian friends, there is but one thing to be said—it is too lavish. It may, however, be well to remind those who contemplate exhibiting that they should announce their intention to M. Lubbers, the Secretary of the Royal Flora Society of Brussels, before April 1. Exhibitors need not then specify precisely what they propose to show, but simply announce their desire to exhibit in such-and-such classes, and indicate the amount of space they are likely to require. Detailed lists will not be required before April 20. Plants intended for exhibition should be delivered in Brussels by April 28 at latest. Heated compartments will be provided where necessary. Foreign exhibitors are at liberty to compete in all the classes; but the following competitions, for which gold and other medals are allotted, have been arranged specially with a view to induce British horticulturists, professional and amateur, to enter the lists:—Class 37, twenty flowering plants in bloom, stove or greenhouse; class 43, twelve specimen plants with variegated leaves; class 52, fifteen Orchids in flower; class 53, twenty-five Orchids in flower (gold medal of 1000 francs, equal to £40); class 55, specimen Orchids; class 79, ten plants of Gleichenias, Adiantum, &c.; class 80, 12 Filmy Ferns; class 85, twelve Nepenthes; class 124, twelve Ericas; class 126, twelve Epacris; class 167, twenty Roses (300 francs).

We mention these classes among many in which our horticulturists might fairly expect to take honours, and we may add that the prizes are throughout liberal. One great object we are assured is to make the exhibition truly international, and hence the concessions that have been made in favour of British exhibitors. The cost of carriage by steamer from London to Antwerp, and from Dover to Ostend, and by rail from either of the ports just mentioned, will be defrayed by the Royal Flora Society. Messrs. Silberrad & Son, Harp Lane, Great Tower Street, are the London agents.

We give these details in the hope that many of our friends will respond to the invitation so cordially offered by our Belgian friends. Those who know by long experience the magnitude and importance of these exhibitions, and the exuberant kindness of the Belgians, will endorse our recommendation to those who have the means of entering the lists or of visiting the Exhibition, by no means to neglect the opportunity of so doing.

Of the Congress we have had no news lately, but, as we have already intimated, one of the topics for consideration is the best method of compiling a *Hortus Europæus*, or authentic list of all the plants cultivated in Europe. If this can be carried out the boon would be immense. Another and cognate subject might well be considered at the same time, and that is the nomenclature of garden hybrids, and what we may term "artificial" plants generally. To give to these latter Latin names of the same form as those applied to wild plants appears to us to be an evil that can only be remedied by common consent, and a Congress such as that about to assemble in Brussels may do good service to this end.

We are sorry to have to repeat our caution as to the Phylloxera. From evidence before us there is too much reason to fear that the pest is increasing in our vineries. We would urge all who witness any flagging in their Vines to examine the roots forthwith. If they send specimens to us they should enclose them in a glass phial or wrap them in oil-silk, for as the roots become dry, the insects conceal themselves or disappear, so that it becomes difficult to find them. Indeed, some specimens were forwarded to us and to others which were pronounced free from the insects, as we were not able to see any of them on the specimens sent. Nevertheless, on examining the living roots themselves we found but too many. When once its presence is certainly detected, we advocate the "stamping out" process to be carried out forthwith. This is the only safe plan for gardeners in general to adopt. Those to whom expense, loss of crop or loss of time is no object may fitly make experiments and will render good service by so doing; but for the majority of gardeners all experience supports the propriety of the advice we give—stamp it out—burn the Vines, remove the soil, scrub the woodwork, repaint; in fine, leave no precautionary measure undone to effect the destruction of the creature.

The application of an insecticide at Gunnersbury is in course of trial, but up to a few days since it had certainly not been successful. Pot Vines will be very serviceable in the interim, in those cases where the Vines are destroyed. It may be well also to give a caution by way of preventing the spread of the disease. When it is stated that it is quite possible for the insect to be conveyed from the border of one vinery to that of another on the boot or other part of the dress, the propriety of preventing indiscriminate access to the vineries will be appreciated. The insect, it is true, does not as a rule live long when removed from the root of the Vine, but still long enough to be conveyed from one border to another. It is the root-form of the insect of which we have seen so much lately, but later on we shall expect to see the leaf-form also, which makes peculiar fluffy galls on the under-surface of the leaves. Up to this time the specimens of Phylloxera we have seen from various parts of the country have been few and far between, but we greatly fear the mischief is increasing, and hence our warnings will not be considered ill-timed. In the last case that has come under our notice the origin of the outbreak is unusually mysterious, as the Vines are all home-grown, and struck from eyes raised on the premises.

—— The view on the opposite page (fig. 75) represents the interior of Mr. J. T. Peacock's Aloe, Gasterla, and Haworthia house. This is one of the most interesting structures in the garden at Sudbury House, Hammersmith. The most striking objects are, of course, the two very fine Mexican Toothpick Cactuses—Echinocactus Visnaga. These are two of three specimens introduced into Mr. Peacock's collection in 1873 from Tehuaca, in the northern part of California, the largest of which, now dead, measured 8 feet 6 inches in circumference, and weighed nearly 5 cwt. The importation of these monsters cost a considerable sum, as, owing to the absence of roads, they had to be carried on men's shoulders from the interior, where they were found, to the coast—a distance of over 100 miles. When they were received at Sudbury House the two specimens now illustrated weighed 3 cwt. each. With the exception of these two plants, the house is entirely devoted to the Aloe tribe, *i.e.*, to Aloes, Haworthias, and Gasterias. The large plant in the centre is Aloe ferox, the next behind A. Thraskii, a new species, introduced by Cooper. This Mr. Croucher believes will prove the largest known species. The plant behind it is A. cæsia, and the next A. Salmdyckiana. The dense plant on the left is A. nobilis. The side stages on the south side of the house contain the small species of Aloes, and amongst them are some very rare ones. On the north and west sides the Gasterias and Haworthias are arranged. The species are numerous and very interesting, including some that are very old and rare. The effect produced by the blooms of the Gasterias in spring is exceedingly good, and the flowers of some of the Haworthias are also very beautiful.

—— The following interesting communication, from Mr. Bentham, Secretary to the Horticultural Society at the time in question, relates to a statement which appeared in the autobiography of Mr. John Smith, in our last issue, with reference to the steps taken in 1840 to dispose of the Kew collections:—

"In the interesting autobiography in your last number of Mr. Smith, the former curator of Kew Gardens, there are a few particulars relating to the steps taken in 1840 by the then Government for the disposal of the collections not quite accurate as to some details which are not likely to have come to the direct knowledge of Mr. Smith. The management of the Horticultural Society was then chiefly in the hands of Dr. Lindley and myself, he being Under-Secretary, while I was in almost daily attendance as Honorary Secretary. On the morning of February 12 we received a note from the Secretary of the Treasury offering the Kew collections upon certain conditions to the Horticultural Society, with a verbal intimation that if refused they would be offered to the Botanic Society of Regent's Park. We both felt that this breaking up of the Kew collections would be a disgrace to the nation, and that if it were desirable to prevent it there was no time to lose. We, therefore, summoned a Council for the next day, February 13, which was fully attended, and who unanimously declined the offer on the above ground, and our President, the Duke of Devonshire, with whom we had already communicated, undertook to see Lord Melbourne on the subject, whilst Mr. Fox Strangways (afterwards Lord Ilchester) promised to speak to some others of the Ministry. A day or two later (and before Mr. Heward's letter appeared in the *Times*) the Duke informed us that Lord Melbourne denied any knowledge of the matter, saying that he had not been consulted, and certainly after the statement made by the Duke he would not consent to the transfer. We were also informed, on the part of Government, that the Secretary of the Treasury had gone beyond his instructions in making the offer. Some ten days or a fortnight later, this denial having been given in the papers, I, at the request of the Secretary of the Treasury, called at his office, where, in his own justification, he explained that the measure had been determined upon by a committee then entrusted with the reorganisation of the gardens, consisting of the Lord Steward (the Earl of Errol), the Earl of Surrey, and a third, whose name I have not on record, and he showed me Lord Errol's letter, actually directing him to make the offer. He also told me that Lord Melbourne had put a stop to it immediately after having seen the Duke of Devonshire, and that the offer never was made to the Regent's Park Society.

Well acquainted as I was at that time with all matters connected with garden administration, I can heartily join in all that has been said of the great services ren-

dered by Mr. SMITH to Kew Gardens during the long period of his curatorship." *George Bentham.*

—— At a recent meeting of the Californian Academy of Natural Sciences, Dr. KELLOGG said he had just returned from under the shadow of the finest evergreens ever grown. He hoped the Secretary would put on record the fact that there were in California GOLDEN CHESTNUT TREES (Castanea chrysophylla), from 100 to 200 feet high, 4 to 6 feet in diameter, and with an unbranched trunk of from 50 to 70 feet.

ated about a hundred miles from the southernmost part of the coast, and is subject to considerable extremes of temperature and great fluctuations of rainfall. The flora is Californian in its character, despite the proximity to Mexico. A Palm, Brahea? edulis, is the only representative of a tropical flora. It is described as growing to a height of 40 feet, and as bearing large clusters of edible fruit. B. armata and B. filamentosa, the latter recently introduced into cultivation, are also found in San Orego county. Pinus insignis and Cupressus macrocarpa are mentioned among the Conifers. The latter is described as a fine, widely

different forms it will be received for the use of tanners, when grown commercially in India, Ceylon, or Africa. The gum from the picked pods gives as high as 80 per cent. of tannin, and the lowest quality—viz., pods supposed to have been collected from the ground—as low as 18 per cent., indicated by the tan-tester. A specimen of this new plant is now at Kew, and plants raised from seed sent by Mr. CHRISTY to Ceylon are doing well. It likes a dry soil and atmosphere, and will climb over rocks. Dr. FORBES WATSON has bespoken some of the seed from this case for the Indian Government. Mr. CHRISTY has offered to

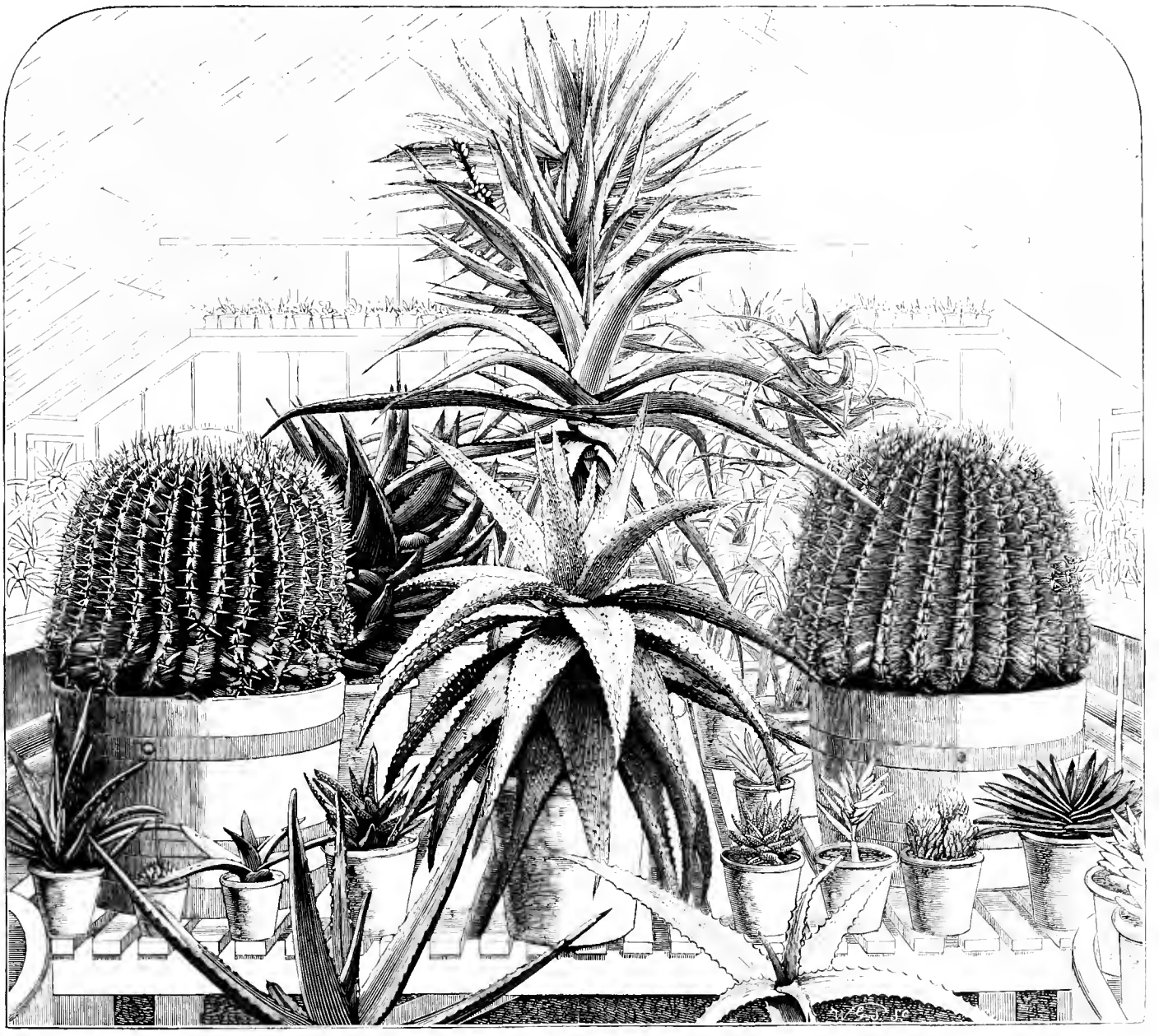


FIG. 75.—VIEW IN MR. J. T. PEACOCK'S AFRICAN ALOE, GASTERIA, AND HAWORTHIA HOUSE.

—— We learn that the fine nursery of M. AUGUSTE VAN GEERT, of St. Amand, near Ghent, has passed into the hands of M. A. VAN GEERT, jun. The collection of choice Conifers and other hardy shrubs at this establishment is only one of its remarkable features. From the same source we are informed that the establishment of the late M. STELZNER has been purchased by M. LOUIS LEGRAND.

—— Mr. SERENO WATSON has lately contributed to the American Academy of Arts and Sciences an interesting paper on the flora of GUADELOUPE ISLAND, LOWER CALIFORNIA. The island is situ-

spreading tree, varying much in habit, but averaging about 40 feet in height. A tree 38 feet high and 7 feet in circumference numbered 236 annual rings. The bark is claret-brown, shining when wet, at length cracking irregularly, and curling up in thin plates. An abundance of resin is exuded, especially as the bark is eaten off by goats. The wood is white, very knotty, and liable to crack when dry.

—— The *Daily Recorder* reports that a case of BALSAMOCARPON has been received by Messrs. THOMAS CHRISTY & CO., of 115, Fenchurch Street. It shows the seed pods and astringent gum in the

show this valuable produce, together with coloured drawings of the plant in flower, made at the British Museum, to any merchants or planters who may feel interested.

—— A very CURIOUS CONDITION OF A VINE ROOT has lately been forwarded to us, which at present we cannot explain. We do not find any trace of insects, nor do we think that the disease is at all attributable to their agency. It appears to be somewhat analogous to the Vine disease which has lately occurred in the neighbourhood of Pisa, and of which a specimen was exhibited by Professor DYER on

March 1 at South Kensington. It is not quite certain whether the disease originates beneath the bark or the young wood, but whether this be the case or no the portion beneath the diseased bark is deeply affected; tubular depressions being caused in it, in one of which we observe markings as if it were a morbid state of one of the main ducts. The inner bark is hypertrophied, gradually changing its colour into a foxy tint, and at last becoming spongy, and either itself separating from the wood or causing a complete decortication of what is beyond. The surface is rugged, as in the gall-like bodies which occur on the stems, and of which probably it is a mere underground form. The history which we have received throws no light on the matter, and the specimens are not in a sufficiently young state to afford much assistance. *M. J. B.*

—— The following circular has, we understand, been forwarded to each of the Fellows of the Royal Horticultural Society:—

"The Council of the Royal Horticultural Society, being desirous of extending a knowledge of practical horticulture, contemplate the foundation of lectures and demonstrations on the subject. Their intention is to have lectures delivered by properly qualified instructors, in the Society's hall, at South Kensington, and to give practical instruction in the garden at Chiswick. These lectures and demonstrations will be open to all Fellows of the Society gratuitously; but a charge must necessarily be made for their children and friends, in order to enable the Council to engage the services of competent persons. Before entering into engagements with instructors, and making other requisite arrangements, the Council are desirous of knowing what number of ladies and gentlemen will avail themselves of the opportunity thus afforded of acquiring a thorough practical knowledge of horticulture in all its branches. The Council will be glad to learn as soon as possible whether or not this proposition meets with your approval, and what number of your family and friends is likely to join the classes. The great facilities afforded by the garden at Chiswick for carrying out these arrangements make it desirable that as many of these lectures as possible be delivered there. The garden is now very easy of access from all the stations of the Metropolitan and District Railways to the station at Turnham Green, which is within a few minutes' walk of the garden."

—— Mr. Francis Darwin read before the last meeting of the Linnean Society a remarkably interesting paper on the Twisting of the Awn in Stipa and other plants. The effects of the torsion is to force the seed into the ground; the upper feathery end of the awn being relatively fixed, the seed worms its way into the soil. Mr. F. Darwin, finding that the seed so buried did not germinate so well as those which were simply placed on, or just beneath the surface of the soil, suggested that the burial of the seed was intended as a protection against seed-eating birds. To us, however, it appears quite as likely to be a provision against the ill-effects of drought or of too rapid evaporation of moisture from the surface-soil.

—— We learn from Mr. Maw that he has lately been so fortunate as to find in its original habitat, and also in a new locality, the Crocus etruscus of Parlatore, only known by dried specimens in the Florence Herbarium. This species was referred by Mr. Baker with a mark of doubt to C. reticulatus var., but Mr. Maw is disposed to consider it as worthy of specific honours.

—— A good many of us have vivid recollections of the Eton Latin grammar, and of the penalties and pains that ensued in consequence of any breach of its rules. To have questioned its authority would assuredly have been a heresy that would never have entered our heads, and yet it was with something akin to horror that on turning the old well-thumbed pages lately we came upon this passage, which shows, at any rate, that the Latin grammar was not intended to teach Natural History—"Sunt etiam dicta epicena (appellativa) Piscium ut Ostrea et cetus." Shade of Cuvier!—the oyster and the whale both classed as fishes! This extract might well be placed side by side with the probably less veracious story of the lobster, with which the name of the great naturalist is so intimately associated.

—— Baron Ferd. von Mueller has published an interesting pamphlet on the Natural Capabilities of the Colony of Victoria, considered in reference to indigenous or introduced vegetation. The object of the writer is to call attention to those native (Australian) plants which are possessed of special utilitarian importance. The essay contains in a condensed form some exceedingly interesting remarks on the vegetation of various portions of the colony, from which we shall be tempted to make extracts at a future time.

—— The following extract from a private letter addressed to Dr. Hooker is worth recording. The writer says:—

"At this time of year wood-pigeons flock all around this place, and one day I counted nearly fifty on the lawn after Beech-masts, of which they are particularly fond, while as many more were perched on the adjoining trees. I have two large Beech trees on my lawn, and both prolific in masts. The other day I found a dead pigeon under the trees, which had evidently been recently shot, for it was quite fresh. I opened the crop and took out 100 Beech-masts, some of which were vegetating, so I have sown them in a box, and I fully expect they will grow in spite of their having been previously incarcerated in the pigeon's crop. A curious fact is that the Beech-masts were found, not anyhow, but regularly packed, with their three angles fitting into one another so as to take up the least space."

—— We understand that Mr. Coomber, who has been head gardener at Knole Park, Sevenoaks, Kent, for the last nine years, has been appointed Superintendent of the Royal Botanic Society's Garden, Regent's Park. Previous to leaving Sevenoaks he will be presented, by a number of his friends, with a substantial proof of their appreciation of his professional ability.

—— A correspondent of the *Revue Horticole* recommends the culture of Vicia alba, or Canada Lentil, as a decorative plant for rooms. The seeds are to be sown in pots or pans, and kept in the dark at a suitable temperature. When the plants have attained a height of 40 to 50 centimetres they are taken out of the dark, and then form tufts of white foliage which serve well to mix in with other plants in *jardinières*, &c.

—— A recent number of the *Monatschrift* contains a coloured plate and description of Acidanthera bicolor — a very singular bulbous Iridaceous plant, allied to Babiana and Gladiolus. As a genus, Acidanthera is easily recognised by the remarkably long and slender tube of the perianth, which in the species figured is 5 or 6 inches long; the limb of the perianth is relatively small, and slightly irregular. A. bicolor grows about 20 to 30 inches high, has sword-shaped, prominently ribbed leaves, and the white and purple flowers are borne in one-sided spikes. The lobes of the perianth limb are gradually smaller, from the posterior one round to the anterior, and all of them, except the posterior one, have a purple or violet blotch at the base. This plant is a native of Abyssinia, and was introduced by Schimper. The same number also contains an uncoloured figure of Petunia grandiflora superbissima, a new strain, raised by Platz & Son, of Erfurt. It is described as superior to all previously raised large-flowered Petunias, exhibiting a variety of colours, and sometimes the flowers are beautifully veined. Other articles of interest are Professor Dyer's paper on "Papyrus," translated from the *Gardeners' Chronicle*, and the first part of a report of a lecture by Dr. Lender "On the Importance of Oxygen." When completed we shall probably give an abstract of this lecture. At a meeting of the Arboricultural Committee of the Berlin Society, as reported here, M. Lorberg exhibited specimens of several varieties of Plane, whereupon Dr. Bolle promised to communicate at a future meeting the distinguishing characteristics of the Eastern and Western Planes. We await the result with some interest, but we doubt whether he will be able to point out any constant characters by which the two may be specifically distinguished.

—— At the Linnean Society on Thursday last the adjourned debate on the observations made by Professor De Bary on the fungus producing the Potato Disease was opened by Mr. Carruthers, who explained the reasons which had led the eminent Professor of Strasbourg to doubt the correctness of Mr. W. G. Smith's observations on the resting-spores. Among the principal objections raised by De Bary are the different diameters of the spawn-threads, or mycelium, bearing the antheridium (male) and the oospore (female) respectively. He further questions the connection between the spawn-threads and the resting-spores figured by Mr. Smith, and from these and other points, such as the septate threads of Mr. Smith's fungus, he considers that Mr. Smith is dealing with two distinct fungi, and that probably the resting-spores found by Mr. Smith are those of a Pythium, and not of a Peronospora.—Mr. Berkeley considered that some of the points raised by De Bary in his comments on Mr. Smith's researches were "hypercritical." He pointed out that Mr. Smith's figures showed the actual process of impregnation taking place between the antheridium on the smaller spawn-threads and the oogonium on the larger spawn-threads, and he concluded by expressing his own opinion that Mr. Smith was right in the main, and that the bodies figured by Mr. Smith are the "true resting-spores of the Potato fungus."

Mr. Smith then restated his views, and answered the objections of De Bary, as expressed by Mr. Carruthers. As to the two sizes of mycelial threads, Mr. Smith pointed out a still more striking instance than his own in a plate recently published by Sadebeck, and referred to De Bary's own fig. 6, which showed a similar though less marked difference. In answer to the objection of oogonia and antheridia being borne on threads having no anatomical connection with each other, reference was made to Sadebeck's Pythium equiseti, in which an exactly similar state of things was illustrated, together with oogonia and antheridia perfectly free from their threads: this latter had been unjustly termed by De Bary "antheridia originating freely in the surrounding space," whilst Mr. Smith really wrote, "both antheridium and oogonium are so slightly articulated that they are detached by the slightest touch." As to the septa so strongly objected to, Mr. Smith pointed out that De Bary had forgotten that Mr. Smith's bodies were the same with Montagne's Artotrogus, which, like Peronospora, has a septate mycelium; and that De Bary himself, in illustrating Artotrogus for the Royal Agricultural Society (fig. 8), had actually introduced many more septa than Mr. Smith himself. These septate threads belong, Mr. Smith said, to Peronospora, for the threads in Pythium are never septate. Mr. Smith then pointed out an error in De Bary's criticism of Montagne and Berkeley, where he calls in question their views regarding the echinulate bodies being the mature Artotrogus. De Bary says he can "scarcely conceive how the smooth thick-walled cells could become the smaller star-shaped ones;" and Mr. Smith in answer pointed out that instead of being smaller they were generally larger. The mature spore on Montagne's plate, it seems, is only enlarged 380 diameters, whilst the oogonia on the same plate are 780, and the actual specimens prove the correctness of the representation. Mr. Smith then referred to a second Artotrogus, found by Mr. Broome in 1849, and which is identical with the secondary form of Peronospora parasitica. In answer to De Bary's complaint, that Mr. Smith had not yet worked out the complete life-history of the resting-spore, Mr. Smith, by quoting De Bary's own words, showed that it often took twelve months to do this, whilst nine had not as yet passed over since his discovery of the bodies. In answer to the concluding objection of De Bary, that the resting-spores were found at an "advanced stage of maceration and decay in water," Mr. Smith replied that his published report proved these bodies to have been first found in dry leaves before maceration was tried at all. As for perennial mycelium, this was a subject familiar to every beginner, and had been discussed years ago in reference to the Potato disease. Mr. Smith then suggested that Pythium equiseti, recently described in Berlin as found destroying Potato crops, might possibly prove to be a starved and zoospore-bearing form of the secondary condition of Peronospora infestans, as described by him. He thought this, on account of the septate mycelium and the habit of the oogonia and antheridia. Mr. Smith concluded by stating that M. De Bary's criticisms were in several instances grounded on an incorrect conception of what he, Mr. Smith, had really published.

Mr. Renny, after alluding to the diagrammatic character of Mr. Smith's drawings, expressed an opinion that Mr. Smith's resting-spores might possibly be those of a Pythium, and considered that Mr. Smith had not entirely made out his case, and that until he followed De Bary's plan of watch-

ing the whole life-history of the plant it would be impossible to come to a definite conclusion on the subject. Professor Dyer considered that the "Artotrogus" should be eliminated from the inquiry, as from its terminal position there was no evidence that it had anything really to do with the Potato fungus. Mr. Murray said that in these matters it was with most people a question of faith; and in the present instance he placed faith in Mr. Berkeley!

—— Mr. Bull has now in flower a very fine variety of Cattleya citrina, differing from the normal form in having larger pseudobulbs and much larger flowers, which are of a deep orange colour instead of bright yellow. The rare Odontoglossum sceptrum is also in flower in the same collection. The flowers, which are of a creamy yellow colour, with large cinnamon blotches and bars, and with a fringed labellum, render the plant an interesting one. In the Orchid-houses we also noticed the other day a plant of Trichopilia suavis with sixteen fine flowers; the charmingly pretty Odontoglossum Cervantesii decorum, which has been in flower a long time; O. Roezli alba, O. triumphans, O. Pescatorei; Dendrobium infundibulum, thyrsiflorum, Devonianum, Pierardi, aduncum, with its pretty, small, flesh-pink flowers; Wardianum, lituiflorum, macrophyllum giganteum, crassinode, and the distinct crassinode Barberianum, which has the sepals, petals, and lip richly tipped with rosy violet; Oncidium cucullatum superbum, Cypripedium Dayanum, C. nivenm, two or three varieties of Phalænopsis amabilis and P. Schilleriana; the fine Cattleya Trianæ Atalanta, and C. Warscewiczii delicata; the singular and rare Restrepia guttata, Ada aurantiaca, and Odontoglossum crispum (Alexandræ). Of the last-named Mr. Bull has lately received a consignment of 11,000 plants from the United States of Colombia, of which only 3000 came to hand alive. No wonder that Orchids maintain their price. Mr. Bull's cool Orchid-house contains a large stock of the new and valuable Odontoglossum cirrhosum, several of which are coming into bloom; and also a fine lot of the beautiful but still comparatively scarce O. Hallii. The last novelty we noted was a flowering plant of Aerides japonica, an interesting Orchid from Japan, with small flowers of a greenish white, spotted with rose. Amongst the new plants in Mr. Bull's nursery we noted a pretty Primula, in the way of P. denticulata, from which it differs in having more blue in its flowers, and a longer scape, and in the total absence of the powder so peculiar to the P. denticulata section. Mr. Bull has been very successful in raising seedlings from the fragrant Boronia megastigma; and amongst those now in flower may be noted several very distinct in colour, ranging from pale brown to almost black.

—— On Saturday last Northumberland Avenue, the new approach to the Thames Embankment, formed on the site of Northumberland House and Gardens, was formally opened and dedicated to the public by Sir J. Hogg, M.P., the Chairman of the Metropolitan Board of Works. The new roadway is about 1000 feet in length, and its width is 90 feet, divided into a carriage way of 60 feet and two footways of 15 feet each. The gradient for one half its length is 1 in 90, the remainder being practically level. Carriage and footway communications have been formed with Northumberland Street, Craven Street, and Scotland Yard, the first of which it is proposed to widen. A subway for gas and water pipes has been formed along the entire length of the street, and one of the main sewers, known as the Northumberland Street sewer, has been diverted for a portion of its length to bring it under the site of the public way, and a new sewer formed under the subway for the drainage of the houses to be erected in the new street. Plane trees have been planted on the footways next the curb, thus making the approach correspond in character with the roadway on the Embankment. The street was designed and completed by Sir J. Bazalgette, C.B., and Mr. George Vulliamy, the Board's architect. The contract was let to Messrs. John Mowlem & Co. on June 25, 1875, for the sum of £15,750. Their contract, however, did not include the construction of the carriageway paving, which is of wood, and which has been executed by the Improved Wood Paving Company at a cost of about £4500. The money expended in the purchase of the property amounts to about £643,754, including £500,000 paid for Northumberland House and estate; but the Board anticipate that the surplus land will sell for a very large sum.

Home Correspondence.

Value of Orchids.—At a sale of imported Orchids at Stevens' Rooms, on Monday, the 13th inst., ninety-two plants of Odontoglossum vexillarium sold for £477 4s., thus averaging £5 3s. 9d. each. *G.*

Draba cuspidata.—Amongst early-flowering hardy plants one of the very prettiest is Draba cuspidata, which, within the last week (March 17) has come well into bloom in Messrs. Backhouse & Son's Nurseries at York. The flowers are of a soft deep lemon-yellow, and are produced in dense corymbose clusters in such profusion that the plant appears to consist of about equal parts of green foliage and yellow bloom—the whole plant, flowers and all, being only 2 inches or so in height, and forming a tiny hemispherical hillock 4 or 5 inches across. Although, perhaps, more particularly valuable as a rockwork plant, it might also be very effectively used, at this season, in window-boxes, &c, where its pleasing yellow would form a lively contrast to the blue, red, and white of the Scillas, Cyclamens, and Snowdrops. For the same purpose, I would likewise recommend the very dwarf (3 or 4 inches high) and early Narcissi minor and minimus, which are just now also in bloom here. *Ebor.*

Limestone as Fuel.—Allow me once more to say that, if your readers prefer Mr. Kinnear's science to my facts they are at perfect liberty, so far as I am concerned, to do so. Those facts, if credit be given to them, preclude all necessity for the use of a pyrometer. I will repeat one or two of them. 1. Within three months of the publication of my first letter in the *Times* newspaper on chalk as a subsidiary fuel, a manufacturer informed me that by the careful carrying out of my recommendation he was, in the furnaces of two 40-horse power engines, effecting a saving in the cost of fuel to the amount of 25 per cent., and this in London. 2. In a furnace attached to a system of hot-water pipes I have, with 3 cwt. of chalk and 2 cwt. of coal, raised the thermometer as readily and to an equal height as that in that same furnace it is raised with 5 cwt. of coal alone. 3. In a furnace in my church, and in two furnaces in my schoolroom, I am obtaining at least equal heat from two-thirds chalk and one-third coal as from filling the furnace with coal. There is surely no need of a pyrometer to convince myself or others of this? I would repeat an observation made, I think, in my last letter. There is much more on this subject yet to be discovered, but it is to be found in simple experiment, and it will be well for horticulturists and for all who are concerned about intense yet economical heat, to direct their minds to this, using science as far as they can in aid. After having devoted the larger portion of my hours of relaxation for twenty years to the working out and to the publication of the dry-earth system, and that in the face of this same opposition of science to facts, I own that, at the age of seventy-five, I am rather weary, not to say chilled and discouraged, in attempts of this kind to benefit the public. The dry-earth system, notwithstanding the oft-repeated scientific declarations of the worthlessness of the closet manure, has converted many a piece of waste land into a fruitful farm or garden. Witness 50 acres of the estate of the Royal Albert Asylum near Bagshot, and the Model Gardens at Hereford. *Henry Moule, Fordington Vicarage, March 21.* [It may be well to recall the unfavourable testimony of the engineers of the Brighton Railway on this point, though the different circumstances must also be borne in mind. Eds.]

Cypress Hedges.—It may be interesting to you to know that in Upper Canada hedges are formed of Cypress, and cut-in as is a Thorn or a Privet, and are the most beautiful, as also the densest and hardiest. I am not aware whether this has been tried in Britain, but several kinds including C. borealis, are perfectly hardy here, as will be seen by bits enclosed. *Aberdeenshire.*

A Substitute for Asparagus.—As supplementary to the article on Native Spring Vegetables in your last issue, I may perhaps be allowed to add a much more excellent substitute for Asparagus than any therein mentioned. "Hop-tops," as they are called in Kent, are a passable vegetable, but the "French Asparagus" of the Bath markets is without doubt the best of uncultivated vegetables. This, the young shoots of Ornithogalum pyrenaicum, I drew attention to at p. 602 of the *Gardeners' Chronicle* for 1867. *John R. Jackson, Museum, Kew.* [This was figured in our columns, 1873, p. 843. Eds.]

Exogenous Trees.—Some time ago a Cedar of Lebanon was blown down here, which had stood a century and more, and which girthed 7 feet at 3 feet from the ground. When the root was being cut off the original tree was found lying in the centre, but not adhering to the more recently-formed wood, and measuring 1½ inch in diameter; and also extending upwards rather more than 3 feet, with small branches attached to it as thick as a good-sized quill, but cut back to about 1 inch from the stem by some practised hand which had long since lost its cunning. There is something of the same character observable in the branches of our large Silver Firs when self-pruned; but instead of being longitudinally placed, as in the Cedar, they are horizontal—that is to say, when the root is cut up transversely the old branches in the middle-distance, between the centre and circumference, appeared like spokes of a wheel, but yet distinct from the recently-formed wood. *John Cate, Inveraray Castle Gardens.*

Hardy Palms, &c.—If Chamærops Fortunei is hardy in the cold Yorkshire district of Malton, as mentioned by Sir C. W. Strickland, no one need fear planting. I am not surprised that Eucalyptus will not succeed, as I believe that, except in a few favoured places, it will only prove hardy near the sea. Chamærops Fortunei will not always succeed. I know a place on the estuary of the Mowdwy in North Wales, where some fine plants growing in 10 inch pots were turned out in the spring of 1874. Two plants were planted on a sheltered plateau, open to Cardigan Bay, as well as some fine plants of Phormium tenax. All were killed in the spring of 1875. Within a short distance Arundo Donax variegata stands well, and Bambusa Metake and B. nigra are quite at home, the former making shoots 8 to 12 feet in a season—splendid objects in the sky line. The hardy Maréchal Niel Rose grows and flowers profusely in the same place. At the same time other plants were planted in a rocky glen a very short distance from the above, but not open to the sea, which are growing well. I see in your last paper Mr. A. S. Kemp has an article headed "Hardy Palms," which, by-the-by, is quite foreign to the subject. I never doubted the abilities of Mr. Wildsmith, or said one word about them; but as Mr. A. S. Kemp is so jealous of the honour of his friend, is he prepared to affirm that there are plants of Chæmarops humilis, 10 feet high, growing at Heckfield or in the county of Hants in the open air?—that is the question. *Owen Lloyd.* [There is a plant at Heckfield about 9 feet high, which has been planted about nine years, and for the last five years has received no protection. Eds.]

The Aucuba.—I notice in a popular gardening periodical many letters in reference to the fertilisation of the Aucuba, and among other suggestions is one for grafting the female plant with branches of the male. As I am quite sure that this, and all other artificial means of inducing the female Aucuba plant to berry are quite unnecessary, I will relate my own experience, which has been very successful. Some years since I received from the late Mr. James Veitch of London a very small male Aucuba plant, and with it he sent me a female plant in full berry. When the berries were quite ripe I sowed the whole of them in pots; in about seven months the seeds began to come up, and in the course of time I had a considerable number of fine young plants; these I planted out in different parts of my garden. About two-thirds of the seed-plants proved male plants, and this year, without the slightest trouble, or care, or attention, or any artificial means being used, the female Aucubas in the chief parts of my garden are literally covered with fine scarlet berries, thick as possible, in large clusters, convincing me that any one having the ordinary female Aucuba can, by only planting in the same garden a few male plants, have the most beautiful berry-bearing evergreen at this season of the year at present known. [This is our experience also. Eds.] In growing Aucubas from seed I have noted a few facts. There is a great preponderance of male plants. Some of the seed-plants have a small light green not spotted leaf, and the berries on such plants appear fixed at the end of each shoot, scarcely any stem appearing to which they are fixed; others have a large dark green leaf, and the berries hang in clusters like small bunches of scarlet Grapes, with a considerable stem. Nearly all my seedling plants have either small light green plain leaves or large dark green plain leaves; in some cases there is a slight effort at variegation, but it is too slight to be noticed or produce any effect, and in only one case have I raised a clear distinct beautifully spotted Aucuba, and whether this is a male or female plant I cannot yet tell, for I nearly killed it in moving—thinking to do it good, I did it harm: from some unknown cause every leaf went. I had only a small green stem left, but this stem last year sent forth a few small leaves: this year I hope to see it regain its former vigour, for in its first early growth the leaves were very large for an Aucuba. I notice also the nearer the male plant is to the female the more completely and thickly is the female plant covered with berries; but all my Aucubas, even at a very great distance from any male plant, have berries, except in the wild garden, where my favourite

plants, Brambles and Stinging Nettles, have to a certain extent covered over the Aucuba. In sowing Aucuba seeds I find you cannot depend on their germinating under seven or eight months. I have some now coming up which have been nine months, and two plants just appearing which have been rather more than eighteen months. There is the greatest advantage in growing Aucubas: they are very ornamental either as large or small plants, they grow in almost any soil, they grow under trees well, the foliage is always thick, they grow in city gardens or city courts, planted in tubs on or in the ground, admirably; they bear smoke well. For the decoration of halls or corridors where the light is dull or the air not the most pure, Aucubas answer well: and now, with the easy power of covering this plant with scarlet berries, no one liking plants having a garden, a court, a roof, a balcony, a hall, a passage, a staircase, a porch, anywhere where plants can stand, should be without an Aucuba with bunches of scarlet Grape-like berries. *K. K., Taddyforde, Exeter.*

Rhododendrons in Scotland.—In Scotland the planting-out of Rhododendrons has not had that experimental scope for which the soil and climate is undoubtedly congenial. We only see patches in well-sheltered gardens and shrubberies, which are more injured from the influence of heat than cold. In deep ravines, shady groves, and on mountain swamps, there are places well-suited for the Rhododendron, and where they would get naturalised, and be seen to much more advantage. Fancy Glen Farg, where the great North road from Edinburgh to Perth runs through; here the Rhododendron and many other exotic trees and shrubs would doubtless thrive. We may also notice Blair Drummond, Dunkeld, Blair Athol, Breadalbane, and many favourable places in Aberdeenshire and Banffshire. The nurseries teem with plants of every grade, and with transition quickly effected, and planting practicable almost at any season, the outlay is rewarded not only by the many admirers who laud the fortunes of the great, but in a great measure relieving the proprietors of what they too often spend unworthily. This would add to their pleasure a scene of indescribable grandeur, particularly in the introduction of various trees and shrubs harmonising in one heterogeneous mass of rocks, and trees and shrubs of richest flowers and foliage. It is needless to mention that, at most of the situations already noticed as being advantageous to the planting-out of American plants on a large scale, there may be seen admirable specimens of some of the older varieties, and where, indeed, thousands are springing up spontaneously. For their propagation we quote from Loudon that "They (admitting other American genera) are all propagated by seed or by layers, though grafting or inarching in some cases is more expeditious. The seed is either procured from America or saved in this country, and, being very small, is sown as early as possible in pans of peat-earth and placed in the shade. In winter it is placed in a cold frame, or otherwise protected from frost, and the plants come up in May or June. In the following autumn or succeeding spring they are pricked out into other pots, or into beds of peat-earth in a shady situation. Here they are protected by hoops and mats during winter, and in two years are again transplanted into similar soil and situation, and at distances corresponding to the size of the leaves or habits of the plants; here they remain till they flower, or till wanted to be removed to their final destination. They commonly flower from the fourth to the seventh year." The following is a list of some of the species and varieties that have been long introduced, and have proved suitable for the climate of Scotland:—

Rhododendron maximum, many vars.	Rhododendron chrysanthum
,, album	,, chamæcistus
,, purpureum	,, ferrugineum
,, ponticum, many vars.	,, hirsutum
,, Catawbiense	,, arboreum
,, myrtifolium	,, ,, album
,, Catesbæi	,, ,, cinnamomeum
,, venustum	,, ,, undulatum
,, azaleoides	,, ,, venustum
,, ,, odoratum	,, campanulatum
,, dauricum and vars	,, anthopogon
,, kamschaticum	,, barbatum
,, caucasicum	,, setosum
	,, lepidotum

The list of hybrids that have sprung from the above are almost endless, perhaps more ornamental as well as possessing a hardier constitution, hence they are best for planting out. *From a letter of the late John Robertson.*

Tuberoses.—Of all flowers used for decorating button-holes none is more appreciated than the Tuberose, and if they could be had in flower all the year round no real lover of flowers would ever tire or get weary of using them; their pure white flowers, of great substance, last a long time in perfection, and this combined with their delightful perfume, well adapt them for button-hole purposes. A few valuable hints on their culture from the able pen of Mr. Baines will be found at p. 635 of last year's volume, and if the cultivator puts into practice the advice given he will be sure to succeed, but should he wish to have them in flower during the months of October, November, and December, another course of treatment must be adopted. In the latter case the bulbs should be potted late in May or early in June; let them be placed in a cold frame, and entirely covered over to the depth of 2 or 3 inches with leaf-mould; place on the lights, and shade from the sun and drying influences of the external atmosphere, but give no water until they have made roots and commenced growth, then remove the leaf-mould from the surface of the pots, give them a moderate watering, and gradually expose them to light and air. When thoroughly hardened, remove the lights, and keep the plants fully exposed, except in wet weather, when the lights should be made use of to shield the plants from heavy rains. By the end of August or beginning of September some of the plants will be pushing up their flower-spikes. These should be removed to a house where they may enjoy a little warmth, which will be beneficial to them. By the middle of September the remaining portion should be removed from the cold frame to a house ranging in temperature from 45° to 50°, or to 55° in bright weather. This will be found a suitable temperature for them. They will push up their spikes at intervals, and give a successional supply of flowers at a season when they will be highly appreciated. I potted some last year on June 6, and treated them as described. A great many practitioners who visited this place during the season told me I was too late with them, and that they would not throw up any flower. But time proves all things, and so it did in this case. I got a supply of Tuberoses at a season when they were not thought of, and had a few flowers at Christmas, which is a time when all flowers of this character are highly prized. The Tuberose is not difficult to please in reference to soil, as mine were grown in road scrapings, with a liberal mixture of well-decayed leaf-mould. But I don't mean to say that such a compost is preferable to a mixture of good loam, far from it; but when gardeners are located where good soil is scarce (and every load of loam represents £1 1s. in the garden expenses, as is the case here), it is under such circumstances that one is in duty bound to make use of anything in order to pare down unnecessary expense, and which has induced me to make free use of road scrapings, which I find answers the purpose very well for a great many things. The most objectionable point in road scrapings is its porosity, which allows the water to pass away so freely that the water-pot has to be so frequently brought into requisition. *James Ollerhead, The Gardens, Wimbledon House.*

The Destruction of Plants by Frost.—We are so accustomed at the first advent of winter to see our summer plants frozen off and killed, that we have come to look upon it as inevitable, and to resign ourselves to our fate. Now I think that the following observations, that with your kindness I propose to make, go far to prove that their destruction is not caused directly by the low temperature, but rather by the congelation of their sap, and that the point at which that sap congeals varies very much with the conditions under which the plants have been grown. It is well-known that many plants that would be killed by a few frosts in England stand repeated freezings in the South of France, and scarcely look the worse for them: how is this to be accounted for? I think I can show that the power plants possess of resisting cold does not lie exclusively in their constitutions, but rather in the chemical composition of their juices, and in the power those juices have of resisting congelation. To prove this, take two glasses, one filled with water and the other with water containing an admixture of the juice of Cabbage leaves, and expose them side by side to the cold; at the point where the water freezes the water containing the Cabbage juice remains liquid; they both become equally cold—the one congeals, the other does not. This being the case, is it not fair to conclude, if Cabbages survive a degree of cold at which other plants perish, that their preservation is attributable to the non-congelation of their sap, which, had it taken place, would, by its hardening and dilating, have disintegrated the fibre and destroyed life? Thus it seems probable that the endurance of the cold that certain plants exhibit in the South must be rather due to the concentration of their juices by a hot, dry, and long summer than to the high temperature in the winter. On this principle, it appears to me possible, by increasing the proportion of saline and other constituents of the juices of our tender plants, to render them hardy, so that if we cannot make our winters milder, we might make our plants hardier. *B. Piffard, Hill House, Hemel Hempstead.*

Spelling the Word "Potato."—No single article—barring the pig—is of half the importance to poor people that the mealy Potato is, and sorry should I be to see "the blessed fruit that grows at the root" lose any of its importance by being misspelt. The Spelling Bees are already humming in our ears, and under favourable treatment they are likely to cast off swarms. Some time since you cleared up the knotty point of how to spell the single word Potato, and it has since been spelt, as I do now, without the "e" at the end of the noun of the singular number. I turned to *Johnson's Dictionary*, and found great comfort by seeing it spelt with the "e" at the end, my own genuine Potatoe. Now it was told us in my younger days that to settle disputes the English language was to be fixed at Dr. Johnson's orthography and pronunciation, and to aid and abet this rendering I took two similar words, "toes" and "foes," both having their singular numbers in "oe," as "toe" and "foe," exactly as our Potatoe used to be. Had "Potato" been a classic word it might have been traced to a Greek root, and all further wrangling silenced, just as we see in heraldry a family name traced to Charlemagne, there to rest unchallenged. Our northern neighbours over the border as well as those inhabiting the capital of the Sister Isle, pride themselves on the purity of their English, as exemplified in Inverness and Dublin. A curious instance of a different reading of the word in question was said to be given by a training groom in Ireland, who asked his master what such a foal should be called, and the careless owner pettishly said in his haste, "Call him Potatoes," which the groom entered "Potooooooo" in the stud-book, phonetic fashion—"Pot eight o's." From examples of this kind it is clear that the simple word has been tampered with. Loudon and Lindley leave out the "e," and all well-ordered minds have long ago been converted to the modern spelling, still I feel sorry to see such a good word cut short at the toe, and should feel obliged by your looking over the file of the *Gardeners' Chronicle* for the reasons there given for the change, for there must be reason on both sides, where Dr. Johnson is at fault. *Thomas Murphy.* [The mode of spelling adopted by us was sanctioned by Dr. Latham, the latest editor of Johnson. Eds.]

Garden Hybrids. — Your correspondent, Mr. F. W. Burbidge, will please accept my best thanks for the evidence which he has given in support of his former assertion that "the Japanese Retinosporas are frequently produced from seeds of the oriental and occidental Biotas or Thujas." The strongest evidence given is that he "on two separate occasions selected plants of Retinospora filifera from seed-beds of Thuja (Biota) orientalis." The first time he was doubtful as to their Thuja parentage, but "on the second occasion I gathered the Thuja seeds with my own hand, and was convinced that the Retinosporas sprang from the Thuja seeds." Granting it all, has it not occurred to Mr. Burbidge that the essential proof of the plants being R. fillfera is wanting, namely, that their fruit is like that of R. filifera of Japan? Although quite prepared to expect from seeds of Biota orientalis something akin in appearance to R. filifera, just as Biota pendula somewhat resembles it, yet I am not just ready to expect Retinospora filifera from seeds of Biota orientalis. In support of his views Mr. Burbidge quotes some recent remarks of mine on the probable parentage of R. filifera, but I am very sorry that he has failed to catch my meaning. The seedlings which I spoke of as having been raised by me in California were from seeds gathered from a plant of Biota pendula or filiformis, and not from R. filifera; that, instead of taking on the character of their undoubted parent, they persistently assumed the character of Biota orientalis. *Geo. Syme, Elvaston Nurseries, Borrowash.*

Mushroom Growing at Croxteth Park.—Under the able superintendence of Mr. Bisset, the mode of cultivation I am about to describe is well carried out at the Earl of Sefton's, Croxteth Park, Liverpool. The Mushroom-house is a span-roofed one, 10 yards long and 5 yards wide, running east and west. It is covered with a blue slate roof, but to check the burning influence of the sun, and to ward off the drying effects of the external atmosphere, there was a flat-boarded top placed about level with the eaves of the outside roof, the space between the two being well packed with sawdust. Not only does the system of double-roofing assist in economising fire-heat, but it serves greatly to impart a genial moist atmosphere to the interior. Ventilation is given by slides in the boarded top, over which are placed open-air ventilators. There is also a window at one end, darkened by a close-fitting shutter, which, when required, is opened to admit light, or a greater supply of air should it ever be deemed necessary. There are two sets of shelves, upon which the beds are made, 4 feet wide and 14 inches deep, arranged on each side of the house, and running the whole length, leaving plenty of space in the centre to do all necessary work. The shelves consist of smooth slate fronts and bottoms, held together by strong iron supports. The heat is supplied by a single pipe running round the house, 9 inches above the level of the floor. For the making of a new bed the quantity of horse-droppings required is previously gathered and well spread out in an open shed, and turned twice or three times weekly until consi-

dered in a fit state for putting together. At the bottom of each bed is put about 6 inches of old leaves, or, still better, the top of an old bed; then about 4 inches of horse-droppings, well beaten down with a mallet. On the top of this is a slight covering of deer's dung, then 4 inches more droppings, the whole being well beaten together and left for a few days. The old system of putting in the trial sticks to indicate the heat is here adhered to, and when the heat is found to be nicely on the decline the bed is at once spawned. The soiling generally takes place in about three days afterwards, but should the heat appear to keep rather strong the operation is deferred. About 1 inch of common garden soil is used for the purpose, well beaten down with the back of a spade, and the surface made smooth. Should the heat of the bed become rather low, which is very seldom the case, mats are used for covering and a little fire-heat applied; but the temperature of the house is never allowed to rise above 65°. The beds generally commence bearing in about five weeks, but are considered to be getting in their prime from six to eight weeks. Mr. Bisset uses spawn of his own make, and it is certainly of excellent quality, the only ingredients used for making it being horse-droppings, cow-dung, and as much road scrapings as will make the whole stick well together. After the bricks are made they are laid on a bench outside to become sufficiently dry for putting in the spawn. When the bricks are spawned they are built up in the form of a brick-kiln and covered over with warm dung, in which state they are allowed to remain until the spawn is considered to have run well through the bricks. They are afterwards stored away in boxes, and put in a dry place until required for use. *J. Leadbetter, Croxteth Gardens, Liverpool.*

Lilies of the Valley.—At the meeting of the Floral Committee, held on March 1, Mr. Herbert, nurseryman, Richmond, exhibited batches of two sorts of Lily of the Valley, which were very distinct; and as it is not generally known that there are two varieties, and one better than the other, we have had the accompanying engravings prepared to scale to demonstrate the fact. Fig 76 represents the best form, which is obtained from Germany, and which is of a more stocky growth than the other, with a stouter spike of larger flowers, which open white to the end; while in those represented in fig. 77, which comes from Holland, the endmost undeveloped bells frequently remain green. The plant, it will be seen, is of a more spindly growth, with longer and narrower leaves, and looks altogether weak and drawn, though both were grown under similar conditions. When seen in batches the first-named takes the eye at once, as being the most desirable variety of the two to grow, and for market work there can be no doubt about it. Eds.

Early Rhododendrons.—A portion of the moat, long since dry, which used to surround the castle at Tunbridge, runs through the garden of a house near the vicarage, and near the bottom of this warm and protected ditch, which is about 25 feet deep, there is a bed containing four dwarf plants of pale pink Rhododendrons, of which I send you pips of the lightest and the darkest varieties. These plants have been covered with trusses of flowers for the last three weeks; and, though the snow and winds have knocked about the expanded blossoms, there are enough unexpanded trusses to keep the bed gay for at least three weeks longer. *W. T. T.*

Setting Peaches with the Syringe.—I am tempted to send you a few examples of our Peach and Nectarine setting, from the flowering stage up to the size of marbles, after one of the worst seasons for forcing, so far, I have ever known. I have sent you such examples before; I could send you a hack-load now, and could have done so for years back—indeed ever since I went the "whole hog" with the syringe. Verily the syringing practice "does no harm," as Mr. Hinds states, but a very great deal of good. I have said so before, and say so again; and I make the statement after having tried both the wet and dry systems repeatedly, and always with the same result—namely, that the syringed trees set the greatest quantity of fruit. Mr. Hinds talk so confidently about his "convictions," &c., against syringing, that I am tempted to ask upon what basis they are founded? To what extent has he experimented in this direction, and will he tell us with what results? If he has not experimented on his own account, then I submit, with due respect to his authority as a Peach grower, that he is not in a position to offer an opinion in the matter, let alone give advice. I do not wish him to launch at length into the subject to answer these questions; they are put categorically—and will he answer them in the same way, and oblige? Meanwhile, I can assure him that he need not hesitate to recommend the syringe to those gardeners round about Liverpool and elsewhere, and which he seems to have taken under his tutelage. If they are a class who "owe their very existence" to the information supplied to them through the horticultural papers, they should be quite able to masticate their own food, and it is no part of a writer's duty to chop it up for them. Possibly, however, I have about as much experience of the class to whom Mr. Hinds alludes as he has, and am inclined to think he rather libels their character in this respect. When interested in their charge I find they are generally just as sharp as their neighbours in discerning what is right and wrong in their practice as gardeners. *J. Simpson, Wortley.* [Nothing could be more satisfactory than the examples sent from Mr. Simpson. Eds.]

Fig. 76.—Lily of the Valley: variety imported from Germany.

Fig. 77.—Lily of the Valley: variety imported from Holland.

Syringing Peaches.—Mr. Simpson (p. 372) imagines, I think, that he has found a mare's nest, in refreshing my memory of what I take to be past offences. I admit that dipping the Muscat bunch in water while in flower was an experiment with no bad effect, and as to syringing Peach trees while in flower, your correspondent is quite at liberty to construe my article to his own benefit just as much as will please himself. I have syringed Peach trees while in flower long ago, and as to anything which I have contributed lately it is only supported by more experience—not that I grow Peaches or Nectarines better now than I did then, and certainly not better than I did previous to coming to Worksop Manor. Your correspondent, I trust, will accept my kindest thanks for the trouble he has taken to keep me on the right subject, and if it pleases him to poke me in the ribs it does me no harm, for I neither wish to make myself appear a charlatan nor a recluse in matters appertaining to our profession. But unfortunately he (Mr. Simpson) wields a pen like a Jew's razor—it cuts both ways; and he, being a clever man himself, has a great opinion of his own cleverness, which I give him great credit for, but in showing his superior ability in laying siege to a weak opponent like myself, he labours under a difficulty in not withdrawing his steel without leaving a wound—which I do not consider acting with charity to a neighbour. I must not forget to thank Mr. Simpson for his testimony as to what I have done in cultivating the Peach. *J. Miller, Clumber.*

The Royal Horticultural Society.—At the general meeting of the Royal Horticultural Society some few weeks ago it was passed, so I read in the different papers, that gentlemen who had ceased to be Fellows might renew their Fellowships on their paying the annual subscription, and would not have to repay the entrance fee. Consequently I applied, and was informed by the Secretary that I might do so on paying up my arrears (£6 6*s*. I think the sum was). Now, sir, what absurdity this is! for I gain nothing this way, and it is not likely I am going to repay my arrears after having ceased to be a Fellow. I certainly think the resolution passed will not bear this interpretation. *A Late Fellow.*

Notices of Books.

The Bee Preserver; *or, Practical Directions for the Management and Preservation of Hives.* By J. De Gelieu. Translated from the French by Miss Stirling Graham. Second edition. Edinburgh: Edmonston & Douglas.

This little work is well-known to the apiarians of this country, especially to the old-fashioned beekeepers, who are followers of Mr. Cotton. The title is attractive, and those who condemn the horrid brimstone pit will turn over its pages with pleasure. It certainly contains but little new information, nor does it profess to be up to the present improved methods of management. It has, however, many points of commendation: it is written in simple homely language, such as will delight a cottage beekeeper. Sitting beside his rustic apiary, with his long Broseley pipe, during the long summer evenings, after his daily toil, he will scan its pages with something like the relish that some of his titled neighbours will feel when reading Scott's or Dickens' books.

We also hope it will find many readers amongst our well-informed gardeners, for its reasonable price is certainly within reach of most persons. Miss Graham, abhorring, like every lover of peace, the fierce battles not infrequent amongst bees in autumn, tells us, what is worth making a note of, that a wet cloth spread over the weaker hive is often a "sure cure." The best plan is making the entrance so small that only about two bees can pass and repass at the same moment; yet it is a novel idea to employ a damp cloth. At all events, we recommend an honest trial of what can do no harm, if it does no real good. We heartily advise our readers to make it a part of their bee literature; it will well repay perusal.

—— The last numbers of the *Belgique Horticole* which have reached us comprise a portrait and brief note on the life and labours of Quetelet, the director of the Royal Observatory at Brussels, a savant of the first rank and one who, more especially by his observation of the periodic phenomena of vegetation, rendered great services to vegetable physiology. Billbergia Porteana, of which a coloured plate is given, is remarkable for its long inflorescence adorned with large crimson bracts. The list of Palms grown at Herrenhausen, and translated from an article in the *Hamburger Garten und Blumenzeitung* will be serviceable to many not conversant with German. It forms the most complete catalogue of cultivated Palms with which we are acquainted.

—— Under the title *Picturesque Europe*, Messrs. Cassell have published the first part of a richly illustrated periodical, designed to give representations of some of the most beautiful and interesting spots in Europe. Judging from the number before us, the woodcuts are of so high an order of merit as to insure the appreciation of the public. The work begins with an account of Windsor, which is of the more interest to us from the circumstance that one of our own supplements was devoted to the illustration of the gardens and park. This circumstance leads us to note that the fine torso of an Oak figured on p. 19 is not the tree known as "William the Conqueror's Oak." This was figured by us in the supplement in question, and a coloured illustration of it is to be found in Mr. Menzies' recently published *Forest Trees and Woodland Scenery*.

—— The February number of the *Illustration Horticole* contains news of the safe arrival of M. André in Colombia. When last heard of he had reached the vast forests between the rivers Meta and Guaviare. A first consignment of plants collected by M. André reached M. Linden at the end of December. The plates in this number are devoted to Aphelandra nitens var. Sinitzini, Populus Van Geertii, a golden-leaved form of P. canadensis, already alluded to by us; and Goodyera velutina, with ovate velvetty leaves, striped with yellow, and purplish on the under surface.

—— The March number of the *Florist and Pomologist* opens with a splendid figure of the hybrid Lilium Parkmanni, whose portrait and history have been given in our columns. The coloured plate given by our contemporary serves even more fully to display the splendour of this magnificent Lily. The articles on Carnations and Auriculas give evidence that the interest in florists' flowers is by no means extinct.

—— The March number of the *Botanical Magazine* opens with a double plate of the very handsome Cypripedium Roezlii, tab. 6217. It is a native of New Grenada, and has strap-shaped leaves 2 feet long, spicate flowers each about 5 inches by 7 inches; the upper sepals yellowish green with a rosy purple border, the two lateral sepals combined into an ovate-acute flesh-coloured segment. The two lateral petals are very long, linear, spreading horizontally (like waxed moustachios), edged with bright red-purple. The lip is greenish and yellow within. The plate was taken from a plant in the possession of Messrs. Veitch. Anthurium Saundersii is a handsome Aroideous climber with bright green glabrous, digitate leaves, the segments being long, linear and pointed. Its native country is not known. Episcia erythropus, t. 6219, is a Gesneraceous plant introduced by Messrs. Veitch, from New Grenada. The plant is almost stemless, with large stalked lanceolate serrate acuminate leaves, reddish on the under surface and along the petiole; the flowers are fascicled in the axils of the leaves, and resemble those of a pale flesh-coloured Achimenes. Talinum Arnottii, t. 6220, is a botanical curiosity with a very hardy woody stock, from which proceed herbaceous shoots with stalked ovate, entire glabrous leaves, and stalked yellow, five-petalled flowers about 1 inch in diameter. It is a native of the Griqua States of South Africa, and is one of several plants having the same general habit, the stocks serving as "reservoirs of moisture during the scorching droughts of the dry, stony districts they inhabit." Bouchea pseudogervao, tab. 6221, is an annual Verbenaceous plant, with flowers like those of a purple Verbena, but larger, and arranged in spikes, not in heads. The plant looks a likely subject for the florist to take in hand, and, though called an annual, we should not be surpised if perennial varieties make their appearance, or, at least, that the plant becomes as tractable as the Verbena itself. The name pseudogervao means, we are told, false Vervain, in allusion to the resemblance to the Verbena. Messrs. Veitch have the credit of introducing this plant.

—— The February number of the *Revue de l'Horticulture Belge* opens with a coloured plate of the double-flowered Deutzia crenata, a very ornamental shrub, not so much grown as its merits deserve. M. A. Van Geert, Jun., contributes an article on new plants of the year, M. Jadoul one on the plants most suitable for bedding out. In the last number of the same periodical we find a coloured plate representing Toxicophlæa spectabilis—a stove plant with dense masses of fragrant white flowers, introduced by Mr. Williams, of Holloway. The same plant is also figured in the Russian horticultural journal, *Westnik*.

—— In the last number of the *Grevillea* is a note stating that Dr. Thwaites has succeeded in watching the germination of the Coffee-leaf Fungus (Hemeleia vastatrix). Messrs. Berkeley and Broome maintain that this fungus holds an intermediate placé between Uredines and Moulds.

—— The plates in the *Gartenflora* for January represent Calathea undulata, a species with a central band of white on the upper surface of the green leaves, the under surface being of a rich claret colour; Prunus tomentosa, a Chinese or Japanese species, with white flowers, and small red Cherry-like fruits; Lepidozamia Denisoni is a handsome pinnatisect Australian Cycad.

Law Notes.

ALLEGED BREACH OF A SALESMAN'S CONTRACT.—At the Bloomsbury County Court, on the 10th inst., the case of *Swanston* v. *Thomas* was tried before G. Lake Russell, Esq., judge, and a jury. The plaintiff, a salesman in Spitalfields Market, sued the defendant, a salesman of Covent Garden Market, to recover the sum of £15 15*s*. From the opening of Mr. Pocock, counsel for the plaintiff, it transpired that his client entered into a contract with the defendant for the supply of 150 bags of Potatos, in April, 1873, and paid the sum of £5 as a deposit to a Mr. Blackman, the defendant's foreman, and subsequently £18 15*s*., and on April 10 he paid the balance, all to the same person, from whom he asked for a delivery note for thirty sacks required to complete the contract, and he was told that one would be forwarded to him by post. Not receiving it, the plaintiff again applied to the defendant for a delivery note to the Dundee Wharf, when he was told that the contract was for 200 sacks, and that upon payment for the fifty additional sacks a delivery note for eighty would be given. This being done, the plaintiff not receiving the Potatos brought the present action, which included the sum of £4 15*s*., which he estimated as the loss of market. In cross-examination by Mr. Turner (for the defendant), the plaintiff denied receiving any written communication from the defendant, and had not brought this action earlier because at the time he was a rich man, but now he was in reduced circumstances and required the money.

Mr. Blackman said he was the defendant's foreman, and remembered the plaintiff, in April, 1873, ordering the Potatos in dispute, which were charged at the rate of 7*s*. 6*d*. per sack, and that the whole of the delivery notes were given to the plaintiff, who allowed the Potatos to remain at the wharf for nearly two months.

The defendant's brother being called said, that finding the Potatos were not removed from the wharf he told the plaintiff that extra wharfage was incurred, and if not paid the Potatos would be sold in fourteen days to defray expenses.—In cross-examination by Mr. Pocock the witness said that the Potatos were sold to a salesman at Southampton at 75*s*. per ton.

The defendant being called stated that he first heard of the transaction on May 11, when the balance due to him was not paid; nevertheless the whole of the Potatos were delivered to the plaintiff by delivery note, but the plaintiff had neglected to clear them.

At this stage the learned Judge stopped the case by remarking that, looking into all the probabilities of it, and observing that the plaintiff had allowed the claim to remain in suspense so long, he must give judgment in favour of the defendant; and upon the application of Mr. Pocock his Honour certified for the plaintiff's costs.

NOT UP TO SAMPLE.—At the Bloomsbury County Court, on the 20th inst., the case of *Atwood* v. *Rowe* was heard before Mr. Judge Russell, in which the plaintiff, a Potato salesman, of King's Cross, sought to recover from the defendant, a salesman, of Earl Street, St. Martin's Lane, the sum of £7 7*s*., being the balance due upon the amount rendered for twenty-six sacks of Potatos sold to defendant on Dec. 22 last.

John Bear, foreman to the plaintiff, stated he sold the Potatos on the day in question, at the rate of 145*s*. a ton. The defendant opened two sacks, and ordered them to be sent to his address. Two days after they were sent he received a letter from the defendant complaining of their quality, in consequence of which witness called upon the defendant, and, finding some bad Potatos in the consignment, he allowed 35*s*. by way of compensation for any loss sustained.

The defendant said he found the Potatos unfit for human food, and told the plaintiff to fetch them away.

F. Kingwell, carriage builder, and Richard Lyford, a cook and cutter, were called, and corroborated the defendant's statement as the quality of the Potatos.

The learned Judge then told the defendant that if he bought goods in this way in bulk he must take the risk and pay the money, as there was no written or implied warranty; and that if he wished to support a defence to any future action of a similar nature he must be careful to obtain a warranty with the goods he purchased.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, MARCH 22, 1876.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Mar.	In.	In.	°	°	°	°	°	°			In.
16	29.46	−0.40	50.3	32.8	17.5	40.7	− 0.8	34.6	79	W.	0.00
17	29.55	−0.30	43.0	31.9	11.1	36.9	− 4.7	28.7	73	WNW.; W.	0.00
18	29.79	−0.04	42.8	28.4	14.4	35.1	− 6.6	29.1	77	N.W.; NNW	0.00
19	29.80	−0.02	36.3	25.8	10.5	30.0	−11.7	24.2	78	NNW; N.; N.N.E	0.18
20	29.84	+0.03	41.1	27.3	13.8	32.0	− 8.8	29.0	85	NNW.; N.	0.00
21	29.69	−0.11	39.8	27.8	12.0	32.6	− 9.2	27.6	82	SW.; S.; S.E.	0.02
22	29.72	−0.08	41.9	25.2	16.7	32.3	− 9.7	29.0	87	NNE.; N.E.	0.12
Mean	29.69	−0.13	42.2	28.5	13.7	34.3	− 7.4	28.9	80	N.	sum 0.32

March 16.—A fine day, partially cloudy. Occasional slight showers.
— 17.—Fine, but dull at times. Cold. Slight snow fell at 3.45 P.M. Strong wind.
— 18.—A fine day, cloudy. Very cold.
— 19.—Dull and very cold. Snow fell from 5 A.M. till noon. Depth, 2½ inches. Occasionally fine after.
— 20.—Fine, but very cloudy. Cold. Occasional slight snow.
— 21.—A dull cold day. Snow fell from 4 P.M. till about 10 P.M.
— 22.—Fine, but dull and cold. Occasional heavy showers of snow and hail.

—— During the week ending Saturday, March 18, in the vicinity of the metropolis, the reading of the barometer at the level of the sea decreased from 29.27 inches at the beginning of the week to 28.44 inches by about noon on the 12th, increased to 29.69 inches by noon on the 13th (the reading having thus increased 1¼ inch in twenty-four hours), it then decreased to 29.26 inches by noon on the 15th, increased to 30 inches by noon on the 18th, and was 29.99 inches at the end of the week. The mean reading for the week was 29.53 inches, being 0.19 inch above that of the preceding week, but 0.52 inch below the average.

The highest temperatures of the air observed by day ranged from 55° on the 14th to 41° on the 12th;

the mean for the week was 47½°. The lowest temperatures of the air observed by night varied from 28° on the 13th to 38° on the 14th. The mean value for the week was 32½°. The mean daily range of temperature for the week was 14¾°, the greatest range in the day being 19½° on the 13th, and the least 9° on the 12th. The mean daily temperatures of the air, and the departures from their respective averages, were as follows:—12th, 34°.5, — 6°.3; 13th, 36°.2, — 4°.8; 14th, 46°.1, + 4°.9; 15th, 43°.1, + 1°.7; 16th, 40°.7, — 0°.8; 17th, 36°.9, — 4°.7; 18th, 35°.1, — 6°.6. The mean temperature of the air for the week was 38°.9, being 2°.4 below the average of sixty years' observations.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the sun's rays, was 109° on the 16th; on the 12th the reading did not rise above 53°; the mean for the week was 90°. The lowest reading of a thermometer on grass, with its bulb exposed to the sky, was 20½° on the 18th; the mean for the seven low readings was 28¼°.

The direction of the wind was W., W.S.W., and W.N.W., and its strength strong. The weather during the week was dull and cold, with strong gales of wind. On the 12th heavy hail, rain, and snow fell, accompanied by a whirlwind. Rain fell on four days; the amount collected was 0.92 inch.

In England, the highest temperatures of the air observed by day were 56½° at Plymouth, 55° at about London and Truro; at Bradford 49½° was the highest temperature in the week; the mean value from all stations was 52°. The lowest temperature of the air observed by night was 25° at Sunderland; at Truro 36° was the lowest temperature in the week; the mean value from all stations was 29½°. The range of temperature in the week was the greatest at Sunderland, 28°, and the least at Truro, 19°; the mean range from all stations was 22¾°.

The mean of the seven high day temperatures was the greatest at Plymouth, 50½°, and the least at Hull, 42¾°; the mean from all stations was 46°. The mean of the seven low night temperatures was the smallest at Eccles and Sunderland, 31¼°, and the largest at Truro, 40¾°; the mean value from all stations was 33½°. The mean daily range of temperature in the week was the greatest at about London, 14¾°, and the least at Truro, 8¾°; the mean daily range from all stations was 12¼°. The mean temperature of the air for the week was 38½°, being 1½° higher than the value for the corresponding week in 1875. The highest was 44°, at Truro; and the lowest 36½°, at Wolverhampton and Hull.

Rain or snow fell on every day in the week at Liverpool and Hull, and on six days at most other stations; the amounts measured varied from 1¼ inch, at Sheffield, Bradford, and Newcastle-on-Tyne, to a quarter of an inch at Brighton; the average fall over the country was three-quarters of an inch. The weather during the week was dull, cloudy, and stormy; snow, hail and strong gales of wind were prevalent over the country.

During the heavy gales of wind in the past week much damage was done to property, and in a few cases loss of life ensued. Many wrecks occurred around the coast, and telegraphic business was partly stopped, owing to the wires having been blown down. Sunday the 12th inst. was a very destructive day, both in London and the provinces.

In Scotland, the highest temperatures of the air ranged from 49° at Paisley to 45° at Greenock and Perth; the general average was 46¼°. The lowest temperatures of the air varied from 22½° at Aberdeen to 28° at Perth, the general average being 24¾°. The mean range of temperature in the week was 22°. The mean temperature of the air for the week was 35°, being 2½° lower than the value for the corresponding week in 1875. The highest occurred at Paisley, 36°, and the lowest at Glasgow, Dundee, Aberdeen, and Perth, all 34¾°.

Rain fell to the amount of 1¼ inch at Greenock, at Paisley 1 inch was measured, but at Dundee a quarter of an inch only fell; the average fall over the country was three-quarters of an inch.

At Dublin the highest temperature of the air was 51°, the lowest 25°; the range 26°, the mean 37¾°; and the fall of rain 0 40 inch.

JAMES GLAISHER.

Enquiries.

He that questioneth much shall learn much.—BACON.

106. LIMESTONE AS FUEL.—Will some of your readers kindly say why limestone is used with anthracite coal in the smelting of iron ore? I know it was largely used in my husband's iron furnaces (in Wales), but I never thought of asking why then; I now see a discussion is going on in your pages with respect to its heating properties, so enquire. *Helen E. Watney.*

107. FESTUCA COOKII.—Do you or any of your readers know a grass named Festuca Cookii, or Cook's Fescue? A friend enquires for it (from Canada), and I do not find it mentioned in any of the books on grasses or on botany that are within reach. *A. P. D.* [We have never heard of the plant. EDS.]

108. SINCLAIR & CLAYTON'S PATENT LAWN SWEEPING, COLLECTING, AND ROLLING MACHINE, advertised in the *Gardeners' Chronicle*.—Will you kindly request any of your correspondents who have tried this machine to give me their opinion of it? *An Old Chronicler.*

Answers to Correspondents.

*** We must beg the indulgence of numerous correspondents, whose communications are necessarily delayed by the great demand on our space.

AUCUBA SEEDS; *T. Taylor.* Sow as soon as you find it desirable to gather in the seeds, which may be any time this month or next. If you have but few sow in a pan or box, and keep in a cold frame; if many, sow in a sheltered bed outdoors. Some will germinate in the autumn, and some next year. See also p. 403.

CATTLEYA GIGAS: *E. J. C.* The plant was figured and described in our number for November 14, 1874, p. 617. A letter from its discoverer, M. Gustavus Wallis, was published in the number for February 6, 1875.

GRAFTING AUCUBAS: *Aucubas.* They may be grafted any time in the early spring months, as soon as the sap begins to move gently, the scion having been retarded.

GRAFTING CAMELLIAS: *A Young Gardener* may cut down his Camellias to within a foot of the soil and cleft-graft them as he would a fruit tree, putting in two or four according to the size of the stock, securing them round with bast and covering with well-prepared grafting clay. They should be cut down without delay, as if deferred until the sap has begun to rise it will flow to such an extent as to prevent the grafts taking. The work must be done before the buds of the shoots (last year's growth) begin to swell. The stocks as soon as grafted should be placed in a moist heat of about 60° in the night. With healthy stocks the shoots grow so rapidly as to require stopping two or three times during the summer, or bending down to induce them to break back. The operation, to be successful, should be carried out immediately.

KIDNEY BEANS: *W. Horne.* 1, it is always more or less true, that imported seed of Kidney Beans are more inclined to "run" (*i.e.*, to become a sort of half-runners), than seed grown in this country: Italian seed is least of all to be depended upon; 2, yes, and much later if the seeds have been kept in the seed pods.

MARECHAL NIEL ROSE: *Ipswich.* Who said it was 500 yards long? If you are still doubtful, pay Mr. Harrison a visit.

MICE: *C. N. D.* Try baiting the traps with toasted cheese, put on fresh every night.

NAMES OF FRUITS: *John Day.* Warner's King. *I. O. W.* 1, Beurré Brettoneau; 2, Knight's Monarch; 3, St. Germain.—*T. P.* 1, not quite certain; 2, Barchard's Seedling.—*E. C.* Alfriston.

NAMES OF PLANTS: A correspondent, who sent us three Privets to name without numbers, will oblige by sending us his address.—*W. Jones.* 2, Campylobotrys Ghiesbreghtii; 3, Coprosma Baueriana variegata; 4, Cyrtomium falcatum; 5, Polypodium vulgare cambricum; 6, Adiantum reniforme; 7, Platyloma rotundifolium; 8, Onoclea sensibilis; 9, Pteris longifolia. The others indeterminable.—*Y. Y.* 1 is a hybrid form of Begonia, which we have no means of naming: it may be B. Lemminghii; 2, B. semperflorens.—*Dendrobe.* We have been unable, so far, to name your Orchid, but if you will send another flower or two we will take sure means to do so.—*A. Boyle.* Anemone hortensis var. vulgens.—*W. T. T.* Grevillea rosmarinifolia. Propagated by inserting ripened cuttings in sand, and placed under a bell glass.—*J. P., Highgate.* 1, Ophrys lutea; 2, Ornithogalum umbellatum.—*A Subscriber.* Daphne laureola.

POTATO: *Bates.* Scotch Blue, supposed to have been raised by the late Mr. Paterson, of Dundee, is distinct from the old Scotch Blue, medium sized, smooth even outline and dark violet skin, flesh white. Wood's Scarlet Prolific is a long red-skinned Potato with deep eyes, very coarse in appearance. Birmingham Blue is a second early round, pale purple in colour, and is supposed to be a seedling raised near Birmingham. Bresee's Peerless is a half long or flat round Potato, sometimes approaching the kidney shape and sometimes quite round, variable in the matters of shape and quality.

PREMIER KIDNEY POTATO: *Ransley Tanton.* From evidence in our possession we believe you are labouring under a great misapprehension, and we must decline to admit your letter into our columns, as we have no wish to libel any body.

SOWING APPLE AND PEAR PIPS, &c.: *Old Subscriber.* The seeds of these should be sown as soon as gathered, or, at all events, kept in moist earth until they are sown in March. Haws require to be placed in a heap (to rot the berries) for some time before sowing, and the seed will remain in the ground over twelve months before growing. The seeds of all may be sown pretty thickly, and, at the end of the first season's growth, the plants may be put out into nursery lines. Replant or transplant the following season a little wider apart, and so on every year until they are of sufficient thickness for grafting purposes, which will be at the end of the fourth or fifth year.

THE AQUARIUM SPRING SHOW: *D.* You should call the attention of the managers to the fact. It concerns them more than it does us or our readers.

VINE-LEAVES DISEASED: *H. C. R. B.* The main injury has been done by some grub, which has disappeared; but there are some suspicious-looking bodies, which may be the incipient galls of the Phylloxera. Send another supply of specimens, moist enough to keep them fresh.

VINES: *J. W.* We cannot make out anything particularly the matter with your Vine roots. They are not healthy certainly, and appear very gross. We are inclined to think the soil and border generally is too damp and soddened. We would, therefore, recommend you not to interfere with the roots just now. Take off your crop first, then in early autumn take up the Vines, saving all the roots possible, renew the border, and replant.—*X. Y.* Probably the roots are rotting in the wet ground beyond the border. We will reply further next week.

☞ FOREIGN SUBSCRIBERS sending Post Office Orders, and which are to be paid at the post-office, King Street, Covent Garden, London, are requested to be good enough to write to the Publisher, at the office of this paper, 41, Wellington Street, Covent Garden, at the same time, to inform him of the fact.

COMMUNICATIONS RECEIVED.—C. W. S. (thanks).—H. J. V.—Sims.—J. C. (thanks).—K.—J. H. G. (too late for this week).—T. C. B.—J. P. C.—W. P.—Rusticus (next week).—W. Hinds.—M.—A. D.—D. R.—Golden Thyme (we do not know the address of the Weather Forecast Association).—X. Y. (next week).—A. F.—W. H. F.

MARRIED.—On February 19, at St. George's Cathedral, Madras, by the Ven. Archdeacon Drury, Major EMERIC S. BERKELEY, Madras Staff Corps, eldest son of the Rev. M. J. Berkeley, F.L.S., to FLORENCE, second daughter of George Hicks, Esq., of Royston Villa, Clarendon Road, Bayswater.

*** IMPORTANT NOTICE.—*The* AGRICULTURAL GAZETTE *is now* PUBLISHED *on* MONDAYS, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, March 23.

There is no recovery from the dulness of last week—in fact, prices are barely maintained. Good samples of late Grapes are in demand, otherwise the market is well supplied with all classes of goods. *Jas. Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1 0	2 6	Oranges, per 100	6 0	12 0
Cobs and Filbts., lb.	0 6	0 9	Pears, per doz.	3 0	10 0
Grapes, per lb	3 0	12 0	Pine-apples, p. lb.	1 6	4 0
Lemons, per 100	6 0	10 0	Strawberries, per oz.	1 0	2 0
Melons, each	0 0	0 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz.	4 0	..	Leeks, per bunch	0 2	0 4
— Jerusalem, p. lb.	0 3	..	Lettuces, per score	2 0	..
Asparagus (English), per bundle	7 0	12 0	Mint, green, bunch	0 6	1 0
— French	18 0	25 0	Mushrooms, per pott.	1 0	2 0
Beans, French, p. 100	1 3	2 6	Onions, young, bun.	0 4	0 6
Beet, per doz.	1 0	2 0	Parsley, per bunch	0 4	..
Brussels Sprouts, lb.	0 4	..	Peas, green, per lb.	1 6	..
Cabbages, per doz.	1 0	2 0	Potatos (new), baskt.	1 0	..
Carrots, per bunch	0 6	..	— new Jersey, p. lb.	1 0	2 0
— new, do.	2 6	..	— Sweet, per lb.	0 6	..
Cauliflowers, p. doz.	2 0	4 0	Radishes, per bunch	0 1	0 3
Celery, per bundle	1 6	2 0	— Spanish, doz.	1 0	..
Cucumbers, each	0 6	2 0	— French	0 6	..
Endive, per doz.	1 0	2 0	Rhubarb, per bundle	0 6	1 0
— Batavian, p. doz.	2 0	3 0	Salsafy, per bundle	0 9	..
Herbs, per bunch	0 2	0 4	Seakale, per punnet	2 0	3 0
Horse Radish, p. bun.	3 0	5 0	Shallots, per lb.	0 3	..
			Turnips, per bundle	0 4	..

Potatos—Rocks, 105*s.* to 110*s.*; Regents 120*s* to 170*s.*

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	4 0	12 0	Mignonette, 12 bun.	6 0	9 0
Azaleas, 12 sprays	0 6	2 0	Narcissus, per dozen	1 0	3 0
Camellias	1 6	9 0	Pelargoniums, 12 spr.	1 0	3 0
Carnations, 12 blooms	2 0	4 0	— Zonal do.	0 6	1 6
Cineraria, per bunch	1 0	2 0	Primula, dbl., p bun.	1 0	1 0
Cyclamen, 12 blooms	0 3	0 6	Rhododend., 12 hds.	3 0	6 0
Epiphyllum, p. doz.	1 0	3 0	Roman Hyacinths, 12 sprays	1 0	3 0
Eucharis, per doz.	6 0	12 0	Roses, indoor, p. doz.	1 6	10 0
Euphorbia, 12 spr.	4 0	9 0	Spiræa, 12 sprays	1 0	4 0
Gardenia, per doz.	6 0	12 0	Stephanotis, 12 sprays	9 0	18 0
Heliotropes, 12 spr.	0 6	1 0	Violets, 12 bunches	0 6	2 0
Lily of Valley, 12 spr.	1 0	4 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per doz.	24 0	60 0	Fuchsia, per doz.	9 0	18 0
Begonias, per doz.	6 0	12 0	Genista, do.	9 0	24 0
Bouvardias, do.	12 0	18 0	Heaths, in var., doz.	12 0	30 0
Cineraria, per doz.	9 0	18 0	Hyacinths, per doz.	9 0	18 0
Crocus, do.	4 0	9 0	Lily of Valley, doz.	18 0	36 0
Cyclamen, do.	9 0	24 0	Mignonette, do.	6 0	9 0
Cyperus, do.	6 0	12 0	Myrtles, do.	3 0	9 0
Deutzia, do.	9 0	18 0	Pelargoniums, scarlet, per doz.	6 0	9 0
Dielytra, do.	12 0	24 0	Primula sinensis, do.	6 0	12 0
Dracæna terminalis	30 0	60 0	Roses, Fairy, do.	7 0	15 0
— viridis, per doz.	18 0	24 0	— various, do.	15 0	30 0
Epacris, do.	12 0	18 0	Solanums, do.	6 0	24 0
Euphorbia jacquiniæfolia, per doz.	9 0	18 0	Tulips, do.	8 0	12 0
Ficus elastica	2 6	15 0	Veronica, do.	4 0	12 0

SEEDS.

LONDON: *March 22.*—Owing to the continued bad weather there is now less activity shown in the trade for field seeds, but prices all round manifest extreme steadiness, and as the stocks of all kinds are without doubt in

very narrow compass, holders anticipate for most descriptions a further improvement in value. As regards red Clover seed, the offers from abroad are rapidly falling off, which shows that this country, when once her present scanty supplies are exhausted, cannot to any great extent relv for her seeds upon future importations. The latest advices describe the New York market with only a little seed left, as hardening in tone, so that no important arrivals can be expected from that quarter. A good business has been doing this week in white Clovers at an advance for the finer qualities of 3s. to 4s. per cwt. In Trefoil, the high range of currencies of the present remarkable season is well supported. Alsike also realises extreme rates. From France comes the news of a further rise in the quotations for Italian Rye-grass. Scotch grasses are slightly dearer. For Lucerne there is a lively sale, and much higher rates are easily obtained. In Sainfoin a fair trade is passing on former terms. As noted last week, English Mustard and Rape-seed, on account of their extreme scarcity, are making greatly enhanced prices. The wet state of the land prevents for the moment any strong demand for spring Tares, and currencies in consequence go rather in favour of buyers. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, E.C.*

CORN.

Trade at Mark Lane on Monday was firm, and in the value of Wheat an advance of 1s. per quarter may be quoted, and for some really fine English Wheat as much as 2s. per quarter advance on the rates of the previous Monday was demanded, Malting Barley was worth somewhat more money, and in other descriptions the tendency was upwards. For malt previous quotations were given. Oats made in some instances a slight improvement in price. For Maize the prices realised were equal to those previously current. Beans and Peas were the same as before, and in the price of flour there was no material change.—Trade was firm on Wednesday. In Wheat factors held for a slight advance in some instances, which was not generally conceded. Choice malting barley experienced a steady sale, and other kinds were moved with somewhat less difficulty. Malt remained quiet. Sound Oats were firm, and in moderate request. Maize was equally as well held, and Monday's rates were fully supported for Beans, Peas, and flour.—Average prices of corn for the week ending March 18 :—Wheat, 42s. 9d.; Barley, 32s. 8d.; Oats, 25s. 6d. For the corresponding week last year :—Wheat, 41s. 9d.; Barley, 42s. 2d.; Oats, 30s. 2d.

CATTLE.

In the Metropolitan Market on Monday there was a fair supply of beasts both as to numbers and quality. Trade was very slow, and it was difficult to maintain late quotations. There were a few more English sheep, but a much shorter supply of foreign, the total number was smaller as compared with Monday se'nnight. Some of the choicest qualities were sold dearer, but the trade finished heavy. Calves were in good demand, and as the supply was small prices were high.—The supplies of cattle and sheep were large, and, with a sluggish demand, lower prices had to be taken for both. Calves sustained improved rates for primest—no improvement on inferior sorts. Quotations :—Beasts, 3s. 8d. to 4s. 4d., and 5s. to 5s. 4d.; calves, 4s. 4d. to 4s. 8d., and 6s. 4d. to 6s. 10d.; sheep, 5s. 4d. to 6s., and 6s. 6d. to 7s.; pigs, 4s. to 4s. 4d., and 5s. 4d. to 5s. 8d.

HAY.

Whitechapel reported a moderate demand for fodder of all classes on Tuesday, prices ruling firm. The supply was moderate. Prime Clover, 100s. to 150s.; inferior, 85s. to 95s.; prime meadow hay, 90s. to 135s.; inferior, 55s. to 75s.; and straw, 35s. to 50s. per load.—Thursday's market was very firm, owing to moderate supplies and a good demand. Quotations :—Clover, best, 120s. to 150s.; inferior, 85s. to 95s.; hay, best, 112s. to 135s.; inferior, 55s. to 75s.; and straw, 36s. to 50s. per load.—Cumberland Market quotations :—Superior meadow hay, 138s. to 147s.; inferior, 90s. to 110s.; superior Clover, 150s. to 160s.; inferior, 105s. to 120s.; and straw, 50s. to 55s. per load.

POTATOS.

The Borough and Spitalfields markets reports state that trade has been slow, except for the very best Potatos, which were firm in price. The foreign arrivals were on a liberal scale, while the home supplies were ample. Flukes, 130s. to 170s. per ton; Victorias, 120s. to 160s.; Regents, 90s. to 150s.; Rocks, 80s. to 110s. The importations of Potatos last week included 3100 bags from Harlingen, 258 sacks from Havre, 26 barrels from New York, 2679 bags from Hamburg, 115 tons from La Mailleraye, 300 sacks 240 bags from Boulogne, 108 tons 600 bags and 4017 sacks from Dunkirk, 11,457 bags from Antwerp, 23 tons from Rouen, 1195 bags from Bremen, 1064 bags from Ghent, and 120 bags from Rotterdam.

COALS.

The market on Monday was without any noteworthy alteration. Business on Wednesday was firm, in consequence of the cold weather, and house coal advanced 1s. per ton. Quotations :—Bebside West Hartley, 17s. 3d.; Hastings Hartley, 17s. 3d.; West Hartley, 17s. 3d.; Walls Ends—Haswell, 22s. 6d.; Hetton, 22s. 6d.; Hetton Lyons, 19s. 3d.; Hawthorn, 19s. 3d.; South Hetton, 22s. 6d.; Kelloe, 19s.; East Hartlepool, 22s. 3d.; Thornley, 21s. 6d.; Tees, 22s. 4d.

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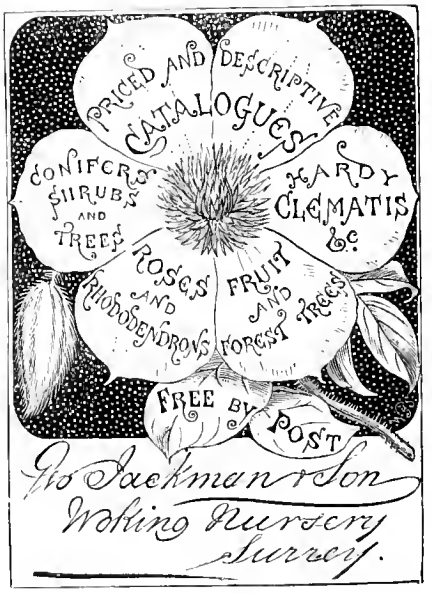

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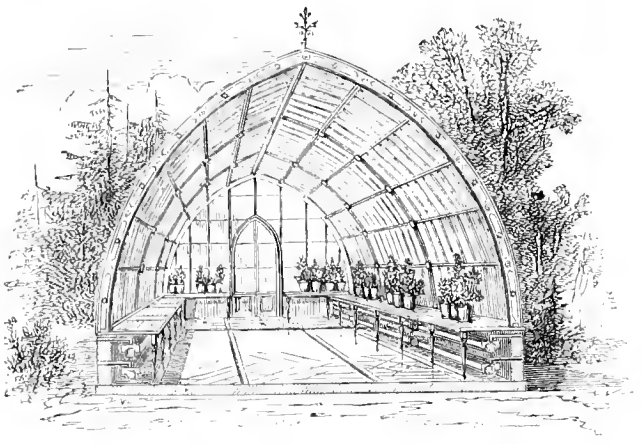

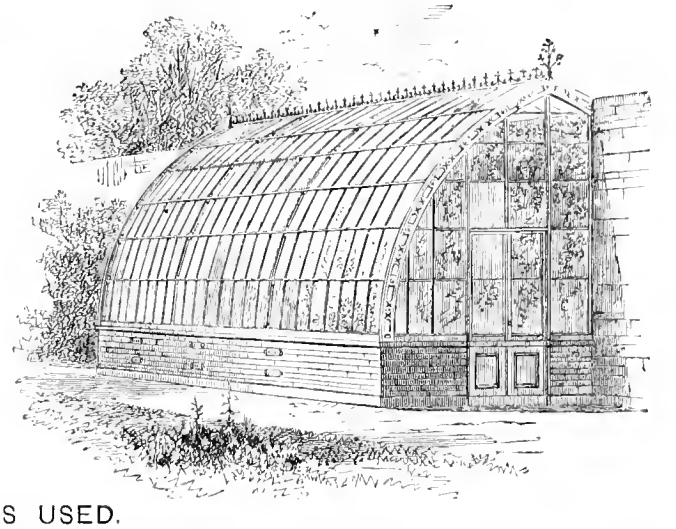

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COCOA-NUT FIBRE, as supplied to H.R.H. the Prince of Wales, the Emperor of Germany, Messrs. Veitch & Co., and thousands of Nurserymen, Gardeners, and others, is INVALUABLE for Forcing and Plunging, a wonderful incentive to growth of Flowers, Vegetables, &c. 20 bushels, 6s. 8d.; 50 for 12s. 6d., truck, 45s.; sample bag, 2s. 6d.; delivered free on to rail or within 5 miles.
ABBOTT AND CO., 80, Bishopgate Street Without, E.C., Manufacturers of Cocoa-nut Fibre, Mats, and Matting, at Eagle Steam Works, Hatcham Road, Old Kent Road, S.E. Importers of Russia Mats, Raffia Fibre, &c.
Price LISTS on application.

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per truck.
BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, New Holland Plants, 17s. per ton. (ton.
BROWN and BLACK PEAT, for general purposes, 17s. per Delivered on rail at Blackwater (South-Eastern Railway), or Farnborough (South-Western Railway), by the truck-load. Sample sacks, 5s. 6d. each.
FRESH SPHAGNUM, 10s. 6d. per sack.
WALKER AND CO., Farnborough Station, Hants.

ODAMS' MANURES, FOR ALL CROPS.
Manufactured by the NITRO-PHOSPHATE and ODAMS' CHEMICAL MANURE COMPANY (LIMITED), consisting of Tenant-Farmers occupying upwards of 150,000 Acres of Land.
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Particulars will be forwarded on application to the Secretary, or may be had of the Local Agents.

MILLER AND JOHNSON
(ESTABLISHED 1855)
Manufacture the highest quality of
ARTIFICIAL MANURES
For ROOT, CORN, and GRASS CROPS.
36, Mark Lane, London, E.C.

MILDEW: EWING'S INFALLIBLE CURE.—"The finest of all antidotes."—*Wm. Earley.* Retail of principal Seedsmen 1s. 6d. and 3s., or, packed, 1s. 0d. and 3s. 4d. per bottle.—EWING AND CO., Nurseries, Norwich.

BELL'S MILDEW COMPOSITION, as used by them for the last twenty-five years at their "HORTICULTURAL ESTABLISHMENT, BRACONDALE," their "NURSERIES, LAKENHAM," and "VINERIES, THORPE HAMLET," consisting of over 30,000 feet of glass. Retail, 1s. 6d. and 2s. 6d. per bottle, of the Sole Manufacturers,
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SIMPSON'S RED SPIDER, THRIPS, &c., ANTIDOTE. Testimonials of the highest order on application. Per quart, condensed, 6s.; per pint, 3s. 6d. Supplied to Seedsmen and Chemists.
Prepared by JOHN KILNER, Wortley, near Sheffield.

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. Sold Retail by Seedsmen, in boxes, 1s., 3s., and 10s. 6d. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

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Duty Free, under permission of the Hon. Board of Customs.

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"HORTICULTURAL" TOBACCO JUICE.
TOBACCO PAPER, CLOTH, and CORD.

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BONDED TOBACCO STORES, SHAD THAMES, LONDON, S.E.

Patronised by the principal Nurserymen,
And used in the Gardens of the Nobility and Gentry throughout the United Kingdom.

BRIDGFORD'S

ANTISEPTIC LIQUID,

For the removal of all
PARASITES, LICHENS, and INSECTS injurious to PLANTS, TREES, and VINES.

Sold in Bottles at 1s. 6d. and 3s. each,

By all Seedsmen and Nurserymen, and wholesale by the sole agents for England.

TRADE PRICE ON APPLICATION.

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Labels—Secure Tree and Plant Labels.

PARCHMENT or CLOTH LABELS, TREE or PLANT LABELS. Punched Parchment, 4 inches long, 3s. 6d. per 1000, or 30s. per 10,000; if eyeleted, 4s. per 1000. Vellum Cartridge, 4 inches long, 3s. per 1000 for 10,000. Sample Labels sent on receipt of postage stamp. Orders delivered free in London.
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Retail of the principal Seedsmen. Prices on application.

Indestructible Terra-Cotta Plant Markers.

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Under the Patronage of the Queen.

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The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.

The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."

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MADE of PREPARED HAIR and WOOL.

A perfect non-conductor of heat or cold, keeping a fixed temperature where it is applied. A good covering for Pits and Forcing Frames.

PROTECTION from COLD WINDS and MORNING FROSTS.

"FRIGI DOMO" NETTING, 2 yards wide, 1*s.* 4*d.* and 1*s.* 10*d.* per yard.

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2 yards wide	.. ..	1*s.* 10*d.* per yard run.
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MARENDAZ AND FISHER, Importers and Manufacturers, 9, James Street, Covent Garden, W.C., have a large stock of Archangel and Petersburg MATS, for Covering, Tying, and Packing. Tanned and New NETTING, Tarred TWINES, &c.

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THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.

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KENT PEATS or LOAM supplied at lowest rates in any quantities.

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TANNED NETTING for protecting the above from Frost, Blight, Birds, &c., 2 yards wide, 3*d.* per yard, or 100 yards, 20*s.*; 4 yards wide, 6*d.* per yard, or 50 yards, 20*s.*

NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowls, 2 yards wide, 6*d.* per yard; 4 yards wide, 1*s.* per yard; ¾-inch mesh, 4 yards wide, 1*s.* 6*d.* per yard.

TIFFANY, 6*s.* 6*d.* and 7*s.* 6*d.* per piece of 20 yards.

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THE FRENCH SYSTEM

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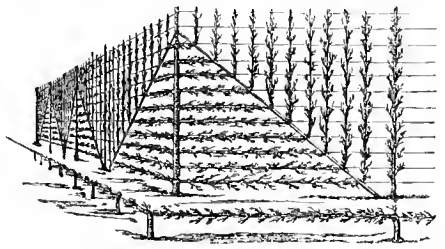

Extreme standards of T or angle iron, for ends or angles, for straining the wires from, self based; also stays for these standards, at prices as under:—

Intermediate Standards, 10 ft. apart, at half these prices.

Painted. Galvd.	Painted. Galvd.
4½ ft. high.. 5*s.* 6*d.* .. 7*s.* 6*d.*	7 ft. high .... 8*s.* 0*d.* .. 11*s.* 0*d.*
5 ft. high.... 6 0 .. 8 6	8 ft. high .... 9 0 .. 12 0
6 ft. high.... 6 9 .. 9 6	9 ft. high .... 10 0 .. 13 0

RAIDISSEURS, for Tightening Wires, one to each wire, 2*s.* 6*d.* doz. Key for tightening, 4*d.* each.

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No. 13 WIRE, 10 inches apart, 2*s.* 6*d.* per 100 yards.

MESSRS. J. B. BROWN & CO.,

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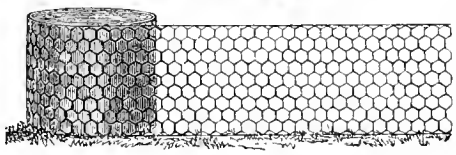
VIENNA PRIZE WIRE NETTING.

THE MEDAL FOR MERIT

At the Vienna Universal Exhibition, 1873,

Was awarded to Messrs. J. B. Brown & Co., for "excellence and perfection in material and workmanship, large extent of production, and cheapness of produce."



Prices per Lineal Yard, 24 inches high:—

Size of Mesh.	Mostly used for	Gauge.	Or Light Quality.	Gauge.	Or Medium Quality.	Gauge.	Or Strong Quality.
2 in.	Dogs or Poultry.	19	3¾*d.*	18	4½*d.*	17	5¾*d.*
1½ in.	Small Rabbits, &c.	19	4½*d.*	18	5½*d.*	17	6½*d.*
1 in.	Smallest Rabbits	19	5½*d.*	18	6¾*d.*	17	8*d.*
½ in.	Poultry, &c. ..	20	1*s.* 1½*d.*	19	1*s.* 4*d.*	18	1*s.* 7*d.*
½ in.	Aviaries, &c. ..	22	1*s.* 10*d.*	20	2*s.* 0*d.*	19	2*s.* 3*d.*

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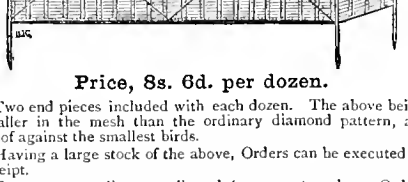
IMPROVED PEA & SEED GUARDS

REDUCED PRICES. SEASON 1876.

Superior Quality. Galvanised after made.

NEW PATTERN WITH DIAGONAL STAYS.

No. 76. 3 ft. long, 6 in. wide, 6 in. high.



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Having a large stock of the above, Orders can be executed on receipt.

Five per cent. discount allowed for prompt cash on Orders amounting to 20*s.* and upwards. Special quotations for large quantities.

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PADDINGTON WIREWORKS,

285 and 362, EDGWARE ROAD, LONDON, W.

Illustrated and Priced Catalogues of every description of Horticultural Wirework on application.

Post-office Orders payable at 310, *Edgware Road.*

SHAW'S TIFFANY, ELASTIC NETTING, CANVAS, &c, for Shading, Protecting, and other Horticultural Purposes. For Samples and Prices apply to

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Important to Farmers.

DAY, SON AND HEWITT, the Original and Sole Proprietors of the STOCK-BREEDERS' MEDICINE CHEST, for all disorders in Horses, Cattle, Calves, Sheep, and Lambs. These Chests contain the celebrated

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Used for forty years throughout the United Kingdom and British Colonies.

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B. & S. have always a large Stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., in 16 oz. and 21-oz.

The Best, Cheapest, and Most Durable Paint for all kinds of Work, Internal and External, is

THE GRANITIC PAINT.—Its body is superior to Lead, its durability far greater, and it is more economical. Sold, ground in Oil, in ALL COLOURS, by the GRANITIC PAINT COMPANY, 45, Fish Street Hill, E.C.

Damp Walls Cured, and Decay in Stone Prevented, at a Trifling Cost, by

THE SILICATE ZOPISSA COMPOSITION.—Manufactured in all Colours, or as a COLOURLESS LIQUID, by the

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Oil Paint No Longer Necessary.

HILL AND SMITH'S BLACK VARNISH for Preserving Ironwork, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.

Glangwilly, Llanpumpsant, Carmarthen, Nov. 27, 1873.—"Mr. Lloyd Lloyd encloses cheque for £3 5*s.*, amount due to Messrs. HILL & SMITH, and he considers the Black Varnish one of the most useful things he ever possessed."

Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley; and 118, Queen Victoria Street, London, E.C., from whom only it can be obtained.

CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would specially draw attention to the fact that every cask of their Varnish is legibly marked with their name and address, without which none is genuine.

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(*By Appointment to the Royal Horticultural Society.*)

To HORTICULTURAL IMPLEMENT MAKERS, NURSERYMEN, FLORISTS, and OTHERS.

ADAMS AND FRANCIS INSERT ADVERTISEMENTS in all Newspapers, Magazines, and Periodicals. List of London Papers on application.

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PLANS AND ESTIMATES FOR HORTICULTURAL BUILDINGS

OF EVERY DESCRIPTION, EITHER IN WOOD OR IRON,

TO SUIT ANY GARDEN, LARGE OR SMALL,

Designed and constructed with strict regard to ECONOMY of PRICE, GOOD WORKMANSHIP, DURABILITY of MATERIAL, and PRACTICAL ADAPTATION to their various purposes.

ORMSON'S
PATENT UPRIGHT TUBULAR CORNISH BOILER,

STRONGLY RECOMMENDED BY THE PRESS.

Estimates given for Heating, on the most improved and scientific principles, all descriptions of Buildings.

Hot-water Pipes, and a variety of the Best Boilers and Connections

AT WHOLESALE PRICES.

Goods supplied to Order at the Lowest Prices to those who may wish to fix their own Hot-water Apparatus, or Workmen sent to any part of the United Kingdom.

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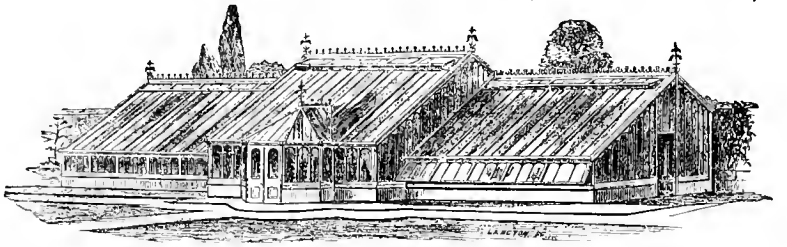
MESSENGER & COMPANY,

CONTRACTORS, MIDLAND HORTICULTURAL BUILDING AND HOT-WATER ENGINEERING WORKS, LOUGHBOROUGH,



Beg to inform their numerous Patrons and the Public generally, that having erected new, more extensive, and commodious works, fitted with the best steam-power machinery, for the construction of Horticultural Buildings in wood or iron, plain or ornamental, large or small, they are in a position, from their great facilities and experience, to carry out with dispatch, in the best manner, at very moderate cost, the orders with which they are entrusted. Only thoroughly well-seasoned timber used. Glasshouses erected on Messenger's patent principles are, owing to mechanical arrangements, very strong, *most durable*, light, *elegant; perfect efficiency* for purpose intended is *guaranteed;* are economical in cost and maintenance. Messenger's Patent Boilers, Flexible Jointed Hot-water Pipes and Valves, are now in use in many thousands of instances, with the greatest success. Particulars on application. *Plans and Estimates forwarded. Ladies and Gentlemen waited upon. The Plans of Architects and others carried out.*

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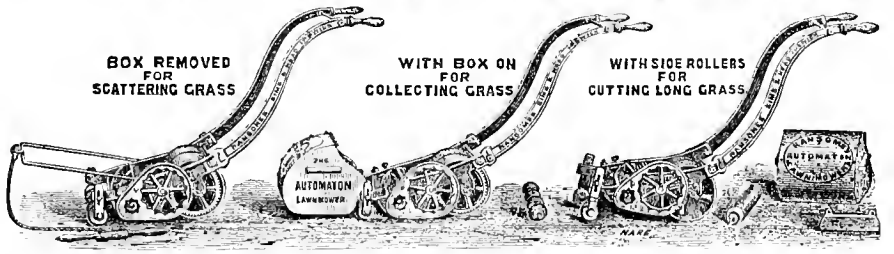

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The "Automatons" are thoroughly strong, well-made Machines, easy to work, and cut the grass perfectly and leave no ribs. They collect the cut grass into a box in front of the Machine, or deliver it on the Lawn behind the Machine as required. They have adjustable handles to suit the height of any person, and are sent out with both front and side rollers, the former for use in general work, and the latter when cutting long grass, or when it is unnecessary to roll the grass in front of the cutters. These Machines have the best wheel gearing, combined steel and iron knives, an automatic silent action, instead of ratchets, and all the parts easily adjustable. Twelve thousand in use.

Sizes, 8 to 20 inches. Prices from 55s.

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For small gardens. These perfect "Little Gems" have a grass-collecting box, and the height of cut can be varied. They have an adjustable ledger blade, and the height of the handle can be adjusted to suit any person. The cutters can be reversed when blunt by driving the Machine in the opposite direction.

Prices, 6 in., 25s.; 8 in., 35s.

Free Delivery to all principal Railway Stations. Trial allowed.

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By DRAINAGE, ENCLOSING, CLEARING, and the ERECTION of FARM BUILDINGS and COTTAGES.

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ADVANCES MONEY:

1st.—To the OWNERS of SETTLED and OTHER ESTATES, for the Erection of Farm Buildings and Cottages, and for the Drainage, Irrigation, Enclosing, Clearing, and General Improvement of Landed Property in any part of the United Kingdom.

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Pure Anthracite Coal.

ABSOLUTELY SMOKELESS.

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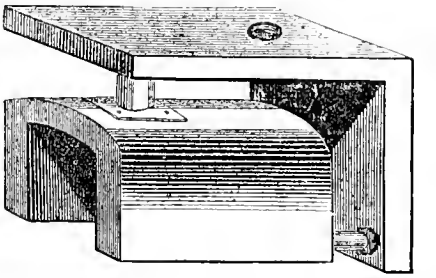

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20 ,,	18 ,,	30 ,,	500	9 0 0
24 ,,	24 ,,	24 ,,	700	12 0 0
24 ,,	24 ,,	30 ,,	850	14 0 0
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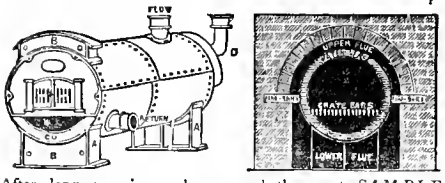

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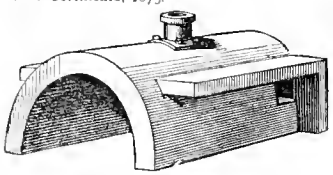

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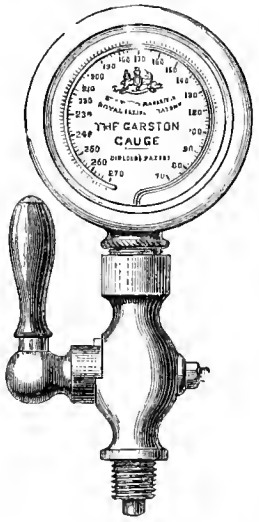

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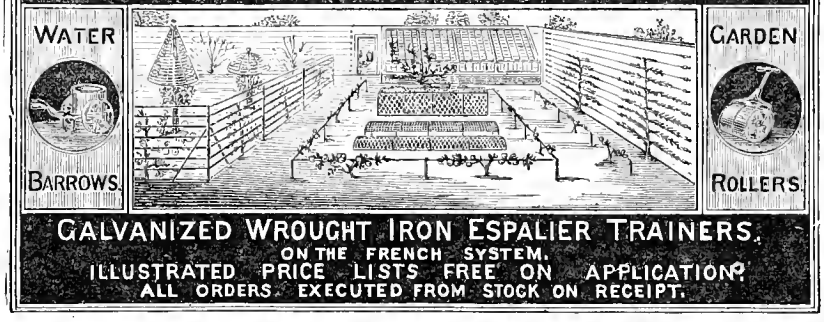

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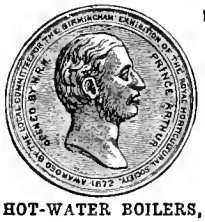

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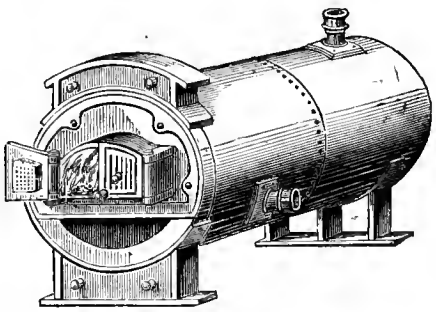

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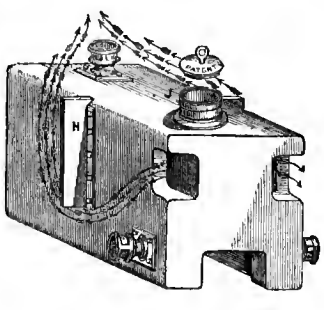

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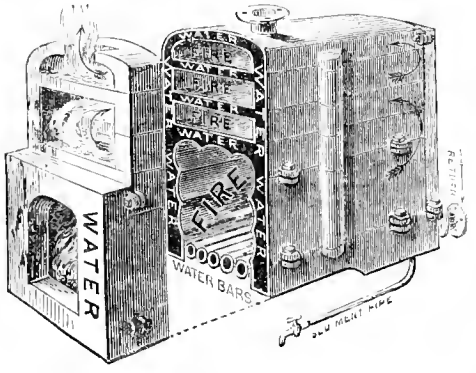

January 16, 1875.

THE CIRCULATOR BOILER.—Seeing a question asked regarding the merits of Cannell's Hot-water Circulator, I cannot say too much for it. It is the simplest and most powerful, with the least amount of fuel, of any boiler I ever tried. The late frost has been ample.—CHAS. PENNY, *The Gardens, Sandringham, January 12.*

—— In answer to "Rus," in last week's *Field*, I beg to state that Cannell's boiler, now called the Victoria Hot-water Circulator, DOES all it PROFESSES, and is one of the most powerful and efficient in the trade. We have had one very heavily weighted with work, heating six houses and a pit for more than a year, and it does its work well. It is economical, being so constructed as to absorb nearly all the caloric from the fuel before the products of combustion are discharged up the chimney. It must prove durable, for no joints nor vulnerable points are exposed to the fire, which expends its force on a series of iron flues or water jackets formed by the boiler. As to the final question—Will it burn up anything?—that will depend very much on the furnace, and the amount of draught provided. Mr. Cannell, the inventor of the boiler, burnt up anything and everything in his furnace at Woolwich, which I visited to master its details and test its efficiency before adopting it. We find there that this boiler and furnace burn up common coal or coke well. The best form of the boiler or circulator is the one that forms its own furnace by a series of water cars; the whole heating power of the fuel is thus utilised and brought to bear upon the water. I have no hesitation in adding that the boiler is simple and strong in construction, efficient in action, and economical in use. Each part of it is also independent and complete in itself, so that if the plate forming the crown of the furnace should burn out it can be replaced without injury to the other parts. Should a fuller answer be required by "Rus," or other readers, I should be pleased to give a detailed description of this "Circulator," with illustrations. To those who do not know me, it may be needful to add that I have no interest in the Victoria further than I take in any useful invention likely to save fuel and thus cheapen production, and tend to advance the science and practice of horticulture."—D. T. FISH, *Hardwicke.*

January 23, 1875.

THE CIRCULATOR BOILER.—"In answer to your correspondent, 'Rus,' I beg to state that I have a 'No. 2 Circulator Boiler,' attached to 2,500 feet of 4-inch piping, doing its work efficiently; and, as a proof, allow me to remark that, between Monday, the 28th, and Tuesday, the 29th, of December last, my black-bulb thermometer registered 0° (or zero), while the temperature of the stove at 8 A.M. on the 29th was 42°, difference 74°. It is only fair to mention that there were five houses besides kept at a temperature of 35° by the same boiler. I use good Scotch coal, but am convinced there is no boiler so economical as the Circulator; it will burn anything, but everybody knows that the better the fuel the more heat and the less work. Regarding durability it would be premature on my part to give an opinion further than this, that should one of the sections of the Circulator give way it can easily be replaced in a few hours without interfering with the piping—a most important matter."—PETER LONEY, Overseer, *Marchmont, Dunse, N.B.*

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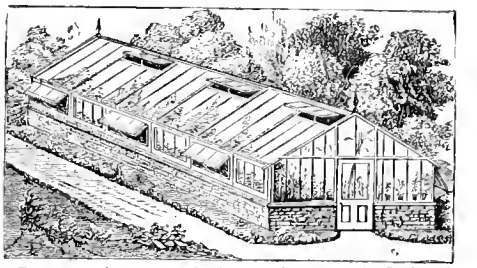

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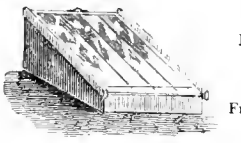

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THE AGRICULTURAL GAZETTE,
for MONDAY, MARCH 20.

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THE

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Established 1841.

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		Weather, the	442
		Wych Elm (with cut)	435

Subscribers who wish to have "The Gardeners' Chronicle" forwarded DIRECT FROM THE OFFICE are respectfully informed that payment MUST BE MADE IN ADVANCE.

ROYAL HORTICULTURAL SOCIETY, SOUTH KENSINGTON, S.W.

NOTICE.—SCIENTIFIC, FRUIT, and FLORAL COMMITTEES' MEETINGS, on WEDNESDAY NEXT, April 5, at 11 o'Clock. GENERAL MEETING at 3 o'Clock. Admission One Shilling.

ALEXANDRA PALACE.—The FIRST GREAT FLOWER SHOW of the Season will be held on FRIDAY and SATURDAY, May 5 and 6. LAST DAY of ENTRY, APRIL 28.

The GREAT ROSE SHOW of the Season will be held on FRIDAY and SATURDAY, July 7 and 8. LAST DAY of ENTRY, JULY 1.

Schedules of Prizes and all particulars may be had on application to

ALEX. McKENZIE, 1 and 2, Great Winchester Street Buildings, E.C., and at the Alexandra Palace, Muswell Hill, N.

Flower and Fruit Shows.

ROYAL AQUARIUM SUMMER and WINTER GARDEN.—NOTICE to INTENDING EXHIBITORS.—The FIRST EXHIBITION of FLOWERS and FRUIT will take place on APRIL 12 and 13. ENTRIES for the above must be sent in not later than APRIL 4. The Directors desire to state that nothing of an inferior character can be exhibited at any of the Shows. All communications to be addressed to Mr. WILLS, Royal Aquarium.

ROYAL FLORA SOCIETY of BRUSSELS.

The GRAND INTERNATIONAL HORTICULTURAL EXHIBITION will be held at Brussels from APRIL 30 to MAY 6.

Accredited Agents: Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

LILIUM AURATUM.—Unusually large, heavy, and plump Bulbs of this beautiful Lily, at 42s. and 60s. per dozen.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

New Roses for 1876.

H. BENNETT offers a careful selection of the above, in plants not to be equalled; unusually fine this season; ready in March. DESCRIPTIVE LISTS post-free.—Manor Farm Nursery, Stapleford, Salisbury.

Special Offer—Vesuvius, Mrs. Pollock.

WILLIAM BADMAN offers good plants of Vesuvius, from single pots, 10s. per 100, 85s. per 1000; Mrs. Pollock, 18s. per 100; Crystal Palace Gem, 15s. per 100. Package included. Terms cash.

Cemetery Nursery, Gravesend, S.E.

MESSRS. FRASER AND BENTON, HORTICULTURAL AND AGRICULTURAL AUCTIONEERS AND VALUERS, Romford and Grays, Essex.

Transit Agency for Plants, Seeds, &c.

C. J. BLACKITH AND CO., late BETHAM & BLACKITH, Cox's and Hammond's Quays, Lower Thames Street, London, S.E.—Forwarders to all parts of the World.

Wood Engraving.

MR. W. G. SMITH, ARTIST and ENGRAVER on WOOD, 15, Mildmay Grove, London, N.

SUTTON'S GRASS SEEDS for PASTURES, 22s. 6d. to 36s. per Acre. Carriage free.

SUTTON'S GRASS SEEDS for PARK GROUNDS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for GARDEN LAWNS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for CROQUET GROUNDS, 20s. per Bushel. Carriage free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

ORCHARD-HOUSE TREES, Fruiting in Pots.—Peaches, Nectarines, Plums, Pears, Apples, Figs, Apricots, Cherries, Mulberries, and Oranges.

RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

PEACHES and NECTARINES, in pots, set with Fruit; the Trees have been forced, and the Fruit is from the size of an Almond to that of a Walnut. Price, 7s. 6d. to 10s. 6d.

THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

To the Trade.

ASPARAGUS, 1-yr., 2-yr., and 3-yr. TROPÆOLUM CANARIENSE.

JAMES BIRD, American Nurseries, Downham.

PARSNIP SEED.—True Guernsey Hollow Crown, 6d. per oz., free by post on receipt of stamps.

J. H. PARSONS, Market Place, Guernsey.

Grass Seeds.

BOLTON AND CO. have to offer fine new GRASS SEEDS for Permanent Pasture, and shall be happy to forward prices to buyers. Very liberal terms to large purchasers.

BOLTON AND CO., Seed Merchants, Wood Green, London, N.

April the Best Month for Planting Evergreens.

COMMON LAURELS, 100,000, 2 to 4 feet, PORTUGAL LAURELS, and other Evergreens. CATALOGUES on application. Address

WM. WOOD AND SONS, The Nurseries, Maresfield, Uckfield, Sussex.

Thorns, Thorns, Thorns.

PARKER AND BUSH offer extra strong THORN QUICK, 2 to 3 feet, three times transplanted. Price and samples on application.

St. Michael's Hill Nursery, Bristol.

LARCH.—10,000, 1 to 1½ foot, at 15s. per 1000; 10,000, 1½ to 2 feet, at 25s. per 1000; 8000, 2½ to 3½ feet, at 35s. per 1000.

JAMES SMITH, Darley Dale Nurseries, Matlock.

EUCALYPTUS GLOBULUS (Blue Gum of Australia).—A supply of Seed always kept on hand from the establishment of Messrs. Thomas Lang & Co., Melbourne.

JOHN WILSON, Seedsman, Whitehaven.

Hothouses, Hot-water Apparatus, &c.

HALLIDAY AND CO., HOTHOUSE BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates and Plans free. Best Construction! Best Materials! Best Workmanship! Catalogues free.

Offices: 22, Barton Arcade, MANCHESTER.

WANTED, a quantity of EUONYMUS (Green), from 1 to 2 feet high, nice bushy stuff; also large well-grown FICUS ELASTICA, and hardy PALMS and FERNS. Send sizes and prices to

G. REEVES SMITH, Aquarium, Brighton.

WANTED, HOLLY and YEW BERRIES. State price per bushel to

W. BARRON AND SON, Elvaston Nurseries, Borrowash, Derby.

WANTED, 300 Yards of good Dwarf DUTCH BOX EDGING. A sample yard with price, to

R. TUCKER, Nurseryman, Faringdon, Berks.

WANTED, DOUBLE GORSE, good plants, 1 foot high, in pots. State price per 100.

RICHARD SMITH, St. John's Nurseries, Worcester.

WANTED, in the Trade, good Specimen STOVE and GREENHOUSE PLANTS—Allamanda Hendersoni, Crotons, Marantas, Rhynchospermum, Rondeletia, Cissus, Dipladenia, &c. State price, &c., to

Messrs. STODDART AND ROBINSON, Greatham Villa, West Hartlepool.

WANTED, small MARECHAL NIEL and GLOIRE DE DIJON ROSES, on own roots, to grow on. State price to

E. COOLING, Mile Ash Nurseries, Derby.

WANTED, half a hundredweight of YEW STONES. Apply, stating price, to

C. W. S., Hildenley, Malton.

CONSIGNMENTS wanted of best FRUITS and VEGETABLES by GEO. LAXTON, JUN., Salesman, Covent Garden Market. Unexceptionable reference as to cash returns.

CARTER'S GRASS SEEDS for Lawns and Parks, 20s. per bushel.

CARTER'S GRASS SEEDS for Permanent Pastures, 22s. 6d. to 36s. per acre.

CARTER'S GRASS SEEDS. Carriage Free. To suit all Soils.

CARTER'S GRASS SEEDS for Renovating Meadows and Lawns, 18s. to 20s. per bush.

CARTER'S, THE QUEEN'S SEEDSMEN, 237 and 238, High Holborn, W.C.

CHARLES TURNER'S SEED CATALOGUE is now ready, containing a selection of the best varieties only, including his New Pea, "Dr. Maclean," and "The Schoolmaster" Potato.

The Royal Nurseries, Slough.

Hardy Florists' Flowers.

THOMAS WARE'S (1876) SPRING CATALOGUE of the above, including Chrysanthemums, Delphiniums, Pansies, Pæonies, Phloxes, Pentstemons, Pyrethrums, and others, may be had, post-free, on application.

Hale Farm Nurseries, Tottenham, London.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Brusselles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Notice—Seeds, Seeds.

WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds. CATALOGUES now ready, which contain every requisite, at fair prices, post-free on application.

Highgate, London, N.

Cineraria Seed.

F. & A. SMITH have now in flower their Collection of Seedling Cinerarias. An inspection invited. Sample blooms forwarded on receipt of six stamps.

Seed, in packets, 1s., 2s. 6d., and 5s. each.

The Nurseries, West Dulwich, S.

CAMELLIA, large Double White, for Sale. A splendid plant, 10 feet in height and 8 feet through would lift with perfect safety. Apply to

JOHN RAINBOW, Nurseryman, London Road, Clapton, N.E.

Verbenas.

JOHN CARTER, NURSERYMAN, Keighley, begs to offer fine strong VERBENAS, from cutting pots, well hardened off. Crimson, Scarlet, and Purple, 6s. per 100, 50s. per 1000; White, 7s. per 100.

Verbenas, Verbenas, Verbenas

WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.

Cemetery Nursery, Gravesend, S.E.

VERBENAS, VERBENAS, VERBENAS.—White, Purple, Scarlet, and Pink: also twelve extra choice named varieties, strong, healthy-rooted cuttings, perfectly free from disease, 6s. per 100, 50s. per 1000, for cash.

H. BLANDFORD, The Dorset Nurseries, Blandford.

Carnations, Picotees, and Cloves.

CHARLES TURNER is now prepared to send out strong plants from his complete collection, both for the border and for exhibition. Catalogues on application.

The Royal Nurseries, Slough.

ALTERNANTHERAS MAGNIFICA and PARONYCHIOIDES.—Good strong, sturdy stuff, shaken out of pots, and forwarded free at 10s. per 100.

WILLIAM HOLMES, Frampton Park Nursery, Hackney.

GESNERA REFULGENS.—A lot of fine Bulbs of this lovely winter-blooming Plant.

GLADIOLUS BRENCHLEYENSIS.—An enormous stock at low price for the Trade. Apply to

HOOPER AND CO., Covent Garden, London, W.C.

Mangel and Swede.

JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself

Bardney Manor, Lincoln.

Wright's Prize Celeries.—Sow Now.

WRIGHT'S Grove Red, Grove White, and Giant White CELERIES, per packet, 1s. Orders solicited, enclosing value in stamps or Post-office Order.

WILLIAM WRIGHT, Seedsman, Retford, Notts.

SEAKALE.—A few thousands of fine planting roots at low price.

EWING AND COMPANY, Nurseries, Eaton, near Norwich.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS, also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double, with every sort of Early Spring Flowers. LIST on application.

Mr. WEBB, Calcot, Reading.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

SALES BY AUCTION.

Phalænopsis intermedia Portei

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, April 3, a strong Established Plant in flower of the extremely rare and beautiful PHALÆNOPSIS INTERMEDIA PORTEI. The variety is remarkably good, the lip being unusually high-coloured.

On view the morning of Sale, and Catalogues had.

Odontoglossum vexillarium.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, April 3, at half-past 12 o'Clock precisely, very CHOICE IMPORTED ORCHIDS from New Grenada and Burmah, comprising fine Plants in the best possible condition of Odontoglossum vexillarium, Cattleya gigas, Uropedium Lindeni, Dendrobium Boxalli, D crystallinum, D. linuiflorum, D thyrsiflorum, D. Dalhousianum, D formosum giganteum, Vandas, Aerides, &c; also fine Established Plants, many of them in flower, of Phalænopsis Schilleriana, P amabilis, P. Luddemanniana, Dendrobium Wardianum, D. Devonianum, &c.

On view the morning of Sale, and Catalogues had.

Important Sale of Established and Semi-established ORCHIDS

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, April 3, ESTABLISHED and SEMI-ESTABLISHED ORCHIDS, consisting of Oncidium Sarcodes (true), collected in full bloom; Oncidium Marshallianum (true), Oncidium concolor (true), very fine varieties—see dried flowers; Oncidium, supposed to be the very rare and beautiful Oncidium curtum; Sophronites grandiflora, Houlletia Brocklehurstiana, Cattleya amethystina, C. Leopoldii, C. candida, C. marginata; Lælia præstans and L. purpurata; also a few splendid specimens of DENDROBIUM NOBILE. All the above in the best possible condition.

On view the morning of Sale, and Catalogues had.

Odontoglossum Lindeni and O. crispum.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, April 6, a quantity of the rare ODONTOGLOSSUM LINDENI. Previous to this importation only a few plants (true) of this handsome species were known to exist. At the same time time will be sold a quantity of imported Plants of ODONTOGLOSSUM CRISPUM (ALEXANDRÆ). The whole to be sold without the least reserve.

On view the morning of Sale, and Catalogues had.

Imported Orchids from Assam.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, April 6, at half-past 12 o'Clock precisely, a very large importation of various ORCHIDS from Assam, including many hundreds of the hitherto rare and pretty Pleione humilis, and many hundreds of P. maculata; a quantity of Vanda cærulea, including one fine mass with upwards of twenty growing stems; also a quantity of the hitherto rare V. undulata, V. cristata; hundreds of Dendrobium Cambridgeanum, D. transparens, the rare D. marmoratum, and a quantity of a species unknown, probably quite new; a large quantity of Coelogyne corymbosa, never before seen in England in a living state; and a quantity of the rare C. barbata, which is said by Dr. Lindley to be "perhaps the finest of the fine genus." Also a number of the rare Aerides vandarum, Cymbidiums of sorts, one probably a new species; also several plants of a Cypripedium which appears very distinct, and is probable quite new. The whole to be sold without the least reserve.

On view the morning of Sale, and Catalogues had.

Sale of the Collection of Orchids formed by the late S. RUCKER, Esq., of Wandsworth.

MR. J. C. STEVENS has received instructions from Messrs. James Veitch & Sons, of Chelsea, to offer for SALE on WEDNESDAY, April 12, the Collection of ORCHIDS recently purchased by them from the Executors of the late S. Rucker, Esq. This Collection comprises many fine and rare kinds. It was formed by Mr. Rucker during the last five years, and it is not too much to say that almost every plant was selected for its variety. The plants are healthy, vigorous, young-growing specimens, and well worthy the attention of all Orchid growers. Amongst others will be found the following:—

- Oncidium Rogersii (true), the only plant at present saleable in England
- Lælia anceps Dawsoni
- Odontoglossum vexillarium (strong)
- „ Roezlii (strong)
- „ Alexandræ (several)
- Masdevallia Wallisii (true)
- „ tovarensis
- „ Harryana
- „ Lindeni
- „ Veitchii
- Dendrobium Wardianum
- „ crassinode
- „ aggregatum majus (splendid masses)
- „ Jamesianum (very fine)
- Phalænopsis grandiflora
- „ amabilis
- „ Schilleriana (a very fine lot of all the kinds)
- Cattleya labiata (true autumn-flowering varieties)
- „ Mendelii (splendid plants), &c.

On view the mornings of Sale, and Catalogues had.

Pine-apple Nursery, Edgware Road, W.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions from Mr. J. Weeks to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., almost without reserve, on THURSDAY, April 20, at half-past 12 o'Clock precisely, the Valuable PREMISES and GOODWILL of the PINE-APPLE NURSERY, Maida Vale, Edgware Road, W., together with Dwelling-house, Seed Shop, and Offices, and all the extensive ranges of Horticultural Buildings and Sheds.

Held:—As to part, for a term which will expire in 1909, at a Ground-rent of £45; and, as to the remainder, for a term which will expire in 1923, at a Ground-rent of £89. The Nursery has, within the last three or four years, been very greatly enlarged and improved, upwards of £10,000 having been expended in additions, improvements, and repairs; and it is considered in the Trade to be the most important Establishment of the kind in the World. It possesses an extensive connection both in the Nursery and Seed Trade, amongst the Nobility and Gentry and their Gardeners. Part of the purchase-money may remain on Mortgage.

Nurseries in the immediate neighbourhood of London are seldom valued by the acre; but this is an exception, as the Horticultural Buildings and Show-grounds cover about 2½ Acres, and form a most valuable property.

For further particulars apply to Messrs. KEARSEY, SON, AND HAWES, 35, Old Jewry, London, E.C.; and Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

Auction Mart, Tokenhouse Yard, E.C.

IMPORTANT SALE of Established and Semi-established ORCHIDS, LILIUM AURATUM, fine POT ROSES, &c.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUTION, in the Large Estate Room, at the Mart, Tokenhouse Yard, E.C., on MONDAY, April 10, at half-past 11 o'Clock precisely, a valuable Collection of choice Established and Semi-established ORCHIDS, including Odontoglossum Insleayi, variety Leopardinum, O. citrosmum, O. roseum, O. nebulosum, O. membranaceum, O. Rossii majus; Cattleya citrina, C. crispa; several Lælia purpurata, L. alhida, L. autumnalis; Angræcum eburneum and virens; Dendrobium Dalhousianum, D. Pierardii, D japonicum; Oncidium rostrans, O. Cavendishianum; Aerides odoratum, several Vanda Bensonæ, V. tricolor, and others. Also fine CYATHEA MEDULLARIS, PANDANUS VEITCHII, DRACÆNAS, &c.; 100 fine GARDENIA FLORIDE, coming into flower, beautifully grown TEA ROSES, SPIRÆAS, and CYCLAMENS in flower; about 3000 LILIUM AURATUM, just arrived from Japan in fine condition.

On view morning of Sale. Catalogues may be had at the Mart, and of Messrs. Protheroe & Morris, 98, Gracechurch Street, E.C.

Woodford, Essex—For Occupation or Investment.

SIX ACRES of fine, rich MARKET GARDEN or NURSERY LAND, with SEVEN-ROOMED DWELLING-HOUSE and OUTBUILDINGS standing thereon, held for an unexpired term of 45 years at a moderate ground rent.

MESSRS PROTHEROE AND MORRIS are instructed by Mr. Lucas to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on MONDAY, April 24, at 2 o'Clock punctually, the valuable LEASEHOLD ESTATE known as Lucas' Farm, situate opposite the old Mill Inn, Woodford, Essex, and about ten minutes' walk from George Lane Railway Station, 8 miles from London, and in a locality where there is a great demand for produce.

May be viewed prior to the Sale. Particulars of Sale had on the Premises, and of the Auctioneers, 98, Gracechurch Street, City, and Leytonstone, E.

To Noblemen, Gentlemen, and the Trade.

IMPORTANT and ATTRACTIVE SALE of CHOICE STOVE and GREENHOUSE PLANTS.

MESSRS. LYTHALL AND CLARKE are favoured with instructions from Messrs. Felton & Sons to OFFER by AUCTION, at the Midland Counties Repository, Moseley Street, Birmingham, on TUESDAY NEXT, April 4, at 12 o'Clock, a very fine Collection of SPECIMEN PALMS, DRACÆNAS, ALOCASIAS, DIEFFENBACHIAS, MARANTAS, FERNS, CAMELLIAS, &c., including Plants, in the finest possible health and condition, of Dracænas Baptistii, Chelsoni, amabilis, Mooreana, Youngi, splendens, gloriosa, &c.; Pandanus Veitchii, Marantas Veitchii, Lindeni, and magnifica; Alocasia metallica, A. Sedeni, a noble plant of Dieffenbachia imperialis, a grand specimen of Phormium tenax variegata, with six large growths, and a large quantity of other splendid Plants and Ferns. A Collection of NEW and RARE PLANTS, including the wonderful foliage plant, Bertolonia Van Houttei, and grand varieties of Gloxinias, Caladiums, &c.

Trees and Shrubs.

MR. CHARLES HADFIELD will SELL by AUCTION, without the slightest reserve, as the land must be cleared this spring, at Mr. B. Whitham's Nurseries, Reddish, near Stockport, on WEDNESDAY, April 5, a splendid COLLECTION of TREES and SHRUBS, comprising Horse Chestnuts, Beech, Limes, Poplars in sorts, Austrian Pines, Laurels in sorts, Box, English and Irish Yews, Cupressus, Arbor-vitæs, Hollies, Apples, Currants, Dogwood, Lilacs, large Hybrid Rhododendrons, and many other varieties of Trees and Shrubs. Also many thousand transplanted Rhododendrons, from 9 to 12 inches, 12 to 15 inches, and 1½ to 2 feet high, in lots to suit purchasers.

Catalogues may be had.

Sale of a very Valuable Collection of Specimen and Half-specimen STOVE and GREENHOUSE PLANTS, the whole of which have been exhibited.

ARTINGSTALL AND HIND (the surviving Partners of the late Firm of CAPES, DUNN & Co.) beg to announce that they have received peremptory instructions from Messrs. E. Cole & Sons, owing to their want of space, to SELL by AUCTION, on WEDNESDAY and THURSDAY, April 19 and 20, commencing at 12 o'Clock prompt, at their Nurseries, Withington, near Manchester, the whole of their valuable Collection of EXHIBITION PLANTS.

May be viewed one week prior to the Sale, and Catalogues then had at the Nurseries; or now, together with further information, by applying to the Auctioneers, 51, Princess Street, Manchester.

To Florists, &c.

TO BE LET, with Immediate Possession, in full working order, a NURSERY, containing 9 acres of Land, 1500 feet run of Heated Houses and Pits, all fully stocked, and in fine health; Horses, Vans, and everything as it stands.

NEMO, Post Office, South Mimms, near Barnet.

TO BE SOLD or LET for a term of years, on account of delicate health of Proprietor, a FREEHOLD NURSERY in good working order, fitted up with every convenience for Growing Fruit, Plants, and Cut Flowers for the market. For any one wishing to enter the business this is an opportunity seldom met with. Stock at a low valuation. For particulars, apply to

T. STUDD, Grange Villa, Heaton Mersey.

THE GUARDIANS of the WARE UNION are willing to LET on LEASE a SMALL SEWAGE FARM, 20 miles from London, close to a Railway Station and the River Lea. The Land is admirably adapted for Market Garden and Nursery purposes. For full particulars and terms apply to Mr. A. M'KENZIE, Land Agent, Hoddesdon.

By order of the Board,
GEO. GISBY, Clerk to the Board.

Ware, March 28, 1876.

The Most Beautiful new Regal Pelargonium is

BEAUTY OF OXTON.

Price, 1 guinea each.

A pretty and charming novelty is the new double-flowering IVY-LEAVED PELARGONIUM, "KONIG ALBERT." Price 7s. 6d. each.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

ROYAL BOTANIC SOCIETY OF LONDON.

FIRST SPRING EXHIBITION.
March 29, 1876.

AWARDS of the JUDGES.

LARGE SILVER MEDAL.

Mr. J. Ward, Gr. to F. G. Wilkin, Esq., Leyton, for twelve Stove and Greenhouse Plants.
Mr. J. Ward, for six Azaleas.
Mr. B. S. Williams, Holloway, for six Azaleas.

SILVER MEDAL.

Mr. G. Wheeler, Gr. to Sir F. H. Goldsmid, for six Azaleas.
Mr. George Toms, Gr. to H. Wetenhall, Esq., Seven Sisters Road, for twelve Stove and Greenhouse Plants.
Mr. James, Gr. to W. F. Watson, Esq., Isleworth, for nine Cinerarias.
Mr. James Douglas, Gr. to F. Whithourn, Esq., for twelve Hyacinths.
Mr. James Douglas, for twelve Hyacinths, any number of spikes.
Mr. James Douglas, for six Deutzias.
Messrs. Cutbush & Son, for twelve Hyacinths.
Mr. Goddard, Gr. to H. Little, Esq., for twelve Cyclamens.
Messrs. Paul & Son, Cheshunt, for Roses in pots.
Messrs. Paul & Son, for cut Roses.
Mr. B. S. Williams, for a Collection of Plants.
Messrs. William Paul & Son, for cut Camellias.
Mr. Heims, Gr. to F. A. Philbrick, Esq., for Collection of Orchids.

SMALL SILVER MEDAL.

Mr. James, Isleworth, for six Chinese Primulas.
Mr. James, Isleworth, for six Deutzias.
Mr. James, Isleworth, for twelve Cyclamens.
Mr. James Douglas, for twelve pots of Tulips.
Messrs. Barr & Sugden, for twelve pots of Tulips.

LARGE BRONZE MADAL.

Mr. G. Wheeler, for twelve Stove and Greenhouse Plants.
Mr. G. Wheeler, for six Forced Shrubs.
Mr. G. Wheeler, for six Chinese Primulas.
Messrs. Carter & Co., for six pots of Lily of the Valley.
Mr. James Weir, Gr. to Mrs. Hodgson, for twelve Hyacinths.
Messrs. Barr & Sugden, for twelve Hyacinths.
Messrs. Cutbush & Sons, for twelve Hyacinths.
Mr. J. Moorman, Gr. to the Misses Christy, Kingston, for twelve pots of Tulips.
Messrs. Cutbush & Son, for twelve pots of Tulips.
Mr. H. B. Smith, Ealing, for twelve Cyclamens.
Mr. Richard Clarke, Twickenham, for twelve Cyclamens.
Messrs. William Paul & Son, for a Collection of Golden Pelargoniums
Messrs. Carter & Co., for a Collection of Hyacinths and Tulips.
Messrs. Barr & Sugden, for a Collection of Hyacinths.

BRONZE MEDAL.

Mr. George Toms, Gr. to H. Wetenhall, Esq., for six pots of Lily of the Valley.
Mr. J. W. Moorman, for twelve Hyacinths.
Messrs. Carter & Co., for twelve Hyacinths.
Messrs. Barr & Sugden, for twelve Hyacinths.
Mr. James Weir, for twelve pots of Tulips.
Mr. G. Wheeler, for twelve Clematis.
Mr. Goddard, for Collection of Cyclamens.

SMALL BRONZE MEDAL.

Mr. James Weir, for six pots of Lily of the Valley.
Mr. James Weir, for twelve Hyacinths.
Mr. George Toms, for six Deutzias.
Messrs. Carter & Co., for six Dielytras.
Messrs. Cutbush & Son, for cut Camellias.
Mr. James, for Collection of Cinerarias.
Mr. B. S. Williams, for Collection of Amaryllis.

BOTANICAL CERTIFICATES of MERIT. NEW PLANTS.

Messrs. Veitch & Sons, for Adiantum digitatum.
Messrs. Veitch & Sons, for Adiantum Luddemannianum.
Messrs. Veitch & Sons, for Abutilon Darwinii tessellatum.
Messrs. Veitch & Sons, for Brahea filamentosa.
Messrs. Veitch & Sons, for Grevillea Preissii.
Messrs. Veitch & Sons, for Odontoglossum Chestertoni.
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Hardy Primrose Seed.

L. T. DAVIS offers to the Trade a quantity of the above, from selected varieties of a splendid strain, chiefly high-coloured sorts. Price per ounce or pound on application.

Ogle's Grove Nursery, Hillsborough, Co. Down.

VICTORIA MIGNONETTE is the best of the red-flowered section; blooms continuously until cut off by frost, deliciously scented, and forms perfect specimens, with 200 to 300 spikes of blossom; invaluable for cut flowers. Packets, 6d and 1s. each, free by post.

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TREE FERNS.—An English Gardener is now collecting and sending to England the best specimens of Dicksonia antarctica from the coolest districts of Tasmania, from 4 feet to any height required. Freight and all expenses paid to London. For price and all particulars apply to

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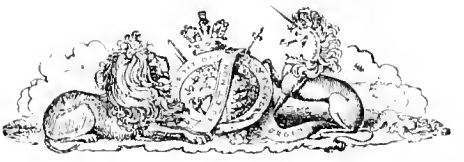

ROYAL LETTERS PATENT.

RENDLE'S PATENT PLANT HOUSES,

CONSERVATORIES, PLANT PROTECTORS, AND ORCHARD HOUSES.

UNDER THE PATRONAGE OF

His Royal Highness the Prince of Wales
His Royal Highness Prince Christian
His Highness the Maharajah Dhulep Singh
Her Majesty's Commissioners for Parks and Gardens
His Grace the Duke of Rutland
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His Grace the Duke of Devonshire
The Most Noble the Marchioness of Anglesey
The Right Honourable the Earl of Stamford and Warrington
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Sir Daniel Gooch, Bart., M.P.
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The Royal Aquarium and Winter Garden Society, Westminster
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The Great Western Railway Company [Kingdom;
And One Thousand of the leading County Families in the United

The highest Testimonials can be obtained on application, and references given to Noblemen and Gentlemen in every County in England.

RENDLE'S PATENT SYSTEM OF GLAZING.

THE WOKING CLEMATIS HOUSE.

RENDLE'S PATENT.

Extract from the Catalogue just published by Messrs. Geo. Jackman & Sons, The Nurseries, Woking, Surrey.

"The structure represented on the opposite page is a Clematis House, which has been erected for us by Mr. W. E. Rendle, according to his patented mode of construction, by which the whole of the woodwork is protected by the glass. The house is unheated, and intended merely as a protection against severe frosts; but we look upon it as a capital model of a speedily erected cold greenhouse, being strong, light, airy, and free from drip. Our winter's trial of Mr. Rendle's Houses being satisfactory, we embrace the earliest opportunity of stating our experience, which is such as to justify us in confidently recommending them for purposes similar to those to which we have applied them."

This system has been now severely tested in all weathers during the last three winters, as the following letter will prove. The "Woking Clematis House" was erected on Woking Common, in the Summer of **1873**, in a very EXPOSED POSITION, and has stood all the SEVERE GALES OF WIND, SNOW AND HEAVY RAINS from that time to this:—

To Mr. W. E. Rendle, 3, *Westminster Chambers, Victoria Street.*

"Dear Sir,—I am pleased to inform you that the house you erected for me in 1873 has stood well, and is in as sound a condition as when your workmen left it, and answers my purpose admirably. "Yours truly,

"Dated, Woking Nursery, March 18, 1876. "GEORGE JACKMAN."

From the "ARCHITECT," February, 1876.

This system has been in use for some time past, and has been very successfully applied to horticultural purposes. In the glazing of railway roofs a great difficulty has always arisen from the shaking and vibration produced by passing trains, especially when such trains have been going at express speed. It is found that the putty with which the panes are fixed is almost entirely shaken out, and in consequence the cost of maintenance becomes very great. In Rendle's system no putty is used, and we are informed that the cost of keeping the glazing in thorough repair is less than one twentieth that of the old system.

The following are some of the advantages claimed for the method of glazing adopted by Mr. Rendle:—In forming a circular roof straight glass is used, at one-half the cost of ordinary bent glass. The cost of iron sash bars for curved glass is considerably more than those used on the old system. The cost of repairing curved glass is very large, and would be from six to ten times more than the repair of the glass on the new system. If bent glass is cemented by putty to iron ribs, it is liable to be broken by expansion and contraction of the metal. In the Manchester Botanic Gardens there are thousands of squares broken from this cause. In the new grooves provision is made to guard against this by giving the glass full play in all directions. The patent grooves are so made that they carry off all water from inside as well as outside. This is of material consequence in buildings that are sometimes very much crowded, as much water is generated from condensed steam. All the woodwork, iron, and paintwork of the roof is covered by the glass. The increased durability effected by this arrangement is obvious, if a pane of glass is broken it can be instantly replaced. A large roof constructed on this system has an excellent effect, as only a narrow strip of zinc is seen, and the roof has in consequence the appearance of being formed entirely of glass. It is stated that a roof can be glazed on this principle in one-fourth the time occupied by the old system, and that 1500 square feet of glazing has been done in one hour by one man. The great circular roof of the Royal Aquarium, at Westminster, has been glazed on this principle, not less than 60,000 superficial feet of Hartley's 21-oz. and 32-oz. glass having been used. The total weight was nearly 50 tons. The whole of the glass was put in position by two men in ten weeks; of course labourers were employed to carry the glass up to the position where it was required for glazing. The stability of the system had a very severe test during the erection of the large roof of the Aquarium. When about one-half of the roof over the great promenade was finished, it was exposed at the west end to the full fury of the gale of wind that swept over the Metropolis and other parts of the country on November 6 last, and was not injured in any way, not a single square of glass having been displaced.

RAILWAY STATIONS, WINTER GARDENS, EXHIBITION BUILDINGS, SKATING RINKS,

RAILWAY SHEDS, MARKETS, PUBLIC BUILDINGS, &c.

The new system of Glazing will speedily be introduced for the above; and Architects, Surveyors, Builders, and Contractors are especially recommended to adopt it.

On Some Railways the expense of Repairing and Renovating of Glass Roofs is very large; and an enormous saving will be effected when the new system of Glazing is introduced.

The Patentee has already received instructions from the Great Western Railway Company to cover several of their new Stations on the system.

Architects, Surveyors, Builders, and Contractors, are requested to see the great Circular Roofs of the Royal Aquarium and Winter Garden in Westminster.

On the old putty system the intense heat of the sun in the summer months cracks the putty, then the heavy autumnal and winter rains get in the crevices, the putty perishes, and in a short time the bars are rotten and decayed. On the new system there are no sash-bars, no putty, or paint to destroy. All perishable materials are completely covered by the Glass from the damaging influences of the weather, and the system may therefore fairly be called Indestructible.

PUBLIC AND PRIVATE SKATING RINKS.

Estimates will be forwarded on application for the formation of Public and Private Skating Rinks.

The floors can be constructed of best Diamond Cement, Asphalte, or Pine Wood.

Ornamental Designs for Skating Rinks will be furnished.

ILLUSTRATED CATALOGUES and BOOKS of DESIGNS, with eighty excellent Illustrations, can be had on application to the Patentee and Inventor,

WILLIAM EDGCUMBE RENDLE,

HORTICULTURAL ENGINEER, 3, WESTMINSTER CHAMBERS, VICTORIA STREET, LONDON, S.W.

Alternantheras—Centaureas.

WILLIAM MILES offers good healthy Plants from stores of ALTERNANTHERA AMŒNA and A. AMŒNA SPECTABILIS, at 8s. per 100, 70s. per 1000. A. MAGNIFICA, A. PARONYCHIOIDES, and A. AMABILIS LATIFOLIA, at 6s per 100, 50s. per 1000.

CENTAUREA CANDIDISSIMA, strong stuff, in small 60-size pots 20s. per 100, £8 per 1000, package included. Terms cash.—Wm. Brighton Nurseries, Brighton, Sussex.

HOVCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of

WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
VYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

A BARGAIN is offered in a lot of very extra strong BLACK HAMBURGH VINES, which must, on account of alterations, be moved out of a border in which they were planted to be fruited this year. They have never borne a berry, and would ripen 20 lb. to 30 lb. of fruit well. Strong Canes, with splendid healthy roots, 10s. 6d. each.
L. WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

Verbenas for the Million.

S. BIDE can now supply for cash :—
VERBENAS, strong spring-struck plants of Purple King, Scarlet, White, Pink, and other varieties, at 8s. per 100. 60s. per 1000, package free.
PELARGONIUMS, Show and Fancy, of the best varieties, 40s. per 100.
GERANIUMS, plain-leaved and Zonal, strong autumn-struck plants, 10s. per 100.
CENTAUREA CANDIDISSIMA, autumn-struck and well-established in large 60-pots, 40s. per 100.
CALCEOLARIAS, aurea floribunda, Golden Gem, and others, 8s. per 100.
Cash to accompany all orders from unknown correspondents.
S. BIDE, Alma Nursery, Farnham, Surrey.

A. M. C. JONGKINDT CONINCK'S MAIDEN FRUIT TREES are extra strong, and all fit for Cordons. The greatest care has been taken to have the sorts true to name.

A great quantity of ROSES can be had very cheap.
WANTED, AZALEA PONTICA, fit for grafting this autumn. Send priced samples by post.
Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

The Best Lawn Mixture.

JAMES DICKSON & SONS' FINEST LAWN MIXTURE, for Forming New or Renovating Old Lawns, is VERY SUPERIOR to all others.
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RHODODENDRON PONTICUM, 4-yr. old seedlings, not grown on bog, but on heath soil, with fine roots; stiff healthy plants, 3 to 4 inches high, 5s. per 1000. Also Hybrid Catawbiense, named sorts, 7s. 6d. per 1000; with transplanted, from 1 to 1½ foot up to 3 and 4 feet, at very low prices, which can be had on application.
OAKS, large quantity, 3 to 4 and 4 to 5 feet.
With a GENERAL NURSERY STOCK. Prices on application.

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MR. POSTANS' NEW ZONAL GERANIUMS of 1875.
Strong plants, the fourteen for 10s. 6d.; do. cuttings, 6s. 6d.; the Silver-edged White-flowering and Silver-edged Fancy flowering varieties, the set of eight for 12s.; cuttings, 1s. each, 6d. extra free by post.
COLEUS DUCHESS of EDINBURGH, well coloured plants, post-free, 6s. 6d. per dozen.
HERBACEOUS PHLOX, good stuff, 4s. 6d. per dozen; cuttings, 1s. 3d. per dozen, by post.
CHARLES BURLEY, Nurseries, Brentwood.

Cheap Plants.

WILLIAM BADMAN offers the following cheap Plants for present potting :—
VERBENAS, Purple, Scarlet, White, Rose, Crimson, &c., best bedding sorts, healthy, hardy stuff, 6s. per 100, 50s. per 1000; also 20 fine named varieties, 8s. per 100.
CALCEOLARIA, Golden Gem and aurea floribunda, 5s. per 100, 40s. per 1000.
LOBELIA SPECIOSA (true), from cuttings, sturdy plants, 3s. per 100, 20s. per 1000.
HELIOTROPE, finest dark sorts, 6s. per 100.
PELARGONIUMS, Scarlet, White, Pink, Crimson, best sorts, from single pots, 1s 6d. per dozen, 10s. per 100.
IRESINE LINDENI, fine crimson-leaved bedding plant, 6s per 100.
CENTAUREA CANDIDISSIMA, silver leaf, in single pots, 20s. per 100, 3s. per dozen.
VESUVIUS, the best Scarlet Pelargonium for pots or beds, good plants, 1s. 6d. per dozen, 10s. per 100.
Package included. Terms cash.
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DICK RADCLYFFE AND CO. supply every Sundry for the Wholesale Trade.
BOUQUET PAPERS, Flat, per gross :—3½ in., 3s. 6d.; 5½ in., 5s. 6d.; 7½ in., 7s. 6d., 9 in., 10s. 6d.; 10 in., 13s.; 11 in., 14s. 6d.
,, Scalloped, in splendid new patterns, per gross :—5 in., 24s.; 6 in., 28s.; 6¼ in., 31s.; 7¼ in., 34s.
POT COVERS, in fine variety, 2s. 6d., 3s. 6d., 4s. 6d. to 12s. per dozen.
GARDEN LABELS, per 1000 :—5 in., 5s.; 6 in., 5s. 6d.; tied in hundreds.
GARDEN FLOWER STICKS, per 1000 :—1 ft., 5s.; 1½ ft., 8s.; 2 ft., 11s. 6d.; 2½ ft., 16s. 6d.; 3 ft., 21s.; 3½ ft., 27s.; 4 ft., 30s.; 4½ ft., 36s.; 5 ft., 40s.
YELLOW WREATHS, per dozen :—7 in., 6s. 6d.; 7½ in., 8s.; 8 in., 9s. 6d.; 9 in., 12s. 6d.; 9½ in., 15s. 6d.; 10½ in., 18s. 6d.; 11 in., 22s.; 12 in., 29s.
WHITE WREATHS, about double above prices.
METAL WREATHS, in new designs, from 15s. per dozen.
DRIED FLOWERS, WREATHS, CROSSES, BOUQUETS, &c., for Easter Decoration. WHITE CAPES, 30s. per 1000. LISTS on application.
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Prize Hybrid Gladioli.

ROBERTSON AND GALLOWAY, having grown and exhibited the Gladiolus successfully for several years, are in a position to offer the most suitable varieties either for Competition or Flower Garden Decoration. The Press in noticing the spikes they exhibited last year, said :

"The 1st prize (at Kensington) in the open class for twenty-four spikes, was awarded to one of the finest stands ever presented at a public exhibition."—*The Gardeners' Magazine, Sept.* 4.

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Finest Competition Varieties ..	30s., 40s., and 50s.
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Post or Carriage-free for cash with order.
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CHOICEST NEW FLOWER SEEDS.
Carriage post-free.
The choicest strains of the following :—

CALCEOLARIA CINERARIA PRIMULA CYCLAMEN POLYANTHUS AURICULA	All in 1s. 6d., 2s. 6d., or larger packets.

Choice GERMAN and ENGLISH FLOWER SEEDS, in Collections :—No. 1, 10s. 6d.; No. 2, 15s.; No. 3, 21s.; No. 4, 30s.; No 5, 42s.

Choice Hardy Annuals,	Choice Ornamental Grasses,
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,, Biennials and Perennials,	&c. &c.

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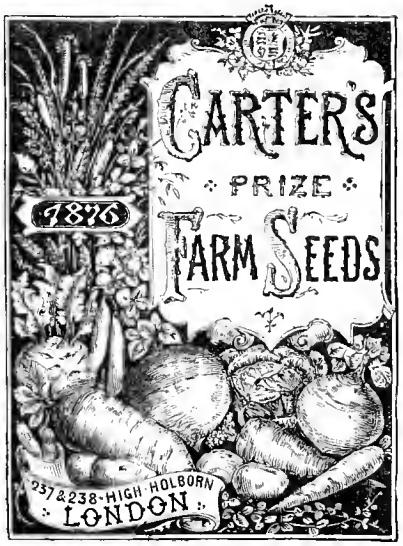

GEORGE GRAY AND SON beg to offer the undermentioned really good grown well-rooted stuff; the whole having been lifted last autumn, will thereby remove without risk. Orders will be carefully packed for any distance.
ARBOR-VITÆ, American, 12 in., stout, 18s. per 100; also larger sizes.
,, Chinese, fine seedlings, 30s. per 1000; transplanted, 10s. per 100.
HEMLOCK SPRUCE, 1 to 2 feet, 40s. per 100.
YEWS, English, transplanted, 4-yr. old, stout, 80s. per 1000.
HOLLIES, Common, 1-yr., 1-yr. transplanted, 25s. per 1000; 6 to 9 in., stout, 40s. per 1000.
CEDRUS DEODARA, 9 in., stout, 30s. per 100.
BERBERIS DARWINII, 2-yr., fine, 20s. per 1000; transplanted, 10s. per 100.
,, AQUIFOLIUM, 2-yr., 10s. per 1000.
,, STENOPHYLLA, 2-yr., 6s. per 100.
RHODODENDRONS, best named sorts, 1-yr. grafted, £5 per 100.
PRIVET, Japan, 18 in., stout, 8s per 100.
,, Box-leaved, 18 in., 8s. per 100.
SPRUCE, Black American, 9 to 12 in., 10s. per 100.
,, White American, 9 to 12 in., 8s. per 100.
,, orientalis, 6 to 9 in., 8s. per 100.
CUPRESSUS LAWSONIANA, 6 to 9 in., stout, 40s. per 1000; 2 feet, stout, 40s. per 100.
PINUS PONDEROSA, transplanted, 8s. per 1000.
,, MURICATA, 2 feet, 50s. per 100.
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,, AUSTRIACA, 2 feet, 50s. per 1000,
,, LARICIO, 1 to 2 feet, 10s. per 100.
,, EXCELSA, 1 to 2 feet, 25s. per 100.
,, WEYMOUTH, 9 to 12 in., 10s. per 100; 2 to 3 feet, 25s.
ROSES, H. P., in pots, best kinds, 12s. to 18s. per dozen.
,, Climbing, 9s. per dozen.
BROOM, White and Yellow Spanish, 10s. per 100.
A large stock of MAIDEN FRUIT TREES, suitable for cordons, and Dwarf Roses on the Manetti Stock, cheap.
ACACIAS, strong, of the following varieties :—hispida, Bessoniana, pendula, and inermis, which may be transplanted safely now.
Nurseries, Brox, near Chertsey, Surrey.

BEDDING VIOLAS for the MILLION.—Perfectly hardy, easily propagated, flower from April to October. 100 in 12 distinct named sorts for 20s., 50 for 12s. 6d., 25 for 7s. Also Prize Show and Fancy PANSIES and PHLOXES, own selection, 6s. 6d. per dozen. Sent free by post to all parts of the United Kingdom on receipt of post-office order.
DICKSONS AND CO., Nurserymen, Seedsmen and Florists, 1, Waterloo Place, Edinburgh. Established 1770. New Nurseries at Pilrig Park.

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CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.
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SUMMERS AND BOULTON, Dawley, Shropshire.
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THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
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New and Genuine Seeds Only.

Now ready, gratis and post-free,
BRUNNING AND CO.'S New Illustrated and DESCRIPTIVE CATALOGUE of the above for the present season, containing a selection of the choicest novelties, together with the most approved older varieties, profusely Illustrated, and contains a splendid Coloured Plate representing a group of choice Hybrid Gladioli, for the growth of which their Nurseries are noted. Forwarded post-free to all applicants.
ISAAC BRUNNING AND CO., The Yarmouth Seed Establishment, 1, Market Place, Great Yarmouth.

Important to Farmers.

SAMUEL FINNEY AND CO., SEED MERCHANTS and IMPORTERS, Newcastle-upon-Tyne, beg to inform Agriculturists and others that their FARM SEED LIST for 1876 is now ready, and will be forwarded post-free upon application.
Established more than a century.

JAMES SMITH, Darley Dale Nurseries, near Matlock, offers the following :—
10,000 CUPRESSUS LAWSONIANA, 15 to 18 inches, 3s. per dozen, 18s. per 100; 2 to 3 feet, 5s. per dozen, 30s. per 100; 2½ to 3½ feet, 6s. per dozen, 40s. per 100; 3 to 4 feet, 9s. per dozen, 65s. per 100, also larger plants.
5,000 CRYPTOMERIA ELEGANS, a fine Conifer from Japan, perfectly hardy—15 to 18 inches, 8s. per dozen; 1½ to 2 feet, 10s. per dozen; 2 to 3 feet, 15s. per dozen; 3 to 4 feet, 22s. per dozen. Also CRYPTOMERIA JAPONICA and LOBBII, of various sizes
10,000 IRISH IVIES, good plants, 3s. per dozen, 10s. per 100.
10,000 PICEA NOBILIS, in perfect health, 1½ to 2 feet, 8s. per dozen, 60s. per 100; 2 to 2½ feet, 22s. per dozen; 3 to 3½ feet, 60s. per dozen.
5,000 RETINOSPORAS, fine plants, of various kinds.
100,000 FLOWERING SHRUBS, of various kinds.
10,000,000 RHODODENDRONS. See Catalogue
60,000 HARDY HEATHS.
20,000 KALMIAS, various.
10,000 LEDUMS, various.
10,000 ANDROMEDAS, various.
30,000 GAULTHERIA SHALLON.
10,000 BOX, 1½ to 2 feet.
20,000 PRIVET, Evergreen, 2 to 3 feet.
20,000 PINUS CEMBRA, fine plants, of various sizes.
10,000 ARBOR-VITÆ, American, of various sizes, an excellent plant for Hedges; also LOBBII and others.
10,000 HYPERICUM CALYCINUM.
CATALOGUES free by post.

AVENUE TREES.

	Girth 4 ft. from ground.
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10 inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8 ,,
MAPLES, Norway, 12 to 16 feet high ..	5 to 8 ,,
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10 ,,
,, Scarlet, 10 to 14 feet high	8 to 10 ,,
,, Double, 10 to 14 feet high	8 to 10
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10 ,,
ELMS, 15 to 18 feet	7 to 9 ,,

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.
Knap Hill Nursery, Woking, Surrey.

NEW FUCHSIAS of 1875, now ready to send out, carefully selected from the best kinds sent out in 1875, in good plants. Twelve select New Fuchsias, 4s.; 12 best selected varieties of 1874, for 3s.; 12 very fine older varieties, 2s.; all sent post free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW DOUBLE WHITE GERANIUM, "GEORGE SAND," the largest and best Double White; 12 superb varieties Double Geraniums, including "George Sand" and other new colours, in good plants, post-free for 6s.
NEW AGERATUM, DUCHESS of EDINBURGH, the best Dwarf Blue yet produced, 3s. per dozen, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW VICTORIA DAISIES.—This new strain of Double Daisies produces flowers 6 inches in circumference, on long foot-stalks 8 inches high, looking more like large Ranunculi than Daisies. They are decided acquisitions to our early spring-blooming plants. B. W. K. is now enabled to offer the following six varieties, post-free for 2s., viz. :—Albert Edward, Albert Victor, Masterpiece, Nil Desperandum, Renown, Queen Victoria; 12 newer varieties of 1873, in 12 fine varieties, for 6s., post-free; also a fine mixture of colours, unnamed, at 1s. 4d. per dozen, or 8s. per 100, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,
KNAP HILL NURSERY, WOKING, SURREY.

JOHN CATTELL

BEGS TO ANNOUNCE THAT HIS

ILLUSTRATED CATALOGUE

OF

KITCHEN GARDEN AND FLOWER SEEDS,

Including a Choice Selection of the latest Novelties for 1876,

Is now ready, and will be forwarded gratis and post-free on application.

NURSERY and SEED ESTABLISHMENT,
WESTERHAM, KENT.

TREES AND SHRUBS ON SALE.

B. WHITHAM,

The Nurseries, Reddish, near Stockport,

Has still a large quantity of the following fine, healthy, extra transplanted Trees and Shrubs to offer, at specially low prices:—

BEECH, ranging from 2 to 10 feet.
POPLARS, in sorts, from 3 to 10 feet.
ENGLISH YEWS, 1 to 4 feet.
RHODODENDRONS, 6 to 9 and 9 to 12 inches.
,, 1 to 1½ foot, and 1½ to 2 feet.
Must be sold: no reasonable offer refused.

FIRST PRIZE ROSES,

FROM

CRANSTON'S NURSERIES, HEREFORD.

Try our One Guinea, Two Guinea, and Three Guinea Collections.

ONE GUINEA COLLECTION contains Thirty Selected First-class Show Roses.

TWO GUINEA COLLECTION contains Sixty Selected, Distinct, and all First-class Show Roses.

THREE GUINEA COLLECTION contains One Hundred of the Finest Roses, New or Old, in cultivation, Selected from upwards of 600 Varieties.

Either of the above Collections will be carefully packed and forwarded, on receipt of Cheque or Post-office Order payable to

CRANSTON & MAYOS, HEREFORD.

N.B. Upwards of Fifty First Prizes, including the 25 Guinea Silver Challenge, open to all England, were awarded to us in 1875.

THE KNAP HILL CYPRESS,

Cupressus Lawsoniana erecta viridis.

ANTHONY WATERER

Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices:—

3 feet high, 2½ feet in circumference, 30*s.* per doz.
4 feet high, 3 to 4 feet do., 42*s.* to 60*s.* per doz.
5 feet high, 4, 5 and 6 ft. do., 10*s.* 6*d.*, 15*s.* to 21*s.* each.
6 and 7 feet high, 6 to 7 and 8 ft. do., 21*s.* to 31*s.* 6*d.* each.

No cuttings have been taken from the plants here referred to, which are simply perfect in growth and splendidly rooted.

KNAP HILL NURSERY, WOKING, SURREY.

FRANCIS & ARTHUR DICKSON & SONS.

106 Eastgate St. & The "Upton" Nurseries **CHESTER.**

Farm Seeds Extra Select & of Unsurpassed Quality

Carriage Paid.

Illustrated Catalogue, Free.

Conifers, New and Rare.

MORRISON BROTHERS, NURSERYMEN, Aberdeen, will be happy to send, carriage paid, to any address, six Seedling Plants of each of the following fine CONIFERS for £4, twelve of each for £7 10*s.*, or twenty of each for £12. Most of the varieties can be offered by the 1000. Liberal offers made to large buyers:—

Abies commutata.
,, Douglasii.
,, ,, glauca.
,, Hookeriana.
,, Menziesii.
,, orientalis.
,, obovata.
,, Schrenkiana.
,, Wilhamsonii.
Cedrus atlantica.
,, Deodara.
Cupressus Lawsoniana.
,, macrocarpa.
Picea amabilis.
,, bifolia.
,, concolor.
,, ,, violacea
,, grandis.
,, lasiocarpa.
Picea magnifica.
,, nobilis.
,, Nordmanniana.
,, Pinsapo.
Pinus aristata.
,, californica.
,, contorta.
,, deflexa.
,, flexilis.
,, Lambertiana.
,, Monticola.
,, muricata
,, pyrenaica.
,, taurica.
Thuja gigantea.
,, Lobbii
Thujopsis dolabrata.
,, laetevirens.
,, Standishii.

NEW VERBENAS (ECKFORD'S).
The finest ever yet offered. See
JOHN KEYNES' CATALOGUE, 1876.

NEW ROSES, 1876.
Selected varieties. See
JOHN KEYNES' CATALOGUE, 1876.

LETTY COLES (KEYNES')—
the ROSE of the season—
Will be sent into commerce the first week in May.
All particulars, consult
JOHN KEYNES' CATALOGUE.

NEW DAHLIAS for 1876.
Keynes' grand flowers. See
JOHN KEYNES' CATALOGUE for 1876.
Castle Street Nursery, Salisbury.

Bulbous or Tuberous Begonia Seed.

L. PAILLET, NURSERYMAN, Chatenay, near Paris, offers for the present season, from his own growth, and cropped on the very best varieties known, seeds of the said BEGONIAS at the following rates:—Per packet containing 1 gramme, 6*s.*; per packet containing 5 grammes, £1 5*s.*

Seeds of CLEMATIS, cropped on the best varieties known, such as Helena, Sophia, Jackmanni, Lanuginosa, Lady Bovill, magnifica, and others:—Per packet containing 30 grammes, 8*s.*; per packet containing 100 grammes, £1 4*s.* (One gramme represents 1-28th of an ounce.) CLEMATIS from Seed, fine mixed varieties of all kinds, 3 to 4 years old, £2 per 100.

N.B.—Orders may be addressed directly to L. PAILLET, or his Agents, Messrs. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C., where CATALOGUE and List may be had on application.

SEEDS, SEEDS, SEEDS.

FLOWERS ALL THE YEAR ROUND
obtained by sowing one of the

HEATHERSIDE NURSERIES COMPANY'S

10*s.* 6*d.* COLLECTIONS, carriage free.

CONTAINS:—

ASTERS, 12 splendid varieties; STOCKS, 12 splendid varieties; HARDY ANNUALS, 12 splendid varieties; EVERLASTING FLOWERS, 6 splendid varieties; HARDY PERENNIALS, 6 splendid varieties; FANCY GRASSES, 3 splendid varieties; TENDER ANNUALS, 12 splendid varieties; MIGNONETTE, 1 oz.; SWEET PEAS, finest mixed, 2 oz.

For Vegetables all the Year Round, order their 21*s. Collection, the largest and best ever offered.*

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ORCHIDS, ORCHIDS, ORCHIDS.

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Offers Orchids, good sorts, nice plants, at 21*s.*, 30*s.*, and 42*s.* per dozen.

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RALPH WALLER AND CO., 45, Dale Street, Manchester, Manufacturers of all kinds of GARDEN NETTING, &c., for protecting Fruit Trees from Frost; also

FRIGI DOMO, 2 yards, 4 yards, and 3 yards wide.

HOT-HOUSE SHADINGS of various thicknesses, superior to any other yet discovered for lightness, strength, and durability, standing, as they do, all weathers.

TIFFANY of various kinds always on hand. Netting and Shading in pieces 30 yards long by 1½ yard wide. Tiffany in pieces 20 yards long, 48 inches wide. Also Tiffany in mineralised state.

For prices, &c., apply to the above address—
45, Dale Street, Manchester.

CRANSTON'S NURSERIES

(ESTABLISHED 1785).

Special Offer to the Trade.

FRUIT TREES, extra strong, dwarf-trained, with from five to ten shoots.

PLUMS, Victoria and other leading kinds.

APPLES, ORANGE (Blenheim), &c.

PEARS, Williams' Bon Chrétien, Louise Bonne, &c.

CHERRIES, Morello, Duke, Bigarreau, &c.

PEACHES and **NECTARINES.**

A quantity of fine Maiden Morello.

Address:
CRANSTON AND MAYOS, HEREFORD.

XANTHOCERAS SORBIFOLIA.

First-class Certificate Royal Horticultural Society, March 15, 1876.

THE

NEW PLANT and BULB COMPANY

Have much pleasure in offering the above extremely valuable hardy flowering Shrub.

For particulars of this and other choice Plants and Bulbs see SPECIAL LIST, free on application.

LION WALK, COLCHESTER.

MUSSELL STOCKS.

WILLIAM FLETCHER

Has the above to offer, strong and well-rooted, Price 40*s.* per 1000.

APRICOTS, Dwarf Maiden Moorpark; PEACHES, Royal George and Noblesse, 50*s.* per 100.

THE OTTERSHAW NURSERY, CHERTSEY.

RHODODENDRONS.

FINE NAMED LEADING KINDS, 1½ to 3 feet, from £7 10*s.* to £10 10*s.* per 100.
HYBRID SEEDLINGS, leading kinds, 1½ to 3 feet, from 50*s.* to 75*s.* per 100.
ANDROMEDA FLORIBUNDA, 1 foot, from 50*s.* to 60*s.* per 100.
KALMIA LATIFOLIA, 1 to 1½ foot, from 50*s.* to 60*s.* per 100.
AZALEA PONTICA, 1 to 1½ foot, from 60*s.* to 75*s.* per 100.
All the above are very fine bushy, well grown plants, and are offered very cheap to effect a clearance.

CHARLES NOBLE, BAGSHOT.

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NEW

DESCRIPTIVE SEED CATALOGUE

Contains many Novelties, and nearly 300 Illustrations of Plants and Flowers.

CYCLAMEN PERSICUM MONSTROSA PLENO, 2*s.* 6*d.* and 5*s.* per packet.
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"LUCY GRIEVE" PEAR, First-class Certificate, see above Catalogue.
VINES and BULBOUS-FLOWERED ROOTS, suitable for this Season's Planting and Bloom; see the Catalogue.

The Wellington Nursery, St. John's Wood, London, N.W.

Vegetable & Flower Seeds.
Seed Potatos, Garden Tools &c.
Superior quality, Carriage free
Descriptive Priced list post free,
James Dickson & Sons
"Newton" Nurseries and
108, Eastgate Street,
Chester.

SUTTON'S CHOICE GLADIOLI.

SUTTON'S COLLECTIONS of GLADIOLI.

Choice Exhibition Varieties.

25 splendid varieties (our selection)	£2 0 0
12 splendid varieties (our selection)	1 0 0

Choice Varieties for Garden Decoration.

100 roots, in 50 beautiful varieties	£5 0 0
50 roots, in 50 beautiful varieties	2 10 0
25 roots, in 25 beautiful varieties	1 5 0
12 roots, in 12 beautiful varieties	0 12 0

Cheaper but Showy Varieties.

25 roots in 25 choice varieties	£0 17 6
12 roots in 12 choice varieties	0 9 0
12 roots in 12 good varieties	0 6 0
Finest Mixed	per dozen 5s., per 100 1 15 0
Fine Mixed French Seedlings	per dozen 3s., per 100 1 1 0
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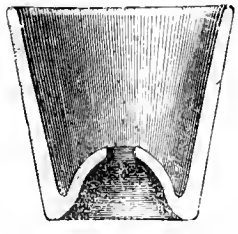
THE QUEEN'S SEEDSMEN, READING.

NEW PATENT.

THE "SUTTON" RESERVOIR FLOWER POT.



Messrs. Wheeler Brothers,
STEAM POTTERY WORKS, READING,

Are now prepared to receive applications for Licenses from Potters desirous of making and selling the above in various parts of the United Kingdom.

Opinion of Shirley Hibberd, Esq.,
Editor of the *Gardeners' Magazine*, Author of "Rustic Adornments," &c.

"Amongst the many attempts made to improve the common Flower Pot this alone, as far as my experience goes, is worthy of general adoption."

HERBACEOUS CALCEOLARIAS.

E. G. HENDERSON & SON

Offer fine vigorous Plants of their First-class Exhibition strain, in 48-sized pots, ready to pot forward, perfectly free from insect, and quality of flowers the best that can be had.

A few hundreds to spare over the stock required for home growth. Price on application.

THE WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON, N.W.

PHALÆNOPSIS INTERMEDIA PORTEI.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, April 3, a strong Established Plant, in flower, of the extremely rare and beautiful PHALÆNOPSIS INTERMEDIA PORTEI. The variety is remarkably good, the lip being unusually high coloured.

On view the morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

ODONTOGLOSSUM VEXILLARIUM.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, April 3, at half-past 12 o'Clock precisely, very choice Imported ORCHIDS from New Grenada and Burmah, comprising fine plants, in the best possible condition, of ODONTOGLOSSUM VEXILLARIUM, CATTLEYA GIGAS, UROPEDIUM LINDENI, DENDROBIUM BOXALLI, D. CRYSTALLINUM, D. LITUIFLORUM, D. THYRSIFLORUM, D. DALHOUSIANUM, D. FORMOSUM GIGANTEUM, VANDAS, AERIDES, &c.; also fine established plants, many of them in flower, of PHALÆNOPSIS SCHILLERIANA, P. AMABILIS, P. LUDEMANNIANA, DENDROBIUM WARDIANUM, D. DEVONIANUM, &c.

On view the morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

IMPORTED ORCHIDS FROM ASSAM.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, April 6, at half-past 12 o'Clock precisely, a very large importation of various ORCHIDS from Assam, including many hundreds of the hitherto rare and pretty PLEIONE HUMILIS and many hundreds of P. MACULATA; a quantity of VANDA CŒRULEA, including one fine mass with upwards of twenty growing stems; also a quantity of the hitherto rare V. UNDULATA, V. CRISTATA; hundreds of DENDROBIUMS CAMBRIDGEANUM, D. TRANSPARENS, the rare DENDROBIUM MARMORATUM, and a quantity of a species unknown, probably quite a new; a large quantity of CŒLOGYNE CORYMBOSA, never before seen in England in a living state, and a quantity of the rare CŒLOGYNE BARBATA, "which is," said Dr. Lindley, "perhaps the finest of the fine genus." Also a number of the rare AERIDES VANDARUM, CYMBIDIUMS of sorts, one probably a new species. Also several plants of a CYPRIPEDIUM, which appears very distinct, and is probably quite new.

At the same time will be sold a quantity of the rare ODONTOGLOSSUM LINDENI. Previous to this importation only a few plants (true) of this handsome species were known to exist. Also a quantity of imported plants of ODONTOGLOSSUM CRISPUM (ALEXANDRÆ).

THE WHOLE TO BE SOLD WITHOUT THE LEAST RESERVE.

On view the morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

SALE of a CHOICE COLLECTION of NEW and RARE PLANTS.

MR. J. C. STEVENS has received instructions from Mr. JAMES W. WIMSETT, of Chelsea, to Offer for SALE, on MONDAY, April 10, a Collection of STOVE and GREENHOUSE PLANTS, suitable for Table and House Decoration. Amongst others will be found the following:—

COCOS WEDDELLIANA, 3 to 4½ feet high
LIVISTONIA ROTUNDIFOLIA
DÆMONOROPS PALEMBANICUS
MARANTA MAKOYANA, 4 ft. through, show plant
KENTIA FOSTERIANA
KENTIA BELMOREANA
VERSCHAFFELTIA MELANOCHÆTES
PHŒNICOPHORIUM SEYCHELLARUM
MACROZAMIA CORALLIPES
CORDYLINES, 10 to 15 ft. high, handsome specimens.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

MESSRS. FROEBEL & CO.

Call attention to the following valuable PLANTS contained in their NEW CATALOGUE for January :—

ABUTILON DARWINI TESSELLATUM.

This novelty, which they sent out on April 1, 1875, was awarded a First-class Certificate at the last meeting of the Royal Horticultural Society. It has been spoken of very highly in the *compte rendu* of the Versailles Exhibition in *Revue Horticole*, 1875, page 412. It will prove itself very effective as well for pot culture, in portable specimens, as for flower garden groups, by its rich golden variegated foliage and the abundance of large scarlet flowers.

Price, 3s. each; per dozen, 21s.

AGAVE SPECTABILIS.

Messrs. FROEBEL & CO. are in possession of the whole stock of this plant, introduced by M. B. Roezl. It is invaluable for decorative purposes.

Strong plants are offered at the moderate price of 5s. to 10s. each.

AGAPANTHUS MINOR MOOREANUS.

This very interesting plant will be found quite hardy in England. During this winter several plants left out-of-doors, covered with snow, have well resisted a low temperature. The plant is a very free bloomer, and the numerous umbels are of a beautiful intensive blue.

Price, 4s. each.

AGAVE SALMIANA AUREO-MARGINATA.

Messrs. FROEBEL & CO. have introduced this new variety, which, without doubt, is one of the finest variegated plants. This novelty attains the same size as the well-known A. Salmiana, each leaf being broadly margined with bright golden-yellow. This very rare plant was awarded a First-class Certificate at South Kensington, May 26, 1875.

Price, 31s. to 42s. each.

BEGONIA FROEBELII, A. De C.

MESSRS. FROEBEL AND CO. have the pleasure to announce that the following high awards have been given to this new species, which was sold by them for the first time last autumn :—

First class Certificate by the Royal Horticultural Society, August 4, 1875.

Gold Medal at the International Exhibition, Cologne, in August, 1873 (first prize for the best new flowering plant not yet in commerce).

First-class Silver Medal at Lyons, September 11, 1875, for one plant of Begonia Froebelii, though it arrived at the exhibition in a very bad condition.

A representation of this splendid plant, which was published by Messrs. F. & Co. last autumn, appeared also in the *Illustration Horticole* of November—December.

Among the great number of Gardening Papers which have described the plant they only refer to the following :—

1874. *Gardeners' Chronicle*, page 552 (botanical description of Prof. Alph. De Candolle).
1875. *Gardeners' Chronicle*, pages 179, 295, 750
1875. *Illustration Horticole*, November—December, pages 170, 171.
1876. *Revue Horticole*, No. 4, page 66.
1874. *Gartenflora* (Dr. Regel's), page 379.
1875. *Gartenflora* (Dr. Regel's), pages 147, 320, 341.

The tuberous-rooted Begonias require to be planted in April. The bulbs can be sent by sample post.

Price of good tubers, having well-flowered last year, 5s. each; by the dozen, 42s.

Trade Prices on application.

THE NEUMÜNSTER NURSERIES, ZURICH, SWITZERLAND.

For Sale.

CHOICE CUT FLOWERS—Gardenias, Roses, &c. Also CUCUMBER PLANTS.
G. WALKLING, College Park Nursery, Lewisham, S.E.

SUCCESSION "QUEEN" PINES.—To be disposed of, about Fifty succession plants of "Queen" Pines, thoroughly clean and well grown, the property of a Nobleman giving up growing Pines. Price very moderate. Apply in first place to Messrs. FRANCIS AND ARTHUR DICKSON AND SONS, The "Upton" Nurseries, Chester.

RHODODENDRONS.
2-yr. seedlings. | 4 to 8 inches, transplanted.
3-yr. seedlings. | 6 to 10 inches, transplanted.
8 to 12 inches, transplanted.
For Prices and Samples apply to
HENRY FARNSWORTH, Matlock Bank, Derbyshire.

To the Trade.

SEAKALE CROWNS, for planting, strong, 25s. per 1000; extra strong, 35s. per 1000.
HENRY PAGE, Walham Green, Fulham, S.W.

Phlox, herbaceous.

H. BLANDFORD has a large and splendid Collection of the above: extra strong plants in pots, 5s. per dozen, 35s. per 100. The usual discount to the Trade.
The Dorset Nurseries, Blandford.

Smith's Curly Potatos (True).

STUART AND MEIN, Kelso, N.B., have a quantity of the above to offer to the Trade. Fine sample.

Hardy Single Primroses.

L. T. DAVIS offers strong Plants, in great variety of colours (no common), at 12s. per 100. Carriage free to Belfast.
Ogle's Grove Nursery, Hillsborough, Co. Down.

Centaurea candidissima, or ragusina.
WHOLESALE PRICE.

WOOD AND INGRAM offer fine summer sown plants of the above, thoroughly established in thumb pots, at 20s. per 100; package, 3s. 6d. per 100, or 2s. for 50, not less than which will be sold at the price
The Nurseries, Huntingdon.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz, Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000; and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.
Wonersh Nursery, Guildford, Surrey.

To the Trade.—Seed Potatos

H. AND F. SHARPE are prepared to make Special Offers of SEED POTATOS grown on their own Farms from the finest selected stocks. Their List this season comprises all the English and American varieties worthy of cultivation. The prices will be found very moderate.
Seed-growing Establishment, Wisbech.

THE ROYAL NORFOLK SEED ESTABLISHMENT
ESTº 1844.

SNOWFLAKE POTATO.

Having imported and grown largely of this splendid new variety last season we are in a position to offer fine English-grown seed tubers at the following rates :—

	s.	d.
Per pound	0	6
Per peck of 14 lb.	6	0
Per bushel of 56 lb.	21	0

Cheaper by the sack or ton.

Orders of 21s. and upwards carriage free.

P. McKinlay, Esq., Beckenham, the well-known authority, writing of this Potato in the *Gardeners' Magazine*, Jan. 15 last, says :—"My experience with American varieties has been somewhat extensive, and I find that they generally improve as they become acclimatised. . . . I have no doubt Snowflake will improve in quality, and will become one of the best in cultivation."

Upwards of Fifty other Varieties in Stock.

BEAUTIFULLY ILLUSTRATED
Catalogue of Kitchen Garden and Flower Seeds, Gladioli, &c.
POST-FREE ON APPLICATION.

DANIELS BROS
Seed Growers
NORWICH.

ENCEPHALARTOS CAFFRA.—Two large specimens of the above, in fine health, for Sale, with stems from 7 to 9 feet high, and 2½ to 3 feet in circumference, with fourteen leaves each. They are considered to be from 1500 to 2000 years old. Price moderate. Apply to
Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

WM. POTTEN can still supply select GERANIUMS as advertised in *Gardeners' Chronicle*, March 4.
W. P.'s CATALOGUE for 1876 is now ready, and will be sent post-free to all applicants
Camden Nursery, Sissinghurst, Staplehurst, Kent.

Hardy Perennials Illustrated

THOS. S. WARE'S CATALOGUE of the above for 1876, including New, Rare, and Choice Alpines, Herbaceous Plants, Aquatics, Bog Plants, and a few Bulbs, is now ready, free on application.
Hale Farm Nurseries, Tottenham, London.

POLYANTHUS, choice mixed, 1s. 6d. per packet; also extra choice mixed (from fine laced flowers), 2s. 6d. per packet, post free. Flower Seeds of every description of the choicest quality.
JAMES DICKSON AND SONS, Seed Growers, 108, Eastgate Street, Chester.

GIANT ASPARAGUS PLANTS, the best that money can procure, all certain to grow, 2s. 6d. per 100. This delicious vegetable does not require half the expense usually incurred in planting it. See RICHARD SMITH'S SEED LIST for 1876.
Extra strong SEAKALE, 2s. per dozen.
RICHARD SMITH, Nurseryman, Worcester.

To the Trade.

PINUS AUSTRIACA, 2-yr. seedlings, 3s. 6d. per 1000.
ALDER, transplanted, 2½ to 3½ feet.
PEAR STOCKS, 2-yr. 1-yr., and 1-yr. 2-yr.
LITTLE AND BALLANTYNE, "Knowefield" Nurseries, Carlisle

Pelargontums, Pelargontums.

JAMES HOLDER'S unrivalled Collection—strong healthy Plants, Show, French, and Fancy varieties, at 35s. per 100, cash, Hamper and Packing included. Extra strong plants, in 48's and 32's, at 9s. and 12s. per dozen, Basket and Packing extra.
Crown Nursery, Reading.

Fruiting and Planting Vines.

THE COWAN PATENTS COMPANY (late Meredith) have still on hand a good selection of the above. Catalogues and prices on application. They can also offer good Fruiting and Succession PINES
The Vineyard, Garston, near Liverpool

Sow Now.

YOUNG'S NONSUCH PEA.—The most abundant and perpetual bearing of all Marrowfat Peas. Half-pint trial packets free per post for 1s. 6d., per quart, 5s., through all Seedsmen, or of
CHARLES YOUNG, Balham Hill Nursery, S.W.

PLANT NOW.
PORTUGAL LAURELS, 3 feet, 40s.; Common ditto, 4 to 5 feet, 30s.; Scarlet Flowering CHESTNUT, 10 to 12 feet, Standards, 60s.; BIOTA COMPACTA, 4 to 5 feet, 60s.; CUPRESSUS LAWSONI, 3 to 4 feet, 50s.; THUJA GIGANTEA, 4 feet, 60s.; HOLLY, 1½ foot, 20s.; YEWS, 1½ foot, 20s. per 100. All very fine.—J. JACKSON, Nursery, Kidderminster.

To be Sold, for the Sum of £10,
A FIRST-CLASS COLLECTION of SPECIMENS of BRITISH PLANTS, including ALGÆ and MOSSES, together with about 1200 species of EXOTIC FERNS, being the collection of the late Mr Henry Shepherd, Curator of the Liverpool Botanic Garden. Many of the Ferns were gathered in their native habitats by Botanists of world-wide reputation. The whole are named, neatly mounted on large sheets of paper, and arranged in fasciculæ of allied genera Mr Richardson, the present Curator of the Liverpool Botanic Garden, has kindly consented to satisfy any enquiries.
Apply to Mrs. HAYNES, 50, Dombey Street, Liverpool.

DAISIES, PANSIES, VIOLAS, &c., for Spring and Summer Bedding.
PANSY, Mrs. Felton, the best White Bedding, 3s. per dozen, 18s. per 100.
„ Cloth of Gold, the best Yellow, 2s. 6d. per doz., 16s. p. 100.
VIOLAS, in colours, 1s. 6d per dozen, 10s. per 100.
POLYANTHUS, fine seedling, 1s. per dozen, 6s. per 100.
PRIMROSES, 2s. per dozen, 15s. per 100.
DAISIES, Red, White or Pink, 1s. per dozen, 5s. per 100.
„ aucubæfolia, 2s. 6d per dozen, 16s per 100
AUBRIETIA PURPUREA, PHLOX FRONDOSA, ANTENNARIA TOMENTOSA, SWEET WILLIAM, IBERIS CORIIFOLIA, I. TENOREANA, BARBARA PRÆCOX fol. var., 1s. 6d. per dozen, 9s. per 100.
SEDUM GLAUCUM, S. acre aurea, 1s. per doz., 6s. per 100.
PANSIES, fine show sorts, in great variety, 3s. 6d. per dozen,
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

CHRYSANTHEMUMS.—Strong young plants of all the leading kinds, including Beverley, Golden Beverley, Mrs. Geo. Rundle, Mr. Geo Glenny, Empress of India, Jardin des Plantes, Prince and Princess of Wales, Guernsey Nugget, Hero of Stoke Newington, Marchioness of Lorne, Elaine, Fair Maid of Guernsey, Gloire de Toulouse, Emperor Nicholas, Oracle, The Sultan, Apollo, Chang, Bronze and Red Dragon, &c.
Purchaser's selection, 6s. per dozen; our own selection, 4s. per dozen.
T. JACKSON AND SON, The Nurseries, Kingston-on-Thames.

Mangel Wurzel.
BOLTON AND CO. beg to offer their fine stock of YELLOW GLOBE MANGEL WURZEL SEED.
Their large Champion Yellow Globe produces an immense weight per acre, and the Pedigree Mangel is the finest one grown, small top, fine clean skin, and single tap-root. Both of these superior Mangels give great satisfaction.
Moderate prices, on application.
BOLTON AND CO., Seed Merchants, Wood Green, London, N.

SURPLUS STOCK.
Offer to the Trade:—
ACACIA RICEANA, the most graceful and beautiful of all the Acacias, figured and described in the *Botanical Magazine* for May, 1870: nice plants.
GENTIANA ACAULIS, fine flowering tufts.
ACER PLATANOIDES, 3-yr. seedling.
CURRANTS, Black, strong.
„ Red, strong.
ENGLISH OAK, transplanted, 3 to 4 feet.
MAPLE, Norway, fine selected, 10 feet.
PINUS MARITIMA, 2-yr. seedling.
PICEA NORDMANNIANA, fine, 15 to 18 inches.
SPRUCE, 3-yr. seedling.
„ 18 to 24 inches, fine, twice transplanted.
Prices on application.
STUART AND MEIN, Nurserymen, Kelso.

Seed Potatos.
JAS. BACKHOUSE AND SON, York, have to offer:—
VEITCH'S IMPROVED ASHLEAF KIDNEY, an excellent early Potato, a good cropper, and of fine quality, 2s. 6d per stone, 16s. per cwt. [cwt.
SUTTON'S BERKSHIRE KIDNEY, 2s. per stone, 12s. per
HAIGH'S or LAPSTONE KIDNEY, 2s. per stone, 12s. per cwt.
EARLY SANDRINGHAM KIDNEY, an excellent early Kidney, robust grower, 2s. per stone, 12s. per cwt.
The above are true to name, sound, and fine for sets. Sacks free for cash with order.

CHRISTMAS QUINCEY, POTATO MERCHANT, Peterborough, has to offer the following:—

	Per lb.	Per st. of 14 lb.	Per bag of 56 lb.	Per cwt.	Per sack of 16 st.
	s. d.	s. d.	s. d.	s. d.	s. d.
Alpha	1 3	16 0	—	—	—
Snowflake (imported)	0 5	5 0	17 0	32 0	56 0
Eureka	—	4 0	15 0	25 0	40 0
Thornton's Early Paragon	6	6 0	—	—	—
Oneida	0 6	6 0	—	—	—
Extra Early Vermont	1 6	5 6	10 6	20 0	
Browneli's Beauty	2 0	6 6	14 0	20 0	
Compton's Surprise	1 6	5 6	10 6	20 0	
Nonsuch	1 6	5 6	10 6	20 0	
Bresee's Prolific	1 4	5 0	9 0	16 0	
Bresee's Early Gem	1 6	6 0	11 0	20 0	
Climax	1 4	5 0	9 0	16 0	
Early Rose	1 4	5 0	9 0	16 0	
Late Rose	1 9	6 6	12 0	22 0	
Early Goodrich	1 4	5 0	9 0	16 0	
Acme	1 9	6 6	12 0	22 0	
Mona's Pride Ashtop	1 9	6 6	12 0	22 0	
Myatt's Prolific	1 4	5 0	9 0	16 0	
Ashtops	1 6	5 6	10 6	20 0	
Lapstone Kidney	1 4	5 0	9 0	16 0	
Cattel's Advancer	1 6	5 6	—	—	
Cattel's Alliance	1 6	5 6	—	—	
Cattel's Eclipse	1 6	5 6	—	—	
Early Fortytolds	1 6	5 6	10 0	18 0	
Paterson's Victoria	1 6	5 6	10 0	18 0	
Red-skinned Flourball	1 4	5 0	9 0	16 0	
Hundredfold Fluke	1 4	5 0	9 0	16 0	
Bresee's Peerless	1 4	5 0	9 0	16 0	
Regents	1 2	4 6	8 0	15 0	

Per ton on application. Peck bags, 4d.; 2-peck bags, 6d.; bushel, 7d.; two bushels, 9d.; sacks, 1s. 3d. Remittances to accompany all orders.

CALCEOLARIA AUREA FLORIBUNDA and GOLDEN GEM, autumn-struck, clean, healthy, and vigorous, 5s. per 100, 40s. per 1000.
VESUVIUS GERANIUM, autumn-struck, 10s. per 100. Beautiful stuff
Package free "cash." Post-office Order on Chester.
FIELD BROTHERS, Tarvin Road Nursery, Chester.

TO PLANTERS.
The Subscribers beg to offer:—
BEECH, transplanted, 18 to 24 and 24 to 36 inches.
LARCH, 1-yr., 1-yr. transplanted, 8 to 15 inches.
APPLE STOCKS, 1-yr. and 2-yr. seedlings.
PEAR STOCKS, 2-yr. seedlings.
Sample thousands and prices on application to
JAMES COCKER AND SONS, Sunny Park Nurseries, Aberdeen.

Just Arrived.
PIPING BULLFINCHES, FOREIGN AVIARY BIRDS, and CAGES of every description; AQUARIUMS and FERN CASES, and every requisite for filling them. Many thousands of FERNS, PALMS, ORCHIDS, ORNAMENTAL TREES, CLIMBERS, and SHRUBS, in pots, at from 6d to £10 10s. each; at
GREEN'S Bedford Conservatories, Covent Garden Market, W.C. (N.B. Up the steps).

Trade Notice.
SYMPHYTUM ASPERRIMUM (true stock) is supplied to the Trade, together with Circulars, on very advantageous terms. It is especially adapted for heavy clay lands and deep sands, where hardly any other crop can be produced.
THOMAS CHRISTY AND CO., 155, Fenchurch Street, London, E.C.

Australian Plants and Seeds.
EUCALYPTUS GLOBULUS, PALMS, CYCADS, FERNS, and all kinds of PLANTS and SEEDS indigenous to Australia, Fiji, &c., supplied on the most reasonable terms. Priced CATALOGUES and Special Quotations on application.
SHEPHERD AND CO., Nurserymen and Seedsmen, Darling Nursery, Sydney, New South Wales. (Established 1827)
Agents: Messrs. C. J. BLACKITH AND CO., Cox's Quay, Lower Thames Street, London, E.C.

Cheap Bedding Geraniums.
ALFRED FRYER offers the following good Bedders at per dozen, for cash:—Golden Tricolors: Prince of Wales, 6s. 6d; Jock o' Hazeldean, 4s. 6d.; Mrs. Pollock, 3s. 6d. Sir Robert Napier, 3s. 6d.; Sophie Dumaresque, 3s. 6d. Silver Tricolors: Lass o' Gowrie, 6s. 6d.; Miss Burdett Coutts, 3s. 6d.; Mrs. John Clutton, 3s. 6d. Gold and Bronze: Beauty of Calderdale, 3s. 6d.; Roi de Siam, 3s. 6d. Ivy-leaf: L'Elegante, 3s. 6d.; Dolly Varden, 3s. 6d.; or one of each for 5s. All post or package free. For Priced Lists address ALFRED FRYER, The Nurseries, Chatteris, Cambridgeshire.

TO THE TRADE ONLY.
RASPBERRIES, Red Antwerp, strong, 30s. per 1000.
„ Yellow October, strong, 60s. per 1000.
POPLARS, Black Italian, 6 feet, good, 70s. per 1000.
ANEMONE PULSATILLA, 20s. per 100.
SYCAMORE, 5 feet, good, 50s. per 1000.
AURICULAS, Seedlings, of sorts, 20s. per 100.
YUCCA VARIEGATA, 30s., 42s., and 84s. per dozen.
CHAMÆROPS FORTUNEI, 24s. to 60s. per dozen.
ARALIA SIEBOLDII, 12s. to 30s. per dozen.
ADIANTUM CUNEATUM, extra, 21s per dozen.
WILLIAM RUSHFORTH, Woodhouse Hill Nurseries, Leeds.

TO POTATO PLANTERS.
CHANGE OF SEED.
JAMES CARTER & CO.
ARE PREPARED TO SUPPLY THE FOLLOWING POPULAR AND CHOICE VARIETIES AT GREATLY REDUCED RATES PER HALF-TON OR TON.

English Varieties.

	Per bushel—s. d.
Carter's Main Crop	12 0
Carter's Champion	17 0
Rivers' Royal Ashleaf	14 0
Myatt's Ashleaf	12 0
Walker's Regent	9 6
Paterson's Victoria	10 6
Hundredfold Fluke	14 0
King of Potatos	12 0

American Varieties.

	Per bushel—s. d.
Early Rose	10 6
Late Rose	14 0
Vermont Beauty	12 6
Compton's Surprise	12 6
Peachblow	14 0
Bresee's Prolific	12 0
Bresee's Peerless	12 0
Breadfruit	21 0
Early Goodrich	10 6
Extra Early Vermont	12 6
Climax	12 0

Price, 10s. 6d. per bushel.
HALF TON AND TON PRICES ON APPLICATION.
CARTER'S (The Queen's Seedsmen), 237 and 238, HIGH HOLBORN, LONDON, W.

TO THE TRADE.—SEED POTATOS.
H. & F. SHARPE
HAVE STILL TO OFFER
THE FOLLOWING VARIETIES OF SEED POTATOS,
Grown from the finest selected stocks, and free from disease.

RIVERS' ROYAL ASHLEAF KIDNEY,
ALMA KIDNEY,
NEW KING of the FLUKES,
HUNDREDFOLD FLUKE,
EARLY DALMAHOY,
AMERICAN EARLY ROSE,
CLIMAX (very prolific),
BROWNELL'S BEAUTY,
EXTRA EARLY VERMONT,
BRESEE'S KING of the EARLIES,
WALKER'S IMPROVED REGENT,
ALPHA,
MYATT'S PROLIFIC KIDNEY,
FLUKE KIDNEY (old variety),
MODEL (very handsome variety),
DRUMMOND'S EARLY PROLIFIC,
RED-SKIN FLOURBALL,
VERMONT BEAUTY,
COMPTON'S SURPRISE,
EARLY GOODRICH,
AMERICAN WONDER,
PATERSON'S VICTORIA,
YORKSHIRE REGENT,
SNOWFLAKE and EUREKA.

SEED GROWING ESTABLISHMENT, WISBECH.

NOW READY,
NURSERY CATALOGUES FOR 1875-76.
WILL BE SENT POST FREE UPON APPLICATION.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),
EDINBURGH,
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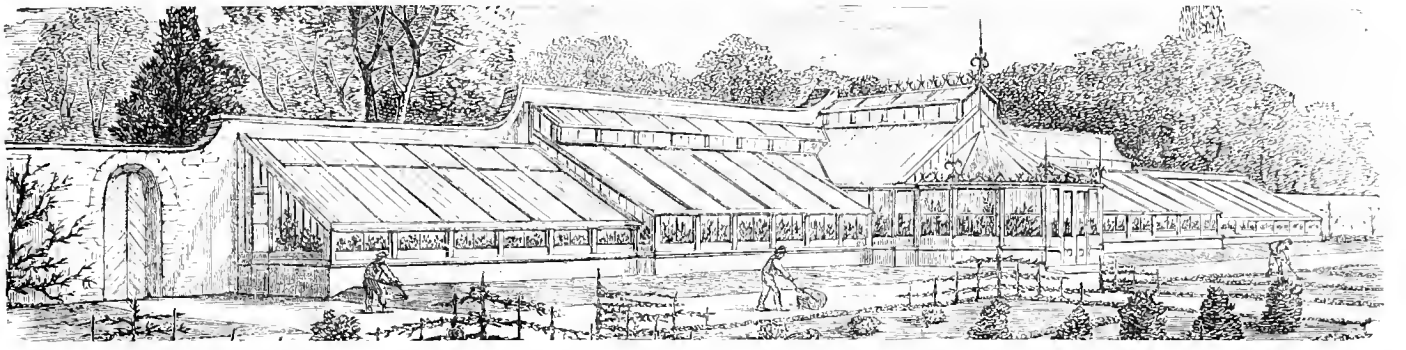
54, BISHOPSGATE STREET WITHIN, LONDON, E.C.
BUSINESS ESTABLISHED, 1770.

HORTICULTURAL BUILDINGS.—SEASON 1876.



IMPORTANT NOTICE.

WEEKS'S IMPROVED FOUNDATIONS.

The GREAT SUCCESS that has attended our introduction of CAST IRON and SLATE FOUNDATIONS to Peach Wall Coverings has induced us to extend their application, in an improved form, to every description of Horticultural Building. The following are among the many advantages which this invention offers:—Great economy in cost and labour; great utilisation of space; great adaptability, with strength and durability equal to Brickwork and Masonry; while houses so constructed are at once *Tenant's Fixtures.*

PLANS AND ESTIMATES.

J. WEEKS & CO.,

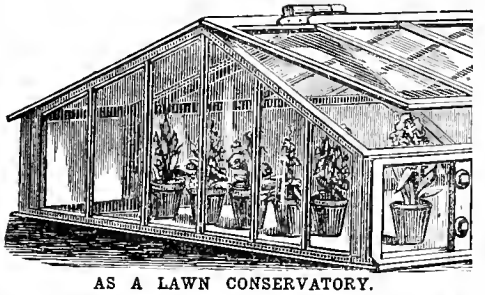
HORTICULTURAL BUILDERS, HOT-WATER APPARATUS MANUFACTURERS and PATENTEES,

KING'S ROAD, CHELSEA, LONDON, S.W.

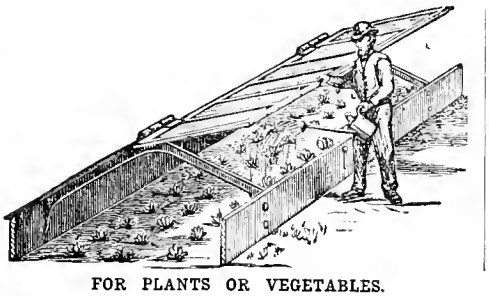
BOULTON & PAUL (LATE W. S. BOULTON & CO.), NORWICH,

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MAKERS.

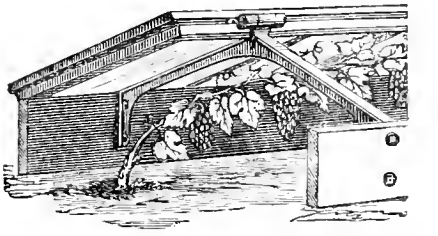
Now Ready, our ILLUSTRATED CATALOGUE for 1876 of HORTICULTURAL BUILDINGS, containing upwards of 60 Engravings with Prices of Conservatories, Greenhouses, Peach Houses, Forcing Houses, &c., Free by Post for 12 stamps.



AS A LAWN CONSERVATORY.



FOR PLANTS OR VEGETABLES.



AS A VINERY.

The Judges at the Royal Horticultural Society's Great Meeting lately held at Birmingham, pronounced these Patent Plant Preservers and Ground Vineries to be by far the best and most useful articles of the kind they ever saw, and awarded them the ONLY PRIZE.

Instead of having to remove or slide loose glass every time it is necessary to attend to the plants, we attach the glazed lights (21-oz.) with hinges to the frame of each light, thereby doing away with continual breakage of glass and loss of time. Two men can instantly remove a complete length, 12 ft. by 4 ft. wide; thus proving them to be really portable. They are made in the following sizes. One pair of ends is sufficient for any number of lengths, if set in a continuous row.

Cash Prices carriage paid to any Station in England on Orders amounting to 40s. and upwards.

	Price.	Ends per pair extra.
6 feet long by 2 feet wide	£1 5 0	5s. 0d.
12 feet long by 2 feet wide	2 10 0	5s. 0d.
6 feet long by 3 feet wide	1 15 0	7s. 0d.
12 feet long by 3 feet wide	3 5 0	7s. 0d.
6 feet long by 4 feet wide	£2 6 0	8s. 6d.
12 feet long by 4 feet wide	4 4 0	8s. 6d.
12 feet long by 5 feet wide	5 10 0	10s. 6d.
12 feet long by 6 feet wide	7 0 0	12s. 0d.

Lawn Conservatories, with Glass sides and ends, 12 feet long by 4 feet wide, £7 5s.; 12 feet long by 5 feet wide, £8 15s.; 12 feet long by 6 feet wide, £10.

PATENT UNIVERSAL PLANT PRESERVERS, Large Sizes to Build on Brick Walls, for use as Span-roof Pits, suitable for Forcing, Propagating, Growing Cucumbers, Melons, and a variety of other things too numerous to mention. Write for New Illustrated List post free.

OPINIONS OF THE PRESS.

"The uses to which such frames can be put are fully recognised by practical gardeners, and if any notice can be taken of the great demand arising for such contrivances amongst amateurs, it would appear that they too are not ignorant of their great value."—*Gardeners' Chronicle.*

"The Ground Vinery which has the greatest advantages is unquestionably that manufactured by W. S. Boulton & Co."—*Floral World.*

"Considering their substantial character, portability, and the many ways in which they may be employed, we anticipate a very large demand when they become generally known."—*Gardeners' Magazine.*

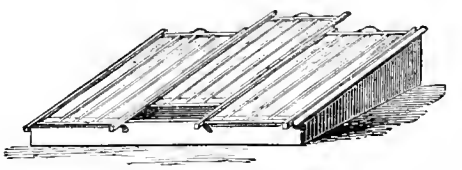
"Every convenience is provided to save time in cases of removal, planting, watering, and giving air. The glass is firmly fixed and puttied—an essential point. They are complete and ready for use the moment they are received, &c."—*The Garden.*

MELON OR CUCUMBER FRAMES.

All sizes (glazed with 21-oz.) ready for immediate delivery.

Height at back, 24 inches; at front, 13 inches; sides, 1¼ inch thick; lights, 2 inches thick. All made of very best red deal. Painted three coats. Every pane of glass is nailed as well as puttied in. Each light is provided with an iron strengthening rod and handle.

Glazed with 21-ounce.



Cash Prices, carriage paid to any station in England when orders amount to 60s. and upwards.

4 feet long by 6 feet wide, 1 light	£1 17 6
8 feet long by 6 feet wide, 2 lights	3 5 0
12 feet long by 6 feet wide, 3 lights	4 17 6
16 feet long by 6 feet wide, 4 lights	6 7 6
20 feet long by 6 feet wide, 5 lights	7 17 6
24 feet long by 6 feet wide, 6 lights	9 7 6

One half allowed for Packing Materials when returned free to our Works. Cash or reference respectfully requested with transmission of all first orders.

THE BEST AND MOST COMPLETE
HEATING APPARATUS EVER INVENTED
IS
ORMSON'S PATENT
DIVISIONAL HOT-WATER APPARATUS.

It gives the Gardener that which has long been wanted, but which he has never before had—complete control over the temperature of his Hothouses, and this in spite of whatever acts of carelessness the stoker may commit. So complete and efficient is this Apparatus that the gardener can throw out or bring into action in a moment, one-fourth, one-half, two-thirds, or the whole of the Pipes, according to the number of Pipes in the Hothouse and the state of the external temperature, never using more heated Pipes than the state of the weather requires, the remainder remaining perfectly cold; and yet in the event of a cold night-temperature coming on, the gardener can instantly bring additional Pipes into action, and by this means at once increase his temperature to whatever degree he may require.

It will be easily understood from the foregoing explanation that no Hot-water Apparatus has ever yet been invented so eminently calculated for Economising Fuel, as only just sufficient water for giving the desired temperature has to be heated, all the rest being quite cold, and requiring NO FUEL to heat it.

This Apparatus is fixed in several Hothouses on my premises, and may be seen in action in combination with my Patent Tubular Cornish Boiler at any time by giving a day or two's notice.

This System can be applied to Apparatus already fixed.

The favour of a call and inspection is particularly requested.

HORTICULTURAL BUILDINGS.

Plans and Estimates for Horticultural Buildings of every Description, either in Wood or Iron, to suit any Garden, Large or Small,

Designed and Constructed with strict regard to Economy of Price, Good Workmanship, Durability of Material, and Practical Adaptation to their various Purposes.

HENRY ORMSON,
HORTICULTURAL BUILDER and HOT-WATER APPARATUS ENGINEER,
STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

Sutton & Sons

CHOICE FLOWER SEEDS,

FREE BY POST OR RAIL.

Sutton's Collections of Choice Flower Seeds, to produce a beautiful and continuous display during Summer and Autumn.

No. 1 Collection, Free by Post or Rail	..	£2	2	0
No. 2 Collection	,, ,, ...	1	11	6
No. 3 Collection	,, ,, ...	1	1	0
No. 4 Collection	,, ,, ...	0	15	0
No. 5 Collection	,, ,, ...	0	10	6

Small and Useful Collections can also be had, from 2s. 6d. to 7s 6d. Free by Post.

Complete Instructions as to the Cultivation of Sutton's Choice Flower Seeds will be found in

"SUTTON'S AMATEUR'S GUIDE,"

The most practical work on gardening yet published, beautifully illustrated with 300 engravings.

Price 1s., post-free for 14 stamps. Gratis to Customers.

TO OBTAIN THE

Best Garden Lawns and Croquet Grounds

SOW

SUTTON'S LAWN GRASS MIXTURE,

Which forms a close velvety turf in a very short time. For making New Lawns or Croquet Grounds 3 bushels or 60 pounds is required per acre, or 1 gallon to every 6 rods (or perches) of ground.

For improving those already in turf, 20 pounds should be sown per acre.

March, April, and May are the best months for sowing.

Price 1s. per lb.; 20s. per bushel.

From Mr. J. Merrick, *Gardener to* S. Forster, Esq., *Le Court.*

"The Seed you sent me last year turned out uncommonly well. Several gentlemen who came to Le Court could scarcely credit, from the appearance of the lawn, that it was only sown in May. In August it was as fine and thick as I have seen some lawns that had been laid down for three years."

Instructions on the Formation and Improvement of Garden Lawns and Croquet Grounds Gratis and post-free.

THE QUEEN'S SEEDSMEN, READING.

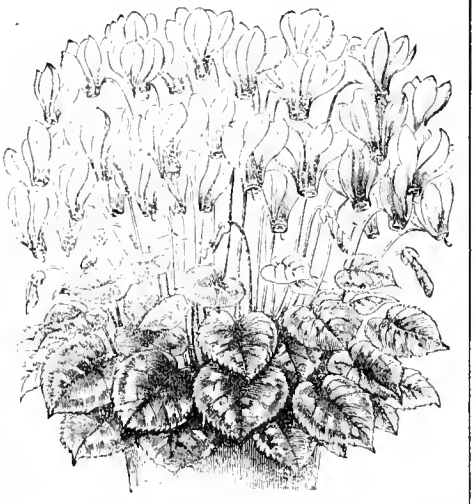
B. S. WILLIAMS'

CHOICE

FLOWER AND VEGETABLE

Seeds for 1876.

	Per Packet.—s.	d.
BEANS, Williams' Early Prolific Dwarf French, in sealed half-pints	1	6
BRUSSELS SPROUTS, Welch's Giant, one of the finest in cultivation	1	0
CUCUMBER, Osmaston Manor (new), one of the Finest Varieties, either for Summer or Winter use; 26 to 32 inches long, very prolific	2	6
MELON, Osmaston Manor Hybrid (new), a splendid Green-fleshed Variety, beautifully netted, globular in form, and of delicious flavour	2	6
ONION, Williams' Magnum Bonum, the heaviest cropping and longest keeping Onion in cultivation ..	1	6



CYCLAMEN PERSICUM.

CHOICE FLOWER SEEDS.

	Per Packet.—s.	d.
AURICULA, saved from the finest show varieties ..	1	6
BALSAM, Williams' Superb Strain.. .. 2s. 6d. and	1	6
BEGONIA FROEBELII (new).—This is a new and distinct species	2	6
,, SEDENI SEMI-PLENA, a new semi-double flowering variety	2	6
CYCLAMEN PERSICUM, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
CELOSIA PYRAMIDALIS PLUMOSA	1	6
CALCEOLARIA, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
CINERARIA, Weatherill's Extra Choice Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
COCKSCOMB, Glasgow Prize; combs of this splendid strain measure from 33 to 36 inches from tip to tip	2	6
GLOXINIA, Finest Drooping Varieties	1	6
,, Finest Erect Varieties	1	6
PRIMULA, Williams' Superb Strain, Red, White, or Mixed .. .. .. 5s., 3s. 6d., 2s. 6d., and	1	6
PYRETHRUM GOLDEN GEM..	1	0
STOCK, Williams' Improved Giant Scarlet Brompton ..	1	6
,, East Lothian, an assortment of 3 colours	2	6
,, Virginian, New Crimson, a distinct variety; the flowers are large and of a bright crimson colour, the habit is dwarf, robust and branching ..	1	0
WALLFLOWER, Harbinger, Autumn and Winter Flowering	1	0

ILLUSTRATED SEED CATALOGUE

Gratis and post-free on application.

Packets of Flower Seeds, excepting heavy kinds, Free by Post.

VICTORIA AND PARADISE NURSERIES,
Upper Holloway, London, N.

SATURDAY, APRIL 1, 1876.

THE POMEGRANATE.

THE history of the Pomegranate reaches almost as far back as that of the Olive, the Vine, and the Fig. It comes to the front in ancient literature as one of those delightful orientals which at all points touch the primæval life of man. If the purpose it served in regard to food was less important than that of some of the other fruits, the associations are quite as varied and picturesque as those held by any one of them. The citations in Scripture suffice of themselves to render this famous tree interesting to most people.

The places of the aboriginal growth of the Pomegranate appear to be North-West India, and the countries south and south-west of the Caspian, away to the borders of the Persian Gulf and the Indian Ocean. At a very early period it undoubtedly made its way westwards, accompanying civilisation, and becoming established in the Greek Archipelago, and in Northern Africa, to the coasts of which it would be carried by the Phœnicians, probably eight or nine centuries B.C. At the present day, according to Boissier, in the *Flora Orientalis*, it occurs in Macedonia, Thrace, on the eastern shores of the Euxine, and in the trans-Caucasian provinces, Kurdistan, &c., often growing in the fissures of rocks upon limestone mountains. That it was a familiar and valued plant in the earliest of the historic times is proved by the representation of the flowers and fruit in the sculptures of Persepolis and Assyria,* and upon the monuments of ancient Egypt†. Pomegranate trees hung with fruit also appear in the drawings of Thebes, conventionalised, of course, but unmistakable. Besides this, there is plenty of written testimony as to the estimation in which the fruit was held, and respecting the uses to which it was specially applied, sacred and symbolical, as well as economic. Italy probably received the Pomegranate through the medium of the original Greek colonists. Porcius Cato, in the third century B.C., names it as a common fruit tree in that country. Eventually it became established in Spain, thriving particularly in the renowned and beautiful kingdom of ancient Grenada, which is believed to have received its name from the abundance of its Pomegranate trees, just as many villages in ancient Palestine received theirs from the Hebrew name of the tree—Rimmon. Hadad-rimmon, literally the garden of Pomegranates, was a town or village in the valley of Jezreel (Zech. xii. 11). Elsewhere we read of a Rimmon, with her suburbs, and of a Rimmon south of Jerusalem.‡ Topographical names of this character—founded, that is, upon the predominant vegetable feature of the neighbourhood—constitute a remarkably interesting class: they have yet to be brought together, and explained as they deserve. We need not go out of England for plenty of examples.

All subtropical countries, in both hemispheres, are now possessed of the Pomegranate, and wherever it occurs, when in flower and fruit, it is one of the most striking ornaments of the soil. Brought to England,

* Layard, *Nineveh and its Remains*, ii. 296; ed. 2, 1849.
† Wilkinson, *Ancient Egyptians*, ii 142; 1837.
‡ See Joshua xv., 32; 1 Chron. iv. 32 and vi 77; Zechariah, xiv. 10.

according to Loudon, in 1548, it is frequently met with in good old gardens, planted against the wall in sheltered corners, and enduring the winter without protection, but seldom blooming, except in the extreme South, and where fortunately circumstanced as to artificial warmth from behind, when it ripens fruit in abundance and every season. Such is the case with a fine old Pomegranate at Clevedon Court, Somersetshire, which being trained against the front wall of the mansion, in the immediate neighbourhood of broad old-fashioned chimneys, leads a life, for England, of comfort quite unusual, and lets the owner know it.

When growing as a standard, or after its natural manner, the Pomegranate is usually of inconsiderable stature, more of a great bush than a tree, in some degree comparable to a Hawthorn, though sometimes attaining the height of 18 or 20, or even 30 feet. Trained against a house-front, as at Clevedon Court, it will rise considerably higher, probably 50 to 60 feet. It is very branchy and very twiggy, and seldom found with a clear or pillar-like stem, unless the lower shoots have been pruned away. When thrown, artificially, into the shape of a standard Rose, the round head forming a kind of canopy, it becomes a very beautiful object. In the olden times Pomegranates must sometimes have attained really noble dimensions, perhaps under cultural treatment such as that last alluded to, since it was under a Pomegranate that Saul "tarried" when marching against the Philistines, at the time of the beginning of his transgressions (1 Sam. xiv. ii.). In the wild state it is very spinous, but, as very commonly happens with ligneous plants, the spines disappear, or nearly so, under cultivation. The abundant leaves are lanceolate, 1 or 2 inches in length, entire, and of a fresh bright green, which in autumn, before they fall, gives place to pink and deep amber. The superb flowers are produced at the extremities of the young and leafy shoots. Individually they consist of a deep scarlet calycine tube or ovary case, an inch in length, with at the summit five great pointed and fleshy lobes, between which are seated five petals of the most brilliant crimson-rose colour, a crowd of crimson stamens projecting from the centre. No wonder that the young Hebrew ladies in the time of the patriarchs employed the opening flower-buds as ear-drops. The Fuchsia-like figure, magnificent hue, and long-enduring substance, would give them, as an ornament received from pure Nature, absolute queenliness. The Snowdrop is the *beau ideal* of the chaste and maidenly as a feminine ornament for the ears; the Pomegranate flower is the *beau ideal* of the rich and massive, comporting peculiarly well with raven tresses. The nearest approach to the colour of the petals among plants better known is found in the common Corn Poppy, Papaver Rhœas, the specific name of which gay weed is based upon the ancient Greek one of the Pomegranate, ῥοα, the appellation it bears in Homer, who always seems glad of an opportunity of mentioning the tree and its produce. How charming is the picture of the gardens of Alcinous, which contained, he tells us, Apples, Pears, Figs, Olives, and ῥοιαι (*Od.* vii. 114—120). Theophrastus and Dioscorides speak of the Pomegranate under the same name as that one employed in the *Odyssey*. It appears to have been included also in the somewhat vague ῥοδον, which, though ordinarily translated "Rose," almost certainly included not only the Pomegranate flower but many other blossoms of refulgent redness, and very decidedly the Oleander, the Rose of the Apocrypha. Directly connected with the Latin names of the Pomegranate, Malum punicum and Pomum punicum, literally the Carthaginian Apple, and energetically referring us to the beautiful hue of the flower, is puniceus—the term employed by the Romans to denote other objects of similar colour. Ovid compares the blood-red blossom of the Anemone, as it lifted itself from the remains of the unfortunate Adonis, to the blossom of the "Punic Apple."* Virgil applies puniceus to a bed or bank of Roses;† and, in a beautiful passage at the end of the *Æneid*, to the crimson bars that herald the rising sun when "jocund day stands smiling on the misty mountain-tops."‡ When the flower becomes double, to which change it is prone, the colour is in no degree impaired. In Eastern countries this condition appears to be quite as well known as in Europe. Rauwolf speaks of it with a throb of delight. The ancient Greeks are thought to have intended it in their βαλαύστιον. The Arabs call it Gulnare, which again takes us to the collective sense of "Rose," *gul* being the Arabic synonym of ῥοδον, and Gulnare in turn is a favourite feminine name, after the manner of "Rose" in Europe, as in Fair Rosamond and Rosa Bonheur. One cannot but remember the comparison in the vivid love song of the Hebrew monarch, "Thy temples (cheeks?) are like a piece of Pomegranate between the locks."§ Though crimson is the normal colour, there are varieties with white petals and a yellowish calyx-tube, double white flowers, and yellow flowers.

The ovary, when ripened, becomes somewhat globose in form, ruddy and tawny, or deep golden, tinged with red, 3 to 5 inches in diameter, and acquires peculiar elegance from the possession of a crown, constituted of the five persistent calyx-lobes. In many of the fruits these lobes are at first convergent, bent down over the eye, and almost flattened; gradually they rise and become erect. The tough and leathery rind encloses an immense quantity of seeds resembling Wheat grains, embedded each in a little transparent bag of rosy-coloured juice. The cells containing the seeds are built together in a manner so remarkable that, botanically, the Pomegranate is unique. There are two rows of carpels, one placed above the other, the lower row consisting of three or four, and the upper one of from five to ten. Taken in connection with the other features of the plant, this curious structure has helped to perplex the men of science as to what natural order the Pomegranate should be referred to. Many authors have placed it in the Myrtaceæ; many others consider it the type of a distinct order, which they call Granateæ. Hooker and Bentham regard it as an anomalous member of the Lythraceæ. *Leo Grindon, Manchester.*

(*To be continued.*)

* *Met.* x. 737. † *Ecl.* v. 17. ‡ Lib. xii. 77, 78. § Song of Solomon, iv. 3, and vi. 7.

CULTURE OF SARRACENIAS.

THE condition Sarracenias are generally seen in fully demonstrates the effects of the mistaken advice that has been too often given as to their requirements. Many who have written on their culture have recommended S. purpurea to be grown in a cold frame, and S. Drummondii to be kept as hot as if it had been a native of Burmah; or to stand them continually in pans of water, or to syringe them indiscriminately overhead. That they will merely exist under such treatment is no evidence that they like it, but simply that they are tenacious of life. When badly grown they are insignificant in the extreme, but when well managed there are no more interesting or singular plants in existence, attaining proportions such as never seen in their native countries.

All the species will do well under the same treatment as to heat, soil, moisture and air. They should be kept from the middle of November to the end of February in a night temperature of 50°, with a rise of 5° in the day; after this, raise the heat 5° day and night, and through the spring and summer let it be from 60° to 70° in the night, and from 75° to 85° in the day, according to the weather.

The soil should consist of the fibrous portion of good peat—all the earthy matter being sifted out—and chopped sphagnum in equal parts; to this add one-fifth fine broken crocks and sand, in equal parts, mixing the whole well together. Every year, about the middle of February, not later, whether they appear to want it or not, the whole of the soil must be gently shaken from them, repotting them in new. If moved later than this their roots are in motion, and it often causes the pitchers to come crippled, or, in the case of the tall growers, not to pitcher at all.

All the species should be potted at this time except the two varieties of Drummondi, S. Drummondi alba and S. Drummondi rubra; these are best shifted about July after the spring growth is quite completed, and before the starting of the autumn growth which these two kinds make, and at which season they produce their principal lot of pitchers, though when strong they will make almost as many in the spring. Fill the pots one-third with crocks: in potting keep the creeping rhizome-like stems just above the soil. Every flower-stem they throw up divides the crown in two; in this way they increase, but they should not be severed until they have got to a considerable size, as a small bit remains small for a long time. From the time the plants commence growing up to autumn water them freely every day, and twice a week in winter. Never syringe overhead, except in the case of S. purpurea, as it makes them soft. Never stand them in pans, as it is liable to rot their roots. Put them as close as they can be got to the upright glass on the south side of the house, or else elevated until they all but touch the roof on the sunny side; let them be in a moist corner, and do not admit air very near them, but they like a fair amount in the house to keep the growth sturdy. They must not stand on open trelliswork that will let the air rush up amongst them, but should have a broad shelf of close-jointed unplaned boards that will hold moisture, and which should be wet two or three times a-day when the plants are growing. Use a very thin shade when the sun is upon them. Nip out all the flowers as soon as they appear, or they will weaken the plants.

The plants are very subject to scale, which must be diligently sought for, or it will do serious injury; as also green-fly, and if there is a thrip in the house it will find them, getting under the rim of the mouth. These must have no quarter, as, if not exterminated quickly, they will destroy the pitchers before they have lasted half their time. The largest form of S. flava, of which I never saw any but the plant I grew when with Mr. Micholls, and some half-dozen bits that were taken from it, is far the finest, and totally different from the others, being almost deciduous, dying down in the winter, except a few short leaves about 9 or 10 inches long that do not pitcher. All the species are a good many years before they acquire their full strength from small plants. *T. Baines.* [For a descriptive list of the species, see our volume for 1866, p. 1138. EDS.]

LONG TOMS.

SOMERSET is rich in local cognomens, and probably the above designation, which Mr. Matthews has given to certain of his pottery manufactures, is but a local product and peculiar to the famous town of Weston-super-Mare. To the uninitiated it may be necessary to explain that Long Toms are neither more nor less than small flower-pots, and constitute a special make of the popular potter above named, and as the title is more expressive than explanatory it may be useful to say a little respecting them.

In the manufacture of Long Toms it has been Mr. Matthews' object to offer to all who grow small plants in large bulk a much more useful and convenient form of pot than has hitherto been in common use. The material is harder, purer, and altogether more durable; the weight is considerably less, as owing to the superior quality of the clay, the walls of the pot are of much thinner construction. They are very evenly moulded, so much so as to present a striking contrast to ordinary stocks; and, not least, they have greater depth and less width at top, and from this circumstance arises the peculiar designation of Long Toms. This particular make is limited to some half-dozen sizes, numbered respectively from one up to six, the first size being literally thumbs, and increasing up to the largest, which nearly correspond with the well-known 48's. To all who use small pots for trade purposes or for the storing of large quantities of young plants of all kinds during the winter and spring months, the sizes numbering 3, 4, and 5

respectively are of the greatest value, just suiting all classes of bedding stuff, alpine and other hardy plants, and especially useful for small plants sent out in the execution of orders.

One great charm of these Long Toms is the absence of the useless and space-wasting rim, and packers of plants know well how difficult it is to work in a lot of rim-pots to the best advantage; the squat shape and projecting rim are in a number of plants when packed so many elements of weakness, both of which are avoided in the Long Toms, as these are not only remarkable for evenness of size, but also for their comparatively upright form, which thus admits either in standing or packed to waste but the smallest possible amount of space. No. 5 Long Tom corresponds in internal space with our old-fashioned large 60's, a size that is perhaps more largely used than any other. Where plants, and especially bedding stuff, are well done, it is well known that a large 60 will grow a plant fit to turn out at the end of May in robust condition and ready to make a display at once. Gardeners recognise this fact, and, remembering the fickleness of our climate, prefer to turn out good robust stuff in preference to that which is only half-developed in smaller pots; thus it is that large 60's are so much used.

In comparing the Long Toms with the old 60's, I am struck with the difference of space required by the former, and how much in their favour. If a No. 5 Long Tom be inverted into a large 60 it will be found to come well within the mouth of the latter. This is not much for a single pot, but it is found that nine Long Toms can stand in the same space that eight large 60's require, and, to extend the comparison, it is found that in a space 70 feet in length and 5 feet 8 inches in width just 400 more pots can be stood, and in a large house this might be increased up to 1000. Added to this, all these new-shaped pots are so even in height and diameter, that in appearance of the house alone their use is a great gain.

Mr. Matthews has broken away from the conservatism of "casts," and has substituted numbers, selling by hundreds or thousands, as the case may be. His prices are reasonable, packing is of the most careful kind, and railway transit is not costly; and because of these facts not only Long Toms, but his large sizes also, are now found in nurseries and private establishments all over the kingdom. *A Grower.*

THE PHLOX.

This is an extensive genus of exceedingly ornamental plants, belonging to the natural order Polemoniaceæ, and a majority of whose species are indigenous to North America. The kinds generally cultivated in this country may perhaps be divided into three sections, viz., the early or spring-flowering species, the tall-growing perennial varieties, and the more recently introduced annual sorts.

The species comprised in the first section are all dwarf-growing, early, or spring-flowering plants, of considerable beauty, and are very suitable for the spring flower-garden, for planting on rockwork, margins of shrubbery borders, and similar situations, and consist of such species as reptans, setacea, stolonifera, nivalis, &c., all of which are readily increased by division or by cuttings, and which will succeed in any ordinary rich light soil. With regard to what may be considered as the artificial varieties, or the tall-growing, late-flowering sorts which have been originated in this country or on the Continent, and of which Phlox decussata may be considered as the type, they are nearly all plants of the greatest beauty; and with the view of keeping up a succession of plants of moderate dimensions, it is advisable to insert cuttings of them every season during the month of March or early in April, about which time established plants should be carefully looked over, and the young shoots thinned out, and such portion of them as may be required should be inserted in the form of cuttings, in 6 or 8-inch pots, well drained, and filled with a compost formed of sharp sand and finely-sifted leaf-soil. The pots should be plunged or placed upon a slight bottom-heat, and treated in all respects the same as cuttings of Verbenas or other bedding plants. They will under such circumstances soon strike root, when they should be potted off singly into small pots, and should be kept somewhat close for a short time, and afterwards placed in a cold pit or frame, and planted out in beds, or where they are intended to bloom during the early part of the month of May.

Although these plants will generally grow and flower freely in any description of soil, being, nevertheless, gross feeders, where the greatest degree of perfection is desired it is necessary to give them liberal treatment, so that the ground intended for their reception should be well prepared by being heavily manured and deeply dug, or rather trenched, and the plants should not be placed closer than 15 or 18 inches apart. Young plants so treated will generally make a fine display during the first season, but will probably be even finer during the second, and after which they may be discarded, to be replaced by young plants, or they may be taken up, divided, and replanted in fresh soil. When it is intended to grow collections of these plants in pots for the decoration of the greenhouse, for exhibition, or other purposes, the plants selected for pot culture should be shifted into their flowering pots early in May, and the pots need not exceed 6 or 8 inches in diameter, and the compost used should be good turfy loam, with a considerable portion of well-rotted hotbed manure.

The plants should be placed on or plunged in cinder ashes out-of-doors, in a somewhat sheltered situation, but fully exposed to the sun, and should be well supplied with water, and when the pots are full of roots they may with advantage have occasional doses of manure-water. But as soon as the blooms begin to expand discontinue the use of manure-water, and place the plants in the greenhouse or where they may be required, and water freely with pure water, when they will continue in great beauty for a considerable time. The following six varieties, although not new, are, nevertheless, good, and distinct from each other, and, at the same time, are tolerably uniform as regards height and habit of growth. They have been selected from a somewhat extensive collection, as suitable for pot as well as for open-air culture, but the list may, of course, be greatly extended:—Mons. Hardy, Ariosto, Avenir, Charles Rouillard, Madame Bonneau, Etoile de Neuilly.

The various annual varieties of the Phlox are all descended from P. Drummondii, many of them being remarkable for brilliancy and richness of colour, profusion of bloom, compact habit of growth, and for the length of time they remain in flower, which renders them exceedingly useful for all decorative purposes: such as bedding plants for the flower-garden during the summer months, and as pot plants for the decoration of the greenhouse and conservatory, &c.

The seed should be sown in well-drained seed-pans, or pots of rich light soil, about the beginning of April, and placed in a gentle heat, and as soon as the young plants are large enough they should be pricked into other pans or boxes, or they may be potted off singly in small pots, and may be planted out in tolerably rich soil soon after the middle of May, while those plants intended for pot culture may about this time be shifted into their flowering pots. The following six varieties are all very beautiful, and are also distinct from each other, suitable as bedding plants or for pot culture:—

Phlox Drummondi nana compacta coccinea is of dwarf growth (seldom exceeding 6 inches in height), with flowers of a fiery red colour.

Phlox D. grandiflora splendens.—A very splendid variety, of robust habit, with large clusters of finely-formed flowers of a violet-crimson colour, each bloom having a distinct white centre or eye.

Phlox D. Heynholdii robusta oculata.—A fine rose-coloured variety, with white eye.

Phlox D. Radowitzii.—Also a very fine variety, with striped flowers.

Phlox D. Thorburnii.—Flowers purple and white.

Phlox D. oculata alba.—Flowers of various shades of brilliant colour, each bloom having a distinct and well-defined white eye. *P. Grieve.*

ON THE PREPARATION OF SPINACH.

Of all the vegetables grown in our kitchen gardens there is, perhaps, not one so dependent upon judicious preparation for a true appreciation of its good qualities as Spinach—when properly cooked delicious, but, badly and carelessly prepared, simply uneatable. When obtained from private gardens the first grand desideratum with Spinach—cleanliness and freedom from grit—may generally be ensured by the gardener, who, by the exercise of a little care in the gathering, may generally obtain the leaves clean and fresh. With Spinach purchased in towns it is otherwise. The crop sent to market is pulled up by the roots, and it would try the patience of a household Griselda to free the hearts of the plants from the accumulated earth which has found so safe a lodging between their leaves; indeed, so helpless generally is the task that we carefully avoid buying Spinach, however tempting it may appear; and we feel compelled to acknowledge in regard to it, as to the cooking of all or almost all other vegetables, that "they do these things better in France."

In that country, where economy of time as well as of money is so thoroughly understood, Spinach ready boiled and chopped may always be purchased, the buyer taking home the crudely cooked vegetable, warming it up and flavouring it *selon son goût*. When Spinach has been properly gathered or cut, a thorough washing under the tap or pump in a very large vessel is generally sufficient, after undergoing a good cleansing the leaves should be placed upon a sieve to allow all the water to drain from them, after which they should be put into a clean saucepan without any water, and pressed tightly down until the pot is quite full. It may then be placed sufficiently near the fire to steam the Spinach in its own juices, care being taken to shake up and stir the contents every now and again to prevent burning.

When sufficiently done and quite tender, the Spinach must be turned out and strained, then placed upon a clean chopping-board and chopped until perfectly fine, and all moisture has run from it. In this state, with the addition of a little salt, it will keep three or four days and form the foundation of many a delicate little *entremet* or tasty dish for a light supper for those who are fond of this vegetable.

The Spinach having been prepared as directed, it may be heated by being tossed and amalgamated with a lump of butter, seasoned with pepper, and dished *au naturel*, or it may be served with poached eggs on the top. If there are many persons, a pretty dish may be made of it by placing a portion of Spinach upon a nicely buttered and neatly cut round of toast, each mound of Spinach being crowned with a poached egg.

If a more *recherché* but more expensive dish is required, the yelk of an egg may be beaten up with two or three tablespoonfuls of cream, according to the quantity of Spinach to be heated; mix the cream and egg thoroughly with the vegetable, season with mace or nutmeg if liked, and toss over the fire in an enamelled pan until thoroughly hot through. Have ready some *croûtons*, mix them with the Spinach, garnish with them or eggs as preferred, and dish very hot. *Croûtons* are prepared by cutting stale bread into dice, and tossing them in boiling oil, lard, or butter, until they are brown all over, crisp, but not hard. *J. J.*

PEACH BLOSSOMS.

The various branches of industry have each their attractions and their drawbacks, their sunny and their shady sides. The collier in the pit leads an odd life, not unlike that of a rabbit in its burrow, but he earns high wages as a set-off against his lack of air and light. When a stranger is shown through a factory or a weaver's shed he is thankful on leaving to find that the outer world is at peace. The labourer in field or wood has to be at the mercy of the weather; and the wind, that he could so well dispense with, would be a real blessing to his brother who labours underground; indeed little does the field labourer know the value of that air and light which has reddened his face, and bestowed health and vigour on his manly frame. All fruit trees are beautiful objects, but a Peach tree in blossom under glass is worth going miles to see, for with very little forwarding—I hate the word forcing as applied to fruit growing—it comes into bloom as soon as the days begin sensibly to lengthen, and on this account is hailed like the Christmas Rose and the Snowdrop as the herald of all the flowers and fruit that are to follow.

We have latterly had in the *Gardeners' Chronicle* some differences of opinion expressed as to how we may best set the fruit, or in other words fecundate the flowers of house-grown Peaches, since they flower at a time when most insects are still in their winter quarters. Ants, when "they go out in bands," as we read in Holy Writ, are a great nuisance in hothouses and more especially in Orchid-houses; but I recollect that the ants in the early Peach-houses at Sion were reckoned useful, and kept down the greenfly, and as

they industriously travelled over every part of the tree they were credited with assisting to set the fruit. I give this for what it is worth, and only add that the fruit set all right. Now their near relatives, the honey bees, would have felt quite at home at this job, and their honest labours would have been highly prized, and well rewarded; therefore, as a last resort, we could easily tap at the door of a hive, and secure the services of half a dozen workers to go over the Peach blossoms. There may be many cases where wind would be serviceable in the setting of early Peach blossoms; and it may be gravely hinted that brushing the pollen from the stamens on to the stigma with a gentle wind or air brush would be safer than doing it with water from a syringe. Still that system must not be condemned without a hearing, for if the syringe may safely be used at the time of setting the fruit, it is very likely to be also freely used upon the foliage at other times, and that is inseparable from the best culture.

Nature, no doubt in order to secure fecundity in the Peach has provided it with twenty or more stamens—males, to one stigma—female; and these little mannikins are so deftly placed for their work that if the wind comes from any point of the compass the pollen will always be found to windward; moreover should any insect traverse the arena, it would carry the fructifying agent to its proper place. I need scarcely remark that the normal state of the pollen mass on the anther is that of a dry powder, whilst the stigma is moist; and when in health this state continues for several days. When the gentlemen of the Prize Ring speak of their fists in their own classical style, they term them "bunches of five," and we in like manner have all staked on the five fair petals of the Peach, for on this bunch of five is fought the battle of life; and unless these flower-buds come to the front in good condition, all else will be of no avail for a crop of Peaches. On close examination of the rosy flower, we find that before the dew falls with the declining day, the flower has put up its shutters, so that a moderate syringing would not convey water to the dry anthers. The opening and shutting of the flower could not fail to give motion and jostle the anthers quite enough to set the fruit even if no other agent could get to work, and this once done the more syringing over all the better. When I have pulled a flower of the Peach to pieces I have been surprised to find the woolly fruit well formed before the petals had dropped, so that the fruit may be set or impregnated before the observer may be aware of the fact, for the bunch of five guards its charge, and works on hinges to open and close until the new life of the fruit has set in, when the ground will be found strewn with rosy petals never more to open or close, and the array of stamens standing around their queen are dried up and shrivelled where they shone so fair.

Almost all the insect pests of the garden visit the Peach tree under glass, and do their best or worst to ruin it. The greenfly can easily be made to feel the penalty of high living and smoking after dinner; and the red-spider, clad after the fashion of Garibaldi's followers, comes boldly to the front, but his fortune has been told long ago, and, like a certain spirit who is reputed to hate holy water, the red-spider cannot hold his own against the garden engine, for in good hands the pumping process gives a finer dew than the syringe, though either or both will soon dislodge the spider. Leaves are reputed to be the lungs of plants, and they certainly elaborate sap and fit it for assimilation, yet here is a flood of fair flowers springing out of the wood, like Aaron's Almond, that bloomed on a leafless bough, as if they were clearing the way for the leaves to follow. The plant is hardy enough, but the flowers are tender, and their weak point is put forward, instead of being kept in reserve; but seen under glass the Peach, either in flower or laden with fruit, is a glorious sight. *Alex. Forsyth.*

New Garden Plants.

CATTLEYA DOLOSA, *Rchb. f.**

Though this Cattleya has the general aspect of a C. Walkeriana, Gardn. (bulbosa, Lindl.), it may be immediately recognised by its stouter bulbs, stronger leaves, and larger flowers coming from fully developed leafy bulbs. The most remarkable feature is found in the side lobes of the lip, which are fully developed, overlapping the whole column, while they may be called mere abortions in C. Walkeriana, where they only are able to stand near the base of the column, whose anterior part ought to be left free, because there is nothing of lobe substance given to envelope them. If one takes care to note these remarks together, one need have no doubt about the older representations wherein the artists have thought necessary to adorn (?) the tiny flowering bulbs of C. Walkeriana with a leaf, which appears never to occur, since it is the special feature of C. Walkeriana to have separate bulbs for leaves, and tiny thin-sheaved leafless stems only for flowers. It is quite astonishing that such tiny thin things then develope breaks, which give the stoutest bulbs. We cannot help suspecting that there is a certain alimentation, not only by the young roots, but (excuse me, ye theorists!) from the next eldest leafy pseudobulb. We never heard of a case in which a flowering stem of C. Walkeriana had produced a new flowering stem; if such were the case one might guess the plant would then be exhausted, and perhaps a sleeping break of the third eldest bulb, the last with leaves, would awake. But we return to C. dolosa. "The bulbs are 5—6 inches long. Leaves generally in pairs, 4 or even 5 inches long, 2½ to even 3 inches broad, oval." "C. sp. Minas has flowered on the largest and finest bulb the plant has yet made, with two fine leaves." "On examining the plants, of which I have many, I find no traces of any abortive bulbs. They are all uniform, gradually increasing in size, never alternately large and small, and all showing scars of the fallen leaves. It is a plant which retains its leaves very long, and there are seven or eight bulbs with leaves in the most of the best plants." All these notes were given me by my invaluable, most acute, oldest English correspondent, John Day, Esq., some years ago.

I have seen at Mr. Day's place about a dozen if not more specimens of this plant. The flower would appear to match C. Walkeriana, being even brighter in colour. Perhaps there is a difference in the disk of the lip being white in Walkeriana, yellow in dolosa, but is this constant? There appeared, however, quite lately a variety of C. Walkeriana at Mr. Day's, that from his glowing description might be equal to this in beauty.

This plant appeared at Mr. Stevens' rooms in thirty-four lots at the sale, Saturday, July 6, 1872, as "Cattleya or Lælia, from the interior of Minas, supposed to be C. Jonghi, figured in the *Gardeners' Chronicle*." Now there never was, at least within my knowledge, a C. Jonghi in the *Gardeners' Chronicle*, but a Lælia Jongheana. I have in my portfolio quite a lengthened correspondence on this question, amateurs being disgusted about that "supposition." In this case a walk to Messrs. Veitch's nursery, and a comparison with Lælia Jongheana there, would have immediately shown the difference. I just now remember, as an instance of these "suppositions," that one evening the late Mr. James Veitch told me he had imported a splendid new Tropæolum. One of his competitors immediately advertised the same species, at a much cheaper price; but when the latter flowered, it proved totally different, though the fame and value of the original plant was destroyed for ever. As soon as Odontoglossum vexillarium had arrived in Europe, "supposed" vexillariums appeared. I think it a little surprising that the amateurs do not help themselves in these matters, by simply asking for warranted names or none at all, and the return of money in case of mistake. It has already been stated in these columns, that the whole bulb of Lælia Jongheana consists of one chief joint with a small joint beneath, while in C. dolosa there are several joints in the bulb. After all, if the plant was not so exceedingly shy in flowering it would be a very notable introduction. As matters stand, it can only be an object of curiosity in the grandest collections. I find in my Herbarium only one specimen gathered by Dr. Regnell at the places noted. The representations figs. 78, 79, showing the habit of the plant, and a separate flower, the latter natural size, were made by Mr. Worthington Smith from Lord Londesborough's plants, grown by the skilful cultivator, Mr. Denning. *H. G. Rchb. f.*

FIG. 78.—CATTLEYA DOLOSA, NAT. SIZE.

Foreign Correspondence.

NEW YORK: *American Sweet Apples.*—I recently saw extracts from the London *Garden* of an article on American fruit, in which the writer speaks of only one sort of our Sweet Apples, and that the Tallman Sweet. We have a great number of varieties, seven to nine of which may be called very superior. They begin to ripen here in July, and so keep on till November. Several of the latter sort may be kept sound, and in fine flavour all the winter; one, the Sweet Russet, can be easily kept in perfect order till the following July, thus giving us Sweet Apples all the year round.

The richest and most nutritious of all our Sweet Apples is the Belle Bonne. It is of large size, nearly that of the Pound Sweeting, and when ripe of a golden green colour. The juice is of such high flavour that I have often seen it granulate into sugar when the fruit was baked, as it oozed outside of it on the dish.

The first Apples of this sort that I ever ate grew on the farm of my late maternal grandfather, in Hampden County, Massachusetts. I think he must have planted the trees as early as 1785, perhaps before. Some thirty odd years ago, when my brother, Mr. Lewis

* *Cattleya dolosa*, Rchb. f.—Aff. C. Walkeriana, Gardn. Pseudobulbis semitisiformibus diphyllis, rarius monophyllus; foliis oblongis vix obtuse acutis; pseudobulbis floridis foliatis; pedunculo florido uni seu bifloro; sepalis oblongo-lanceolatis acutis; tepalis cuneato-ovatis acutis crispulis; labello cuneato-oblongo trifido; lacinius lateralibus semioblongis magnis totam columnam circumvolventibus; lacinia antica transverse semiovata, antice emarginata; nervis medianis elevato carnosis; columna trigona.—*Cattleya* sp. *Minas*, Hort.; *Epidendrum dolosum*, Rchb. f., Xenia Orchidacea, t. 224, 1874; *Cattleya dolosa*, Rchb. f., l. c.

F. Allen, editor of the American *Herd Book*, planted an orchard of about 40 acres on his farm, at the head of Grand Island in the Niagara River, he sent to our grandfather's farm for grafts to insert in a number of these trees, and soon after, down to the present day, he has had an abundance of fruit from them.

The Belle Bonne ripens about the 1st to the middle of October, and although called an autumn fruit, I have kept them in a cool upper chamber of my house where it did not freeze, and also in a well-aired cellar, into the following April. Although a little shrivelled so late in the spring, the fruit still retained its fine flavour. Simple as you may think it, there are few dishes that the unvitiated taste among us better relishes than a baked Belle Bonne Apple, sliced with crumbled bread into milk. This fruit also, with cream and bread-and-butter, makes a delicious dessert, and is far preferable to the best of pies, for it is equal to these in taste, and much more easily digested.

I wish some of the London fruit dealers would make an importation of a few of the superior sorts of American Sweet Apples, for I am confident that they would soon obtain high favour among their customers. They can begin to do this in July, together with Peaches and other fruits, in refrigerators. *A. B. Allen, March* 15.

Craigton, Jamaica.—Craigton, Jamaica, is the mountain residence of His Excellency Sir W. Grey, K.C.S.I., Governor of Jamaica, and is situated at a distance of about 11 miles from Kingston, the chief town, on a part of the Blue Mountain range of hills, at a height of 2660 feet above the level of the sea. After a drive of about 7½ miles from Kingston, we come to the foot of that part of the mountains called Gordon Town. From thence it was necessary to proceed on horseback. The scenery along this *route* is magnificent. Here the barren and fertile, the level and inaccessible, seem promiscuously commingled; on one side is seen a fine valley, or glade, irrigated and fertile, by the foot of mountains craggy and desolate; on the other, a precipitous defile or dangerous ravine enclosed by abrupt precipices and covered with a luxuriance of tropical vegetation, where the sun's rays, however piercing they may be, can never enter. Amidst such scenes as these are the dwellings of the inhabitants, consisting of cottages and buildings varying in size and appearance. Here and there stands a dwelling of more imposing appearance belonging to some Coffee or Pimento planter, while occasionally is seen the spire of a church peeping through the wooded enclosure. After a ride of an hour and a-half we come to the unpretending entrance to Craigton, hidden behind a fine bank of Hibiscus grandiflorus mixed with Hedychium Gardnerianum and Canna indica. The first object that attracted attention on entering the gates was a fine specimen of Araucaria excelsa, 40 feet in height and beautifully furnished; on our left was a line of Croton variegatus with splendid variegation. Passing along the walk a little to the left we come upon a mansion, or "maisonette," low built and unassuming in appearance but quite in conformity with the wants and conveniences of a tropical climate. A gable directly in front of us was covered with the magnificent Bignonia venusta which at the time of our visit was blooming in profusion, thousands of blossoms forming literally a sheet of blazing colour. Turning a little to the right we come upon one of the principal walks, by the sides of which are tubs, nicely painted, filled with a variety of flowering and foliage plants, some of them in great beauty, such as Alocasias, Caladiums, Palms, Eucharis, and the beautiful Adiantum farleyense. At the end of this walk is a Cedar tree, entwined with Bougainvillea glabra, reaching to the height of nearly 40 feet, and which, peeping between the handsome green of the Cedar and with a profusion of its beautiful inflorescences, forms a truly exquisite picture. As a companion to this is Allamanda Schottii, threading in the same manner, and also well laden with blossoms. Turning a little to the left, and passing down a small flight of steps, we come upon a fine terrace and croquet lawn, on which are dotted fine trees of the native Mango (Mangifera indica), under whose grateful shade are placed seats for the use of the croquet players, &c. Here are also good specimens of Latania borbonica, Areca oleracea, Pandanus utilis and elegantissimus, Dracænas ferrea and terminalis, Ixoras, Gardenias, Plumbago, Sanchezia, Ardisias, the latter loaded with berries, and, to crown all, a magnificent specimen of Poinsettia pulcherrima: this plant is about 12 feet in height and 30 feet in diameter and of the most elegant shape and appearance, its branches tipped with their enormous bracts drooping to the ground—one head measuring, from tip to tip of the bracts, 2 feet 6½ inches in diameter. English gardeners have something yet to accomplish.

Leaving this we pass a small summer-house covered with Passiflora edulis. Then following the course of a winding walk we come to a grove of Mango, through which we descend by a flight of steps, on each side of which and throughout the grove are placed clumps and patches of many of the native Orchids—Cattleyas, Oncidiums, Phaius being the most common, but many others, both epiphytal and terrestrial, together with the almost endless variety of native Ferns. Descending by a gentle incline we reach another small flight of steps, on each side of which are two fine specimens of Aloe, Agave americana, one of which presents a most decided appearance of producing a fine variegated variety entirely different in appearance to any at present known.

We now come to a small semicircular terrace, in the different beds of which are planted varieties of Pelargonium, Coleus, Iresine, Fuchsias, and Roses, &c. Above and surrounding this terrace is a fine bank planted with Roses, mostly of the Tea and Noisette varieties, with a few Perpetuals, which produce a profusion of flowers of good quality. Alongside this terrace are large plants of Nerium album and splendens, Amherstia, Meyenia, Lagerstroemia, all of large size and beauty, while climbing up some of the trees are varieties of Passiflora in flower and fruit. Here and there are clumps of Banana, Plantain, Orange, Lemon, Citron, Shaddock, Lime, with specimens of Bread-fruit and Pomegranate. Passing these we come to a small kitchen garden, in which are grown many varieties of European vegetables, &c.,

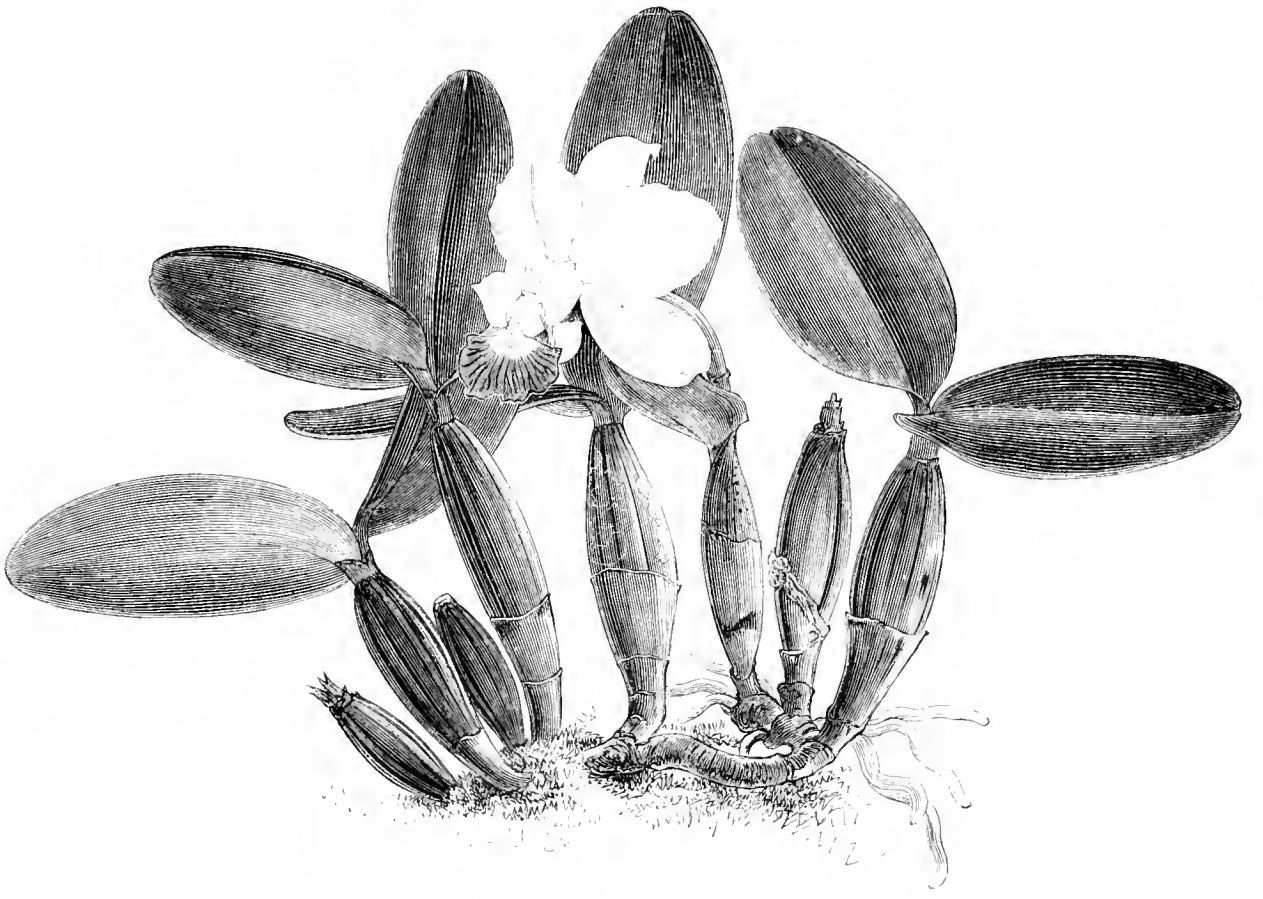


Fig. 79.—Cattleya dolosa.

many of which prosper remarkably well. This handsome garden (which seems more like a well-filled plant stove outdoors) was formed by His Excellency Sir J. P. Grant, late Governor of Jamaica, and is at present most liberally kept up by the present Governor, His Excellency Sir W. Grey, K.C.S.I., for whom it forms a beautiful summer retreat, and by whose kindness we are permitted to give the above description. *J. H., Feb.* 21.

Natural History.

The Sparrow.—The late severe weather has made this little depredator more destructive than usual, especially on early Peas and Gooseberry buds. I had some William the First Early Peas 2 inches above ground, and rodded, as I thought, safely, but on looking at them to-day the sparrows have made quite a wreck of them, and nets have been placed over the stakes on purpose to try to have the Peas untouched. Our Transatlantic cousins having introduced the English sparrow into the neighbourhood of New York, are now finding out what a mistake they have made. In the March number of the Philadelphia *Gardeners' Monthly* a correspondent writes of it to the following effect:—"In some respects this little foreigner deserves our welcome. But his distant origin, and his cheery, home-loving ways, blind us to his betters at our doors. Before him we had native birds greedy for worms, more pretty of plumage, and sweeter of song. We feed and pet this emigrant, but our own birds we shot and stoned till they found neither pluck or numbers to fight with the worms. He breeds so fast that, if each one only ate a few, their numbers would make havoc among the creeping tribes. A little colony of eight settled here four years ago, and have filled the town, but as early birds after the worms they don't eat a cent's worth. Enough sparrows have squatted on my 2 acres to eat all the worms of a hundred and cry for more, yet the tormenting pests still strip my Gooseberry and Currant bushes right under one's nose. Nor does the sparrow hunt other worms any better, and, in fact, as a help against our foes on leaf and fruit I set down the English sparrow as a failure and a fraud; but, worse than this, I fear we may yet find him as big a pest as the worms he promised to eat. Sad stories come to me of his picking out the fruit-buds in the winter, and of his raids on the opening bloom of spring. Last year near Newhaven a flock swept off in a day the promised crop of a whole orchard. Last winter the squatters on my ground stripped my Currant bushes of half their buds; they served a large Strawberry bed in the same style, and hunger could not be pleaded for such vandalism—they shared with my fowls plenty of small grains and garbage always within reach. These sorry habits in such swarms of them as must soon fill the land will by-and-by demand a premium for their scalps." This correspondent expresses a wish, as Burns did of the "Deil," that the sparrow might "tak' a thocht and mend," but there is little chance of this from what we know of his habits in this country. Our farmers know to their cost the ravages sparrows make on their ripening corn near the hedges, and to the grain in their stacks in the winter time, and it will be the same in other agricultural countries abroad where they have been introduced. We gardeners, like the farmers, likewise get blamed if we take means to keep their numbers within bounds, and the number of their scalps taken must not be counted for "Mr. Punch" to get hold of. The evil of acclimatising sparrows and rabbits in America as well as in our Australian colonies was pointed out at the time when these exportations were being made, and the results now show the soundness of the advice. *William Tillery.*

The Villa Garden.

Lilies.—A garden without Lilies appears to be sadly wanting in one of the best of its possible floral features during the summer; and the Lily can be so easily grown in pots as in the open air that no garden should be without them. The flowers are both delicate and rich in colour, they are of massive build, and generally richly fragrant. Unfortunately, they are not to be met with in many Villa Gardens, and for the simple reason that their culture is supposed to be difficult, which is not true in fact. The aim of this paper is to show that the Lily can be grown easily and successfully, and when successfully grown it is eminently satisfying to those who take an interest in it.

Every year we grow a few in pots and borders. In the open ground we have the common white Lily (L. candidum), and the fine old Tiger Lily (L. tigrinum)—the first flowering early and producing large white flowers, the second coming in somewhat later, and blooming with great freedom from well established bulbs. They are fine objects when in bloom. They are now beginning to make their growth, and throw up as many as nine and twelve flower-stems by the blooming period. As the stems attain size they are tied to stout stakes, else the wind would blow them about and snap them off. In tying them the stakes should slope outwardly a little, which gives space for the full development of the heads of flower. When the plants are developing their buds, some mulching in the way of good manure is applied, and occasional doses of liquid manure given. Instead of planting the bulbs in an open spot where the flowers are fully exposed to the sun, our clumps are on a border on the west side of the garden where they get the morning sun, but a good deal of shade from noon onwards. This position is favourable to the prolongation of the heads of bloom, and as other plants grow about them, such as Delphiniums, Asters, Stocks, Pentstemons, and some good hardy perennials, the soil about the roots is kept shady and cool. These clumps are lifted and replanted about once in six years, and then it is found a large number of bulbs have been formed, and so two or three clumps can be made from them. In this way a good stock can soon be obtained. They might even be left longer in the ground with advantage.

How to Plant.—As it is not too late—though quite late enough—to plant Lilies, the mode of planting can be set forth in a few words as a seasonable hint for the time of year. A deep hole is dug, the soil well loosened, and a good dressing of loam, leaf-soil, a little peat or fibre turf, and some rotten cowdung mingled with it at a depth of from 6 to 9 inches. Then six bulbs or so of any one variety are planted at a depth of 6 or 7 inches, and then the compost we have just given placed over the bulbs, the soil filled in and trodden pretty firmly about them. Planted in this way, Lilies cannot fail to do well. Any one proposing to plant should do so without delay.

When the plants have gone out of flower, the flower-stalks are cut away, and when winter approaches some loose litter is placed over the clumps, as a protection from severe weather. In early spring, when a movement of growth takes place, the soil is carefully taken away till the bulbs are partly uncovered, and a good dressing of rotten manure, leaf-mould, and loam applied. This is of great advantage to the plants, as the shoots throw out roots above the bulbs, which root into the fresh soil and derive increased support therefrom. By means of such little attentions as these our commoner border Lilies can be made very much finer than is usually seen in gardens.

In addition to the common white and the Tiger Lilies, the following can also be grown as border plants:—L. umbellatum, of which there are several varieties, with flowers generally of an orange-red hue, but all very showy; L. Thunbergianum, also in fine variety; L. longiflorum, pure white; L. auratum, and the old L. speciosum, often called lancifolium, in variety. All these, however, we prefer to grow in pots, but they make very fine and striking border flowers.

Cultivation in Pots.—Lilies need to be grown in pots only when there is a greenhouse or some such suitable place in which to flower them. We find them to be such useful decorative plants for mingling with Fuchsias and other plants in summer when in bloom, that we grow in them pots in consequence. We commence the blooming season with the umbellatum and Thunbergianum types, and follow on with longifolium, auratum, and speciosum, blooming them in the order given—the three first in large 24-pots, the larger growing forms in 16-sized pots, placing one good strong bulb, or two or three smaller ones, in a pot.

Just such a soil as that which has been recommended for borders may be used for Lilies in pots. When the flower-stems begin to decay, and till they are down in autumn, the pots are stood out-of-doors in all weathers, but when winter comes on they are taken into the greenhouse, and stood on the ground-floor under a shelf, or put away in any odd corner in it. A little water is occasionally given during the winter, to keep the soil cool and moist about the bulbs. In early spring growth sets in, and as soon as the shoots appear coming through the surface of the soil the bulbs are turned out of the pots, and nearly the whole of the soil shaken from the roots and the bulbs re-potted, planting them rather deep in the pots. The roots soon take hold of the fresh soil, and the shoots come away very strong. The pots are not quite filled with soil at the time of potting, but fresh is added as the shoots lengthen. The pots are then stood out-of-doors in a shady place, and the stalks properly secured as the stems make growth, and, when the buds are developed, carried to the greenhouse to flower.

Garden Operations.

PLANT HOUSES.

Greenhouse Hard-wooded Plants.—It is now time to see to the potting of the greater portion of such hard-wooded plants as require it. As I have before urged, it is a serious mistake to defer this operation in the way growers of these plants at one time used to, until later in the season. The weather is then hot, and the drying influences of sun and air are such as to much more seriously tax the powers of the roots after they have undergone the inevitable check received in potting, than is the case when the work is carried out before the sun gets so much power, and the young growth the plants have made is so much less. The stereotyped advice that used to be given indiscriminately, to give a good watering to settle the soil to the roots immediately after potting, was doubly effective, as it very often settled the plants altogether when of a fine, delicate-rooted nature. The opposite essential, of the plants going as long as possible without requiring water after the more or less unavoidable disturbance consequent upon shifting, is best secured by early potting whilst the air is comparatively cool and the sun less powerful. Another practice in potting hard-wooded plants that is frequently recommended, and often carried out, yearly kills thousands of them, especially when they have attained considerable size, and above all if they are pot-bound. I allude to the barbarous practice of puncturing the sides of the ball with a skewer or pointed stick. When plants are subjected to this scarifying process, whereby their best feeding roots are ruthlessly and needlessly broken, no wonder that there are numerous deaths a month or two after potting, or that the plants, if not killed, never acquire the vigour they ought to have. The practice is resorted to under the impression that it will assist the roots to lay hold of the new soil, than which a greater mistake could not exist. With delicate-rooted things, if in potting the new soil is rammed as close as the old ball, and the roots are in a healthy active state, they will soon enter the new material. See that the soil is sufficiently dry before use; it will be more than ordinarily necessary to look to this the present season, in cases where it has lain out-of-doors, from the unusual quantity of rain that has fallen. In potting, use the soil in a more lumpy state for the largest plants, in all cases adding enough sand, for although an excess of this has the obvious effect of rendering the soil poorer, still it is better to err on this side than on the opposite. The finest rooted plants, such as Dracophyllum gracile, Gompholobium polymorphum splendens, Gompholobium barbigerum, and Roella ciliata, need more sand than the stronger growers, like Polygalas, Pimeleas, Aphelexis, or Boronias. Corresponding care should also be taken with plants of the former character, so as to break the roots as little as possible in removing the drainage; and in the case of the lovely blue Leschenaultia, although not so fine in its roots as some, it is so impatient of their being disturbed that it is better not to touch the crocks at all if the roots have, as is generally the case when the plants are in good health, got amongst them, but simply to pot the whole together. This can the more easily be carried out with a plant of this kind that is usually not very long-lived, and that will bear a larger shift than some things. Any one who wants to make sure of having blooming specimens of this finest of blue plants, should start a few small ones every year; in fact, there is no way so certain as this in respect to the generality of hard-wooded subjects. No time should be lost in getting through all that are intended to be

moved, completing the work as early in the month as can be, getting them all together, if there is not the convenience of a separate house wherein to place them for a few weeks, at all events putting them at one end of a house which can be made to suit them, by giving no side air opposite them, and keeping it moist and shaded when the sun is bright.

Heaths.—Any that are likely to suffer for root-room before September should at once be potted, using peat of a closer harder nature, with more sand in it, for the slowest growing, hardest wooded kinds. The impression that Heaths cannot be potted with safety except after flowering is simply a mistake, they will bear it at any time when the roots are in motion or about to start. They must not be subjected to drying winds or too much sun for a few weeks after moving, being careful at the same time not to over-water.

Azaleas.—The Azaleas that were first forced should, as soon as the flowering is over, be examined to see that they are free from thrips, for if any of the eggs of these insects were existent upon the plants when put in heat they will have come to life, and unless destroyed at once will increase to an extent that will cause through the summer continuous trouble and serious injury. The young leaves which these forced plants will have made are not in a condition to bear fumigation without being injured, but should be washed with tobacco-water. The plants ought to be then placed in a gentle heat; 50° in the night will answer, but 4° or 6° more will do no harm, provided they are put where they can get plenty of light. In a few weeks after they have flowered any that require larger pots may be shifted. Azaleas differ from the generality of the hard-wooded section of plants in the time they should be potted, consequent on their difference from most things in the time their roots begin to move. When in the usual course of culture they are submitted to cool treatment in the autumn, after their growth is completed and the buds are set, the roots stop and do not make any progress as in the case of many plants before the shoots begin to grow; on the contrary, Azaleas, whether forced into flower or allowed to come on of their own accord, make considerable progress with their young shoots before the roots commence to grow, and until these move they should by no means be potted: at whatever time they flower this root-action will generally begin three or four weeks after they have bloomed. They should never be over-potted, especially such as are required for forcing, as they can be kept in a vigorous healthy state in smaller pots than most things by the use of stimulants when growing, of which "Standen's Manure" is by far the best of anything I have ever tried; to plants that have been forced for early flower, three or four tablespoonfuls of this manure to each of such as are in 15 or 18 inch pots, now, and once or twice again during their season of growth, will greatly assist them. Azaleas, when well managed, are little inferior to Camellias for cut flowers or conservatory decoration, and as they acquire size increase in usefulness, provided they are well treated, especially after they have been forced, as by this means they become inured to early blooming *T. Baines.*

FLOWER GARDEN.

The weather having been so unfavourable it may have been impossible to complete the various jobs named in previous notes; if such be the case, lose no opportunity of completing them forthwith. Shrub-pruning, turf-laying, the sowing of grass seeds, edging and regravelling of walks—all these jobs should now be finished, as mowing will soon be in full swing, and then time for the execution of such works can seldom be found, at least not without neglecting the mowing, which should never be. Nothing tends to enhance the beauty of a garden more than a well-kept lawn; therefore, see that the mowing machines are cleaned, oiled, and put into working order, and as soon as the ground is sufficiently dry a commencement should be made. The gales of wind with which we have lately been visited, may have loosened recently planted trees and shrubs; they should, therefore, be examined and securely staked and fastened, and if not mulched, let them be done at once, for the probabilities are in favour of a dry summer, and if mulched whilst the ground is full of moisture, watering may not be requisite all the summer. If desired, many kinds of herbaceous plants may now be readily increased by division, and will flower all the better for the operation. Asters, Fuchsias, Delphiniums, Phloxes, Pyrethrums, Potentillas, and many other species bear division with impunity; they should be lifted bodily, and cut clean with a large knife or edging-iron. In replanting, aim at disposing the different varieties so that harmony both of colour and height is obtained. After the border is finished fill up any vacancies there may be by sowing Sweet Peas, Lupins, Convolvulus major, and other tall-growing annuals at the back of the border, and in front, Mignonette, and the dwarfer annuals. Stocks, Asters, Zinnias, and Phlox Drummondii should now be sown in frames, placed on a hard bottom, in a sunny aspect; put in the frames from 3 to 4 inches depth of light soil, and sow in drills 6 inches asunder. The advantage of having them on a firm bottom is that when ready to be pricked out they can be lifted with comparatively little check; other annual flower seeds may be raised in the same way, and as a rule this is more satisfactory than sowing them where they are to stand. Where carpet bedding is practised, see that abundance of Pyrethrum Golden Feather and Tagetes signata pumila are sown, both of which are indispensable for this purpose; these we sow on a south border in the kitchen garden, and transplant to the flower garden from the seed-beds in showery weather. The several varieties of Alternanthera may be classed as the carpet-bedding plants *par excellence*, and, as they require to be planted very closely together, should be propagated accordingly. The simplest and most effective plan of propagation we have yet hit upon is to make up a slight hotbed, the same as for Cucumbers; on this place the frame and 4 inches of soil, peat, leaf-soil and loam, in equal proportions; make it firm and put in the cuttings 2 to 3 inches apart—they strike in a few days and make grand plants, and are no further trouble as they need not be moved till required for the beds. Let all seedlings intended for the sub-tropical garden have timely attention as regards potting; they should never be allowed to get pot-bound or stunted, as it would have a detrimental effect on the whole season's growth. *W. Wildsmith, Heckfield.*

FRUIT HOUSES.

Pines.—Continue the treatment as indicated in the last Pine Calendar to rootless suckers or plants which have been divested of the roots and restarted, and water those plants which need it when they have made new roots. To secure these free from injury in their present tender state will involve daily attention to the temperature of the beds in which the pots are plunged, which should not at the base of the pots be more than about 90°; and should it rise to 95°, the pots should be slightly raised by placing something beneath them to allow some of the heat to escape. As these plants, under proper conditions, will make roots very rapidly, and will speedily be fit for shifting into larger pots, and as success very much depends upon the condition of the materials in which they are to be placed, such matters should have the requisite attention immediately. Out of the many sorts of materials which I have tried in this way, loam alone of a friable nature appears to be the most suitable for general use. Pots of from 9 to 12 inches in diameter are ample for all purposes, and before potting apply a good dash of soot or wood ashes on the crocks, to prevent the ingress of worms. Continue to slightly shade the plants from powerful mid-day sunshine, and likewise see to this matter in connection with other stock. The Pine-apple is very susceptible of injury from this cause at this period of the year, particularly those plants which are in close proximity to the roof of houses having large squares of glass. To obviate this we employ new milk, and sufficient lime to give it consistency, which is very lightly laid on with a fine-haired brush. Where the plants are situated a distance from the glass this is not necessary. In every department at this season strive to maintain an atmospheric condition which is calculated to promote growth. *Geo. Thos. Miles, Wycombe Abbey.*

Melons.—The cold, sunless weather which has prevailed throughout the past month having rendered incessant firing necessary, the cultivation of Melons, particularly in pits and frames, has been carried on under great difficulties, and unless constant attention has been paid to bottom-heat, but little progress will have been made. Aim at a steady bottom-heat of 85°, with a fair amount of moisture at the roots. Where plants are setting their fruit, keep the atmosphere dry, impregnate all female blossoms every day, and if dull weather continues the plants may be reduced almost to a flagging state until a good set is secured, when they may receive a moderate supply of water. As soon as the fruit has attained the size of Walnuts, the plants may receive their final earthing, using good rich compost previously warmed; ram it firmly and evenly down, and, if in a dry state, a second watering may be given. Keep up the bottom-heat close, and syringe at 80° on fine afternoons, and maintain a night temperature of 70°, with a sweet growing atmosphere. All superfluous growths must now be stopped or removed, and the foliage must not be allowed to become crowded. Thin out the laterals on succession plants. Train and stop when they have filled two-thirds of the allotted space, and follow directions given in former Calendars. Make liberal sowings of free hardy kinds to succeed the forced vegetables in pits. Keep up a bottom-heat of 80° to 85° by means of linings where plants are growing freely. Earth with good turfy loam as the roots show on the surface. Use the syringe sparingly until the weather improves, and if the stems show signs of canker apply a mixture of quicklime and sulphur. *W. C.*

KITCHEN GARDEN.

Operations in this department have, in most places, been greatly retarded by the winterly weather that prevailed during the greater part of last month, and every effort must now be made to bring up arrears. A general sowing of Broccoli, Cabbage, Cauliflower, Savoy, Couve Tronchuda, and others of the Brassica tribe should at once be made on well-prepared seed-beds, where the soil has been made moderately rich near the surface by the use of thoroughly decomposed leaf-soil or very mild manure, from which the plants will lift sturdy and strong, with plenty of fibrous roots, instead of the long, clean tap usual to them when they have to strike far down in search of the necessary food. In order to get them short and stocky the seed should be sown thinly, as much of the success in cultivating these so as to stand the severity of the winter depends on keeping the heads near the surface of the ground, and this can only be done by giving them plenty of room in the seed-bed, to prevent them from becoming drawn. One or two of the earlier sorts, such as Snow's, Backhouse's, Veitch's, or Osborne's, are indispensable in every garden, but for a late supply make choice of such as have hard woody stems in preference to robust growers, as the former will stand uninjured in weather that would prove fatal to the latter. I have found nothing superior to Cattell's Eclipse as a late spring Broccoli, for with me it has stood unscathed when most others have been decimated. Among summer and autumn Cauliflowers, Veitch's Giant stands pre-eminent, and no garden, however small, should be without this very desirable variety. Sow a bed at once to be planted in a partially shaded situation for a summer supply, and again later on to come in in the autumn. Couve Tronchuda should not be overlooked, as it is one of the most delicious of all the Brassica family for affording a supply from September till the Brussels Sprouts come in. Chicory, Salsify, Beet, Carrots, &c., should now be got in; for the latter make choice of ground that has not been recently manured, and that has been either trenched or stirred to a good depth for a previous crop. A dressing of soot, either now or as the plants appear, will be found of the greatest benefit to them, and will keep them free from wire-worm. To maintain a regular supply of nice young roots of these and Turnips, small sowings should be made once a fortnight or so, as well as of Radishes and Lettuce, that plants of the latter may be always ready for planting in regular succession. Sow or plant at short intervals the necessary quantity of Peas and Beans to meet the demand. Both of these do best when sown at wide distances apart, so as to get some low-growing crop between, such as Celery, Cauliflower, Lettuce, or Spinach. By so doing the latter are greatly benefited, as the necessary shade is afforded them during the summer, and the crop of Beans or Peas is double that which can be procured when they have an insufficiency of light and air playing on each side of the row, as is sure to be the case when they are only grown a few feet apart. A distance of from 8 to 10 feet for the tall-growing Peas affords sufficient room for a row of Celery or Cauliflower between, where they will do much better than if exposed in the open quarters, subject to the full glare of the sun. Globe Artichokes, where sufficiently forward, should now be thinned out at once, by removing any superfluous suckers that have made their appearance during the autumn and winter. A planting of these made in well-trenched, heavily-manured ground, at a distance of 4 feet apart, will afford a successional supply after the old-established plants have become exhausted, or the heads old and unfit for use. Jerusalem Artichokes are generally relegated to some out-of-the-way part of the garden, where they have but little chance of forming useful sized tubers. These, like most crops, pay for liberal cultivation, and should have the ground deeply dug or trenched, giving it at the same time a good dressing of manure. Where land can be so treated, and planted with the above, they answer admirably as screens for shutting out unsightly objects. In the forcing department frames, as they become vacant, should be filled with French Beans, so as to get the houses clear of these as soon as possible. Give plenty of air to Asparagus, in order that it may be well flavoured, and, whenever watering becomes necessary, a handful of salt thrown in will be of material assistance in that respect. Before finally earthing up Potatos, give them a good watering with some tepid water if at all dry, and then surface over with some nice light soil which will keep the roots in a uniform state as to moisture. Push on Tomatos and Chilies by affording them the necessary heat, and shift on as they fill their pots with roots, so as to get them large and strong by the time the weather is sufficiently favourable for planting them out. Make sowings of Sweet Basil and Marjoram, and put a few hand-lights on beds of Mint to forward the same to succeed that forced in pots or boxes, and so keep up a supply. *J. Shoppard, Wolverstone Park.*

THE
Gardeners' Chronicle.

SATURDAY, APRIL 1, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, April 3—Sale of Orchids, at Stevens' Rooms.

WEDNESDAY, April 5—Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M. Royal Caledonian Horticultural Society's Spring Show. Sale of Specimen Stove and Greenhouse Plants, at Stevens' Rooms.

THURSDAY, April 6—Meeting of the Linnean Society, at 8 P.M. Sale of Orchids, at Stevens' Rooms.

WE are glad to see that the Duke of NORTHUMBERLAND has moved in the House of Lords that, *à propos* of the ill-effects of NOXIOUS VAPOURS on human beings and on vegetation, an humble Address be presented to the QUEEN, praying "that Her MAJESTY would be graciously pleased to appoint a Royal Commission to inquire into the working and management of works and manufactories from which sulphurous acid, sulphuretted hydrogen, and ammoniacal or other vapours and gases were given off; to ascertain the effect produced thereby on animal or vegetable life, and to report on the means to be adopted for the prevention of injury thereto arising from the exhalations of such acids, vapours, and gases, and upon the legislative measures required for that purpose." The injury, continued the Duke, resulting from what was complained of was not confined to foliage and vegetation generally, but also extended to the health of large masses of the people. At present there were no adequate means of redress, even for those who sustained damage which could be measured by money. Many persons who had sustained such damage were afraid to have recourse to the courts of law, in consequence of the expense, loss of time, and risk which such a proceeding would involve. Again, manufacturers had boasted that damages obtained in a court of law would not deter them. Their profits were so large that they could afford to set apart a fund for the payment of such damages.

The Duke was followed by the Archbishop of CANTERBURY, who, from his official residence in Lambeth, has good opportunities of seeing the evil effects on the health of his neighbours, and on the trees in the Palace grounds and on the neighbouring Embankment. In the course of his remarks, His Grace is reported to have said:—

"It must strike everybody who had known the metropolis for a good many years that the gardens which used to be the glory of the neighbourhood of London were fast disappearing, and that those beautiful Cedars which were seen in the neighbourhood of London more than in any other part of the kingdom were fast wasting away. It was equally true that the rich people who used to live in the suburbs of London were going further out. In a report of an official character, strong reference was made to a state of things which existed within a few minutes' walk of their lordships' House. It is stated that along the Lambeth Embankment, between Vauxhall and Lambeth Bridges, there were works which were highly injurious to the health of the inhabitants of a very crowded neighbourhood. The trees died on that Embankment, and he was informed that the Local Board had determined not to plant any more trees there. Their lordships, who were able to live in large and healthy houses, enjoyed the satisfaction of feeling that they might enjoy comparative immunity from noxious vapours and gases. And he himself, though dwelling in Lambeth, had the advantage of a spacious house, with a large garden, and had the further advantage of being able to go to the country when he liked to do so; but let their lordships think of the thousands of poor, who, living in such a neighbourhood, were shut up in their narrow lanes and crowded houses from morning to evening and evening to morning throughout the whole twelve months of the year, always breathing the atmosphere created by those neglected manufactories and heaps of manure. It must not be supposed that the noble Duke and himself did not enter into the feelings of the manufacturers. No one could have visited the Pottery Works, over the river, and seen the wonderful articles sent from there to Philadelphia, without fully recognising how much good was done by these works. No one could say that because they suffered from the vicinity of a candle manufactory they did not appreciate the advantage of having bright lights and beautiful wax candles. Nor did they object to manure in its right place, but that place was not within a few minutes' walk of that House and of his own residence. What they complained of was, not that these things were done, but that proper care was not taken in the doing of them. Were they to believe that modern science could not find some remedy for these evils—that some of those gentlemen who were receiving liberal salaries for carrying on their researches could not find some way of at once preserving our health and carrying on the civilising arts in a flourishing manner among us? Manufacturers had no vested right to destroy our health in order that they might minister to the progress of the arts which they had introduced into this country. He hoped the inquiry would be granted, that it would be extended to the metropolis, and that as soon as possible legislation would rescue a large portion of the community from the evils under which it at present laboured."

The present Government took office as professed sanitary reformers—and they have been rather remarkable for the number of Royal Commissions which they have inaugurated. Hence it is with no surprise that we read that the Duke of RICHMOND, on the part of the Government, professed the greatest readiness to protect the poorer classes as much as possible from the evils in question—and also agreed to the appointment of a Royal Commission to inquire into the matter.

As to the manner of ensuring that manufacturers shall carry on their works with the least amount of injury to their neighbours, we can say nothing, but assuredly no Royal Commission is needed to establish the fact that great injury accrues to the health of mankind and of plants from the poisonous vapours that emanate from certain factories. If common everyday observation be not sufficient, there are Blue-Books containing the reports made under the Alkali Act of 1867, and doubtless many others which a little research would bring to light if necessary.

The Belgian Government have also had the matter under their consideration, and an abstract of their report will be found in Dr. ANGUS SMITH'S work, *Air and Rain*, reviewed in these columns in 1872. The work just cited contains much valuable information on the effect of noxious vapours on vegetation, drawn up from a chemical rather than from a botanical point of view. Direct currents naturally are found to be most injurious, and a distance of 2187 yards from the source of mischief is declared quite insufficient for protection in many cases. Naturally the effects are very varied, according to circumstances, but the effect may be approximately determined by observing certain test-plants, such as the Hornbeam, at various distances. The tree just named is the one which the Belgian Commissioners found the most sensitive to acid vapours, the Alder the least so. Curiously enough, the Plane is not mentioned in their list. It must be also remembered that individual trees of the same kind vary in the degree to which they are affected by the same cause. Among the varieties of Apple, Court Pendu-plat was observed to be sooner affected than other kinds.

While writing these remarks we perceive from the *Oswestry Advertiser* that the subject has lately been treated by Mr. MIDDLETON, head gardener at Wynnstay, before the Wrexham Society of Natural Science. Mr. MIDDLETON stated that the smoke sent forth from the numerous works in the neighbourhood had a disastrous effect upon vegetation. Numerous plants and trees in Wynnstay Park, including the "Bible Oak," were suffering from it, and there were many cases of death. Mr. MIDDLETON explained that the smoke coated the leaves and impeded respiration. He also said that thirteen or fourteen deer had died from the effects of the smoke, which in some places covered the grass with soot. The only remedy is the consumption of smoke.

We sincerely trust that the Government or the Commission will not waste time sifting well-established facts, but proceed as speedily as possible to the more needful task of providing an adequate remedy—or, still better, of ensuring sufficient prevention.

IT is almost too much to expect Vine growers to feel anything but disgust at the manners and customs of the PHYLLOXERA. Nevertheless, many of those whose breeches'-pocket interest or palate is not specially affected may feel an interest in the adaptation of means to ends, and that end the welfare of the insect. The habits of the insect and the structure of the root are indeed adapted one to the other in the same wonderful and beneficent manner that we see throughout all Creation.

The specimens of VINE ROOTS that we have of late received have enabled us to examine microscopically their structure. We have nothing new to record on this point; indeed, one of the fathers of vegetable physiology in this country, NEHEMIAH GREW (*temp.* CHARLES II.), has given in his *Anatomy* a large diagrammatic but, for the time, a very good figure of the appearances presented by a transverse slice of the Vine root, as seen when highly magnified. The structure is briefly this:—On the outside is a thick, corky rind, consisting of several layers of closely-packed cells—the outermost flattened, the innermost brick-shaped. These cells are of a brownish colour, and destitute of starch grains. Within this corky layer is a thick zone of ordinary cellular tissue, consisting of more or less globular or polygonal cells crammed with ovoid starch grains, and having also numerous needle-shaped crystals or raphides. This cellular zone surrounds the central cylinder of woody and vascular tissue, which is broken up into wedge-like masses by the intervention of the radiating plates of cellular tissue known as medullary rays.

The structure of the Vine root differs mainly from that of the stem or branch of the same age in the absence of the stringy layers of the bark (liber), and in the absence of the pith. So much for the structure of the root, which offers nothing that is not familiar to all observers of vegetable structure. The interest lies, as we have already stated, in the manner in which the insect avails itself of the advantages offered by the structures just described. The outer corky layer of rind which invests the roots is in the younger healthy fibre firm in texture and not unlike soft brown leather, but as the roots grow thicker and older this corky rind decays, dries up, becomes cracked on the surface, and thus offers admirable nooks and corners for the hibernating larvæ to pass the winter, or for the root form of the insect to conceal itself. When the insects resume their activity and feel the necessity for food there is the food close at hand in the starchy or rather sugary juices contained in the cellular tissue of the root. As the sap rises in spring, or under the stimulus of artificial forcing, the starchy matter stored up in the roots and elsewhere during the previous season, and which is insoluble, becomes converted into soluble sugar, which is used up as a food by the Vine in its growth, and which, as we have shown, affords the Phylloxera also the means of subsistence.

It may be well to mention here that the first knowledge we had of the insect in the neighbourhood of London was in the year 1863. It was not, however, till 1868 that Professor WESTWOOD first described the insect before the Ashmolean Society of Oxford. The Professor's account and figure was published in our columns on January 30, 1869—the first occasion on which the insect was described in any gardening periodical. Since that time, though we have heard of

FIG. 80.—THE GREAT WYCH ELM AT MOOR COURT.

and published accounts of isolated severe outbreaks of the pest in various places in Scotland, Ireland, and England, including Drumlanrig, we have not had reason to believe that the insect was extending its ravages very widely. It was in 1867 that the insect was first observed at Powerscourt by Mr. MALCOLM DUNN, now of Dalkeith, and his paper on the plans tried for the purpose of eradicating it was read before the Royal Horticultural Society, and printed in the *Journal* of the Society in 1872.

—— IN reference to the BEGONIA METALLICA, figured last week, we may add that it was also introduced to Kew in the year 1870, whence it has been from time to time distributed. It was new at the Herbarium when first flowered, but did not receive a name. The plant is mentioned in Mr. BULL'S Catalogue for 1873.

—— The grand and remarkably well-grown and symmetrical WYCH ELM here illustrated (fig. 80) grows in "the Paddock" at MOOR COURT, near Kingston, Herefordshire. It is believed to be the largest Wych Elm in the county, and at 5 feet from the ground it measures 19 feet in circumference. It keeps its central trunk high into its growth, and the branches droop well on every side, as is the wont of this graceful tree. The massive columnar trunk being in shade in our illustration, the remarkable northern buttresses which belong to the tree are only imperfectly seen. For a detailed and illustrated description of Moor Court, the residence of the Rev. JAMES DAVIES, we cannot do better than refer our readers to the *Gardeners' Chronicle* for February 6, 1875, where the more notable trees of Moor Court are described. An illustrated paper on old and curious Wych Elms, from the pen of Mr. EDWIN LEES, of Worcester, will be found in the *Gardeners' Chronicle* for July 25, 1874.

—— At no previous time have we seen the interior of the CRYSTAL PALACE so bright and gay as it is at present. Mr. THOMPSON, the present Superintendent, has only had charge of the interior about twelve months, but the permanent plants have improved in a marked manner under his supervision, while the ordinary decorative plants now doing duty there are as fine as could be desired. This is perhaps the most enjoyable time of year to pay a visit to the Palace, so

fresh, genial and springlike is the interior of the huge structure as compared with the external temperature. Visitors to the Palace, of a gardening turn, should not come away without seeing a delightful little fernery on the left-hand side of the central transept, near the end leading to the aquarium; and another horticultural object of considerable interest is the grand screen of Ruscus androgynus, some of the growths of which have attained a height of nearly 40 feet. The plants are now in flower, and doubly interesting on that account. While at the Palace, a few days ago, we had an opportunity of inspecting the stock of plants being got ready for bedding out, and which are of such an excellent description that if the season is anything like favourable we may expect Mr. THOMPSON to eclipse his former efforts in this style of decoration.

—— With reference to the report of what passed at the Linnean Society on the occasion of the discussion on Professor DE BARY'S views as to the POTATO FUNGUS, it ought in justice to the learned Professor and to his lucid exponent, Mr. CARRUTHERS, to be stated that we gave nothing but an extremely condensed account of what Mr. CARRUTHERS stated. Professor DE BARY'S paper, which is very lengthy, and necessarily technical, published in the recently issued number of the *Journal of the Royal Agricultural Society*.

—— With all the richness and variety of deciduous trees at their disposition, planters in this country have hitherto done little in the way of increasing the number of species commonly planted for profit. Excepting the Sweet Chestnut we do not call to mind any exotic species generally planted in the South. We remember that some North American trees have been tried, with discouraging results, but the number has been by no means exhausted. The Germans are making experiments with various North American species, to ascertain their commercial value. Indeed, much more attention is bestowed upon deciduous trees and shrubs in Germany than here, probably because a large proportion of the evergreens that succeed with us will not endure the more rigorous winters of the Continent. At Wörlitz and elsewhere large plantations of the Tulip tree have been made, and at a recent meeting of the Berlin Horticultural Society one of the subjects under consideration was the value of the Hickories for planting in the forests of North Germany, and the best means of rearing them on a large scale. These trials are in their infancy, so very little is yet known as to the value of these trees for planting in Germany beyond the fact that one species, which NÖRDLINGER calls Carya alba—though it looks from the cut given more like C. amara—has borne fruit two years in succession. Trees of this species (whichever it may be), less than forty years of age, growing in the neighbourhood of Hohenheim, were upwards of 40 feet in height in 1869; but this is probably the fastest growing species of the genus. The wood of the Tulip tree is said to be used in the gun factory at Spandau. It seems to us that much remains to be effected in this direction; in fact, we may say that next to nothing has yet been done.

—— In the March number of the *Gardener* the Editor remarks that, while LADY DOWNE'S GRAPE has usually a thick skin, and is deficient in flavour, yet when grown under the influence of as much light and air as it could possibly be subjected to in this country, in a large house, with a maximum of glass and a minimum of woodwork, the Grape in question assumes a thin skin and an excellent flavour—in fact becomes a rich sweet Grape, with comparatively a thin skin devoid of toughness.

—— Among hardy plants suitable for pot culture at this season of the year what can be more attractive than the lovely PRIMULA MARGINATA, the leaves having a dense bed of white meal on their edges? The flowers are of a beautifully soft violet-rose colour, produced in charming clusters. It is easily cultivated, and is even an attraction without its pretty flowers.

—— A SEED AND NURSERY TRADE ASSOCIATION has lately been formed in Scotland, the main objects of which are:—"1st. To hold annual meeting of the Association, at which members may bring forward any matter of importance, notice of same being given to the secretary one month before the said meeting. 2d. That it shall be competent for members to lay before the committee, through the secretary, any case in which they may feel themselves aggrieved, or laid open to vexatious claims in respect of complaints of the growth of seeds, failures of crops, &c., and the committee shall advise as to the best course to pursue, and if need be obtain counsel's opinion in the case. 3d. To use all endeavours to check and put down the vending of adulterated and falsified seeds of all kinds, either in this country or abroad. 4th. To watch over the interests of the trade in any legislation that may be proposed affecting the same." The annual subscription has been fixed at one guinea, and the officers appointed for the ensuing year are Mr. DAVID ROUGHEAD, Chairman; Mr. DAVID CROSS, Vice-Chairman; and Mr. R. T. MACKINTOSH, Secretary and Treasurer.

—— We are informed that Mr. HENRY ORMSON has received instructions to build, from his own designs, a fine range of iron and glass structures at LISBON, for the ROYAL BOTANIC GARDEN and Polytechnic Institution.

—— Our attention has been directed by Mr. B. CLARKE to the valuable results obtained by the use of fresh BURDOCK ROOTS (Arctium Lappa), in the form of infusion, in inveterate skin diseases. The subject is altogether one for a medical paper, and we should not have alluded to it but for the circumstance that Mr. CLARKE also mentions that in Japan the stalks of the leaves of this plant are used as a vegetable under the name of "Gobo." It appears that the Japanese also use the seeds in cases of skin disease. Mr. CLARKE, whose address is Mount Vernon, Hampstead, will forward some of these Gobo seeds on receipt of a stamped envelope. We have no opinion to give on the medicinal virtues of Burdock, but we think it very probable that Burdock cultivated for the purpose would yield a succulent, easily-grown vegetable. It may be, or was to be, seen growing at Chiswick.

—— Mr. JOHN BISSET is about retiring from the management of the gardens at Croxteth Hall, Liverpool, the seat of the Earl of SEFTON, in favour of Mr. BARHAM, of Warfield Park, one of the seats of Lord ORMATHWAITE. Mr. BISSET has been at Croxteth upwards of thirty years, and, in addition to the garden, has had charge of the extensive plantations and roads, which less arduous duties he still retains. We are pleased to bear that the Earl of SEFTON has treated his old gardener, on his retirement, in a very handsome manner.

—— As will be seen by our advertising columns, the WITHINGTON COLLECTION OF STOVE AND GREENHOUSE PLANTS is to be sold by auction on the 19th and 20th of the present month. The plants are so well-known from their frequent appearance at the principal shows in the kingdom that we need not say they are amongst the finest examples of skilful cultivation that have ever been produced. Not only are the large specimen exhibition plants to be sold, but also a quantity of half and quarter specimens, all in the finest health, affording an opportunity to buyers of both large and medium-sized plants.

—— Our readers will doubtless remember that we have before referred to the Gourd called Zapallito—CUCURBITA ZAPALLITO, and Cucumis zapallito—introduced from Brazil, and cultivated in France since about the year 1872. In a communication to the French Society for Acclimatisation one of the members gives the results of his trial of this "delicious Gourd." It is said to be of the easiest culture, and those who have now grown it several years in succession speak very highly of its value as a vegetable. The fruit attains about 2 feet in circumference. In a young state it is an excellent ingredient in a salad; but for cooking in gravy, &c., it should be allowed to become quite ripe, when the flesh is farinaceous, sugary, and succulent. The ripe fruit keep sound, and are as good eating in the month of February as when fresh cut.

—— The *Monatschrift* (Berlin) for February announces that the future meetings of the VEREIN will be held in the buildings of the Agricultural Museum, 26, Schützenstrasse. We may briefly refer to some of the more interesting subjects discussed at the recent meetings of this body. The question of the best mode of labelling standard trees seems to have been best met by M. SPÄTH, who recommended small hanging labels attached with stout galvanized wire, thereby reducing the action of the wind to a minimum. He had long had them in use in his nursery, and observed that they remained legible for ten to fifteen years. Respecting the possibility of grafting the varieties of the Japanese Maple, Acer polymorphum, on the common A. monspessulanum, Dr. WITTMACK remarked that in all the cases which had come under his observation it had proved unsuccessful, not only with this species, but also with all of our other hardy ones. Dr. KUHN exhibited specimens of a new Tree Fern from Johanna, one of the Comoro Islands, on the east coast of Africa. It is a species of Alsophila, which he calls A. Hildebrandtii, after its discoverer, making the third species of the genus known to grow in these islands. Dr. KUHN also alluded to the very small proportion of species of arborescent Ferns in cultivation, amounting, according to his statement, to only about one-sixth of the known species even in the relatively rich collection at Kew. Dr. WITTMACK showed a photograph of a splendid flowering specimen of Tillandsia argentea, a plate of which is promised in an early number. This handsome plant produced flowers for the first time in Germany last summer in the gardens of Prince FÜRSTENBERG, at Donaueschingen. Garden Inspector BOUCHÉ, reporting on experiments with American Cranberry, Vaccinium macrocarpum, strongly recommends it for general cultivation, as it will flourish in a variety of soils. He calculates the crop at the rate of 20 to 30 bushels per *morgen* (about 1½ acre), worth about £26 to £36 after deducting cost of production. This number also contains a list of the flower and vegetable seeds to be distributed gratis to the members of the Union, and also an article on raising various species of Hickory, and their value as forest trees in North Germany. A new feature of the *Monatschrift*, commenced this year, is a series of paragraphs on gardening operations for the month, confessedly adapted from our model.

—— We have received a capital paper, entitled *A Few Suggestions on Tree Planting*, from the pen of Professor SARGENT, Director of the Botanic Garden and Arboretum at Harvard (Mass.), and calling attention among other things to the consequences of the destruction of American forests. We shall hope to find room for some extracts from this valuable paper hereafter.

—— We have had a good many Apples through our hands lately, but, with the exception of Winter Greening, very few were in good condition. Such a remark, however, would not apply in America, for we find in the *Gardeners' Monthly* (with which the *Horticulturist* has lately been incorporated, though the *Monthly* was good enough before!) that the Americans could certainly keep the English market in Apples till the Strawberry season comes in.

—— Since the meeting of the Linnean Society, of which a report was given in the *Gardeners' Chronicle*, March 25, 1876, Mr. SMITH has forwarded to me several slides containing specimens of the organisms he found at Chiswick in 1875. Having examined them very carefully, I think it but justice to state what I have observed. 1. The oogonia seated on thick, often flexuous threads, with a septum beneath the oogonium which is sometimes carried far down the thread. 2. Many instances in which the oogonium is produced in the middle of the thread, with a septum at either end, calling to mind the figure of MONTAGNE'S Artotrogus. In several instances a process terminated the oogonia, as if the thread was to be produced so as to leave the oogonium in the centre. 3. In one oogonium I found an echinulate body, quite as strongly echinulate as in the best specimens of Artotrogus. 4. The so-called antheridia produced on delicate threads, quite distinct from those of the oogonia, and not separated by a septum. The form of the antheridia is exactly what SMITH has figured. 5. The antheridia in contact with the oogonia, in one instance the wall of the oogonium being perforated, as if by the act of impregnation. I cannot, however, speak more positively on this point. 6. Abundant Peronospora; threads and spores mixed with the oogonia and antheridia. Of course Mr. SMITH'S interpretation of what he has seen is subject to criticism, but his good faith is so far confirmed by his specimens that criticism should be very guarded

and gentle. If I may express my own opinion, I believe that all these objects belong to one category, and if so, I should be ready to receive De Bary's Phytophthora (plant-pestilence) as a good genus, differing in several respects from Peronospora. *M. J. Berkeley.*

—— We understand that Mr. John Halloran, of Hylands Park, Essex, where he has been for the last eighteen years in the employment of Arthur Pryor, Esq., as gardener and steward, has retired into private life. On leaving Hylands his highly-esteemed and kind-hearted employer and family, in order to mark their sense of his long and faithful services, presented him with many tokens of the esteem in which they held him.

THE COMMON HOLLY AND ITS VARIETIES.—X.

C. Leaves Gold-Variegated.

§ Spines marginal, numerous, strongly developed.
** Spines plane, not divaricate.
† Leaves gold-edged.
‡ Leaves large, 2½—3 inches long

122. I. A. aurea marginata stricta; stricta aurea marginata, Lee (fig. 83).—This variety belongs to the purple-barked series. The leaves are oblong or elliptic, 2½ to 3 inches long, of a dark green colour with broad streaks of gray running parallel to the veins, and with a definite and tolerably regular edge of pale straw-yellow. The spines are bold but irregular, and lie in the plane of the leaf, and they appear always to stop more or less short of the base.

Fig. 81.—I. A. cookii.

‡‡ Leaves medium-sized.

123. I. A. aurea marginata pallida, Lee.—A green barked variety. The leaves are ovate, with weak and irregular spines, which are nearly or quite plane; they have a mottley green centre, with a narrow greenish-yellow border towards the base, merging into a broad yellow border at the apex.

124. I. A. aurea serrata, W. Paul.—Like the last, not a very strikingly marked variety. The bark is dark purple, and the leaves are ovate, the spines nearly or quite plane; the disk is much mottled and is surrounded by a broad creamy yellow edge.

125. I. A. aurea levigata, W. Paul.—Another purple-barked sort, with elliptic leaves, the spines of which are unequal, few, and nearly or quite plane; the disk is dark green freely mottled with yellowish blotches, which frequently occupy more than half the surface, and there is a distinct yellow margin of moderate width.

126. I. A. Cookii, Smith (fig. 81).—A neat looking Holly, furnished with purple bark. The leaves are ovate, flat, with distinct and rather weak spines, very dark green, with a narrow edge of greenish yellow, and some central blotches. In the specimen before us the point of the shoot has "run out," producing lanceolate more strongly and densely spined leaves, which are entirely green.

127. I. A. aurea marginata ovata; angusta marginata, Lawson (fig. 82).—This is a very distinct and desirable variety, but to which the name of "narrow-margined," received with it from the Lawson Co., does not well apply. It has the bark of the young wood reddish brown. The leaves are ovate, with strongly developed and tolerably regular plane spines; the disk is mottled green and grey, and there is a broad pale yellow edge. The broad outline of the leaves and their strongly spiny margin, together with the amount of coloration, renders this a very desirable variety for ornamental plantations.

Fig. 82.—I. A. aurea marginata ovata.

128. I. A. aurea marginata bromeliæfolia; bromeliæfolia aureo-marginata, Smith (fig. 84).—We are quite unconscious how the name which we received with this variety is made to apply to it, unless it be that the ovate outline of the leaf somewhat resembles the form of a pine-apple; it is certainly not pine-apple-leaved in any other sense. It is one of those having the bark purple. The leaves are ovate, with flattish distant marginal spines, and a flat acutely-lengthened point; the disk is mottled with pale green on a dark green ground, and the margin has an unequal but well-defined band of yellow, the prominent apex being conspicuously yellow. It is a neat-looking variety.

‡‡‡ Leaves small.

129. I. A. aurea angustifolia, W. Paul.—A small-leaved sort, with dark purple bark, and lanceolate or lanceolate-oblong leaves, the disk of which is streaked with greyish green on a dark green ground, and narrow and irregular band of pale yellow occupying the margin, which is furnished with spreading spines, lying nearly or quite in the plane of the leaf.

130. I. A. aurea marginata salicifolia; salicifolium foliis aureis marginatis, W. Paul.—This has the leaves very small—about an inch long and one quarter of an inch broad, lanceolate, and plane-spined; the disk is green streaked with a few lines of grey, the spines and narrow border being yellow, while the whole tip of the leaf and frequently half the surface is also yellow. It has the bark of the young shoots of a dark purple, which contrasts well with the golden hue of the foliage, and is a particularly neat and elegant variety. *T. Moore.*

Fig. 83.—I. A. aurea marginata stricta.

Home Correspondence.

Cattleya dolosa.—This Cattleya [described by Professor Reichenbach, and figured in another column] bears a great resemblance to Cattleya bulbosa or Walkeriana; in fact, it has the appearance of being a very vigorous variety of that species. It grows from 8 to 10 inches in height, bearing sometimes one, and often two very oval-shaped leaves on the summit of the glossy pseudobulb. One of the chief distinctions between the Cattleya dolosa and C. bulbosa is in the mode of exhibiting the flower-spike. The former bears flowers which spring from the apex of a normal growth, whereas the latter always, or nearly so, flowers from a very diminutive bulb, almost approaching to a mere stem. The flowers in C. dolosa are also much larger, more perfect in form, and brighter in colour, but still very similar to those of C. bulbosa. The Cattleya in question was introduced by Mr. Linden, of Ghent. The first plants that were distributed, as far as my knowledge goes, were sold at Stevens' auction-rooms as probably the then new Cattleya Jongheana, which has a similar appearance, as far as a cursory glance at the plants would indicate. But C. Jongheana is a totally different species, and is easily recognised by its olive-green pseudobulb without a joint or mark around the centre of the bulb. The subject of the illustrations given on pp. 428, 429, has not until now had the good fortune to be lawfully named, but it is well known under its nursery label distinction of C. Minas, and is a very desirable addition to the collection of cultivated Cattleyas. This plant grows freely in sphagnum moss, if hung in the roof of the house near the glass. *W. Denning, Londesborough Lodge, Norbiton.*

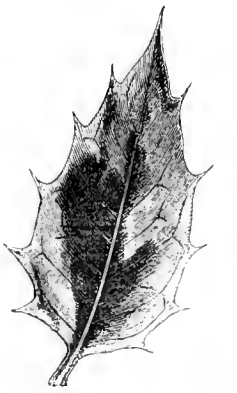


Fig. 84.—I. A. aurea marginata bromeliæfolia.

Spring Flowers.—Wild flowers have put in an early appearance this spring in some parts of Hampshire, for, despite the snow that fell so heavily last week, I saw on the 25th several spots in the neighbourhood of Hadley to which old Chaucer's lines—

> "There sprange the Violet al newe,
> And fresh Pervinkle rich of hewe,
> And flouris yellow, white, and rede,
> Such plente grew there ner in mede"

—were very appropriate. There were Primroses and Violets, the pretty Wood Anemone, and purple Periwinkle, enlivened by the brilliant yellow bloom of the Celandine, intermixed with the graceful green leaves, slender trailing stems, and delicate flowers of the Potentilla fragariastrum, which some people will insist is the true wild Strawberry. By the way, one or more botanical works give June and July as the period of this little plant's blossoming; but this must surely be a mistake, for I have always seen it early in March. I saw both the Cowslip and the Oxlip in bloom fully a fortnight ago, but both were growing in a garden hedge, not in pasture lands, so I suppose I ought to consider them as partly cultivated plants, not wild flowers. *Helen E. Watney, Berry Grove, Liss.*

Spelling the Word "Potato."—I think you will agree with me that twopence a week at a charity school could not fairly be considered as a lavish expenditure on education, at least our School Boards don't think so, but when I was a boy our worthy old schoolmaster taught us to spell Potato without an ultimate letter "e," and in the plural Potatos, excepting always when reference was had to two or more varieties, when he insisted it should be written Potatoes to signify the difference. I am at a loss to give any sound reason for this; it appears to me pretty much of a logograph, nor do I at this distance of time remember on what authority he based this line of tuition: but this I do know, that in speaking

of the numberless varieties sent flooding the country during the past few years it can be safely said "*Rari quippe boni.*" *G.*

Hardy Palms, &c.—After your editorial remarks it is almost superfluous for me to answer Mr. O. Lloyd's question regarding the size of the Palms at Heckfield; still, I may supplement your statement by saying there are two plants over 9 feet high. With regard to my former letter being "foreign to the subject," I beg to remind Mr. O. Lloyd that he himself must surely have been a good way off the mark, when (according to his own showing) the whole question may be asked in two lines. If Mr. O. Lloyd is disposed to split straws about the 2 or 3 inches short of 10 feet, he is quite at liberty to do so. *A. S. Kemp.*

Trapping Mice.—Your advice to "C. N. D." at p. 407, how to take mice, is, I submit, from long personal experience and also directions to my gardener, not the best, which is in my humble opinion to use large sized wooden kill-traps. Those generally sold with circular openings are too small, and these openings should be oblong, say 1½ to 1¾ inch high, and 1 inch broad; they should have a piece of wood attached to the wire inside the hole, and be baited with Hemp seed. There is nothing equal to Hemp seed as a bait. Many of my gardeners have been surprised at the success of this description of trap with Hemp seed, as the mice, both house and field, go to it in preference to the peas, cheese, &c. The setting of the trap should be light-handed, as eating the loose Hemp seed is not like gnawing at a piece of cheese. I have found the round-holed traps not large enough to afford of sufficient action in the piece of wood attached to the wire-catch for the mouse to move it enough to set the trap off. If set outside, the trap should be covered with a large slightly propped-up pan or small box, otherwise the rain will swell the wood, and robins, &c., will be caught and killed instead of the enemy, entailing extra trouble, &c. This kill-trap also has a great recommendation to its use on the score of humanity, as other traps which do not kill are often forgotten and the mice are left to die of starvation. The Hemp seed is best kept handy and safe in a small round tin cannister. *W. A. Wooler, Sodberge House, March* 25.

Artotrogus and Peronospora.—In your notice of the discussion at the Linnean Society on the fungus producing the Potato disease, your reporter has not correctly represented (p. 403) what I said. The spores of Artotrogus are sometimes found "*medio filo inserte*," and they so appeared in the diagram—copied, I believe, from one of De Bary's drawings—which was shown at the meeting. Such a spore cannot have anything to do with the oospore of Peronospora (or Phytophthora) infestans, because that is produced by a rounded cell or oogonium, which always terminates the mycelial filament which bears it. Instead, therefore, of objecting to Artotrogus because it *is* terminal, I object because it is *not* so. *W. T. Thiselton Dyer.*

Fruit Prospects in East Anglia.—Up to last night (March 21) the prospect was good. Peaches and Apricots on our walls have seldom looked better or more full of fruit; the latter on western and southern aspects were also in full flower. The weather for some weeks has been trying; rains, snow, hail-storms, frost—these have been the general characteristics, with various modifications as to the time that either held its supremacy. On the morning of the 21st we had a severe white frost: during the day and throughout the evening there were symptoms of the weather giving; almost or before midnight these symptoms vanished, the clouds rolled away, the stars shone out with a frosty lustre, and the thermometer ran down to 22°. The result is that the whole of the prominent blossoms on Peaches and Nectarines under glass copings are black and the embryo fruit wrecked. Possibly there may be a crop from those sheltered by the branches and closer to the wall, but this is doubtful. Plums are so late as to be safe as yet. Pears, which seem to have far fewer blossom-buds than usual, are, with few exceptions, so late as not to be injured much it is hoped: a few of the earlier trusses seem, however, to be blackened through to the core. Apples are generally much fuller of fruit-buds than Pears, and are safe as yet. The frost seems to have had an unusual power on vegetation, arising chiefly from the sodden state of the earth. Lettuces and Broccoli have been severely cut, and even Violets and early Forget-me-Nots have been cut down or blackened through alike in leaf and flower. The March frosts will, from their lateness and severity, it is to be feared, leave their marks on the fruit and other crops of the coming summer. The winter, though not severe, has been a long and trying one. The excessive rainfall and evaporation have combined to keep vegetation late, and yet the fruit crops will, we fear, prove too early for their safety. The treacherousness of the weather almost every spring bears severely on the growers of superior hardy fruit, whose prospects are all too often blighted in a cold night or two in March, April, or May. *D. T. Fish.*

The Cucumber Disease.—I send for your inspection a small box containing two small Cucumbers and foliage infested by what is commonly called the Cucumber disease. I once saw it battled with for three years in some very extensive gardens. We had seed from here, there, and everywhere, and tried to grow them in nearly every house and pit on the place, but, no matter where they were, disappointment was sure to follow; they never attained a larger size than those I have sent. I have grown Cucumbers here for nearly seven years with great success, but now my plants have fallen victims to what I trusted I should never set eyes upon again. If any of your correspondents can inform me how to get rid of this troublesome disease I shall only be too pleased to follow their advice. *C. Bloxham, Brickhill Manor Gardens, Bletchly, March* 24.

Syringing Peaches in Flower.—I am sorry that my remarks on this head should have elicited such a reply from Mr. Miller (p. 403). If I have wounded him, I am sure he furnished me with the weapon. I put no construction upon his former remarks other than the legitimate one. Though I can believe his words did not exactly convey his real meaning, no one could put any other construction upon them, than that he had not been a "setter with the syringe" before 1871. Consequently, when I read that he had been operating in that line for twenty years, and that, if his "memory failed him not," he thought I used the syringe also: remembering, also, what he had previously stated, and that he had not uttered a word, so far as I knew, on the subject until I did, I certainly felt some surprise. So I took the liberty to remind him of the apparent inconsistency, in his preaching at least, if not in his practice; and as I left him a fair loophole of escape in simply putting myself right, I think his rather sharp personalities are hardly called for. *J. Simpson.* [The matter had better be allowed to drop now each has had his say. Eds.]

Mice and Peas.—Just lately, the mice having been more troublesomee than usual amongst the Peas, I have tried the effect of short lengths of stout string dipped in tar, and laid in a line along each side of the row, and at present it preserves them perfectly. The tar used was not heated, but in the half fluid state in which the strings can be pressed into the clammy mass, and drawn out again very thickly and lastingly coated, and the strings or thin wands, being only a few feet long for convenience of handling, may be moved an inch or two the second day, and a double fence thus gained from the tar which will have run on the ground, thus adding much to the perplexities of the mice in getting at their prey. The Peas attacked being of a particularly choice kind, which the mice appeared to have concentrated their energies on, some method of present defence to the whole rows, rather than the slower though more effectual method of trapping the marauder, was requisite, and the suggestion may possibly be of use just now in some similar case. Ochre laid in powder in lines, about 6 inches from the row of Peas, appears also to answer very well, and can similarly be applied to meet a sudden difficulty. *O.* [The cat-plan figured in our columns for 1872, p. 1556, is very efficient, as the wire to which the cat is affixed can be shifted when necessary. Eds.]

Limestone as Fuel.—Your readers will, I think, be nearly tired of the subject, but a lady asks about the use of limestone in smelting iron. Certainly it is not used as fuel there, but only as a flux; a certain quantity of lime is needed to combine with the silex and alumina to form the slag and set the iron free; if the ironstone does not contain that quantity it has to be added. No more is used than is necessary for this purpose. The whole thing is simple enough without going into carbonic oxide and units of heat. In burning lime, carbonic acid and water are driven off. Both these take with them a quantity of heat as latent heat. The quantity which the water takes is shown by the quantity of heat given out, when water is added to the fresh burnt lime. All this latent heat can only come from the burning of the coal. If the same quantity of coal were burnt without the limekiln this heat must either go into the houses to be heated, or up the chimney. It may in general go up the chimney, and a good deal more also, and the lime may retain some for the use of the houses which would otherwise be wasted; but no one who knows anything about heat can doubt that it must be as I have stated it. *C. W. Strickland.*

The First Day of Spring: March 28.—After a peculiarly trying and long winter, there is a feeling to day as of spring in the air. The wind has veered round from east to west, and the thermometer stands at 55° in the shade. Seldom has the promise of spring been hailed with more pleasure, or proved more welcome; and it would seem that the old adage of "March coming in like a lion and going out like a lamb," is likely to be once more verified. The recent severe frosts have, however, left the marks of March frosts deeply imprinted in many a tree's barrenness for the summer. Apricot blossoms were blackened by millions, and many blooms of forward Pears and Peaches were frozen through and through; Pears are also very scant of bloom in many localities; Apples and Plums promise well, but the birds are wonderfully busy on the latter, as they always are after severe frosts. Does the frost sweeten the buds, and so render them more tempting? Or has it cut off other sources of bird food, and so made them more attentive to the buds s Be the cause what it may, the bullies and chaffinche? are remarkably active on Plums and forward Apples at present. *D. T. Fish.*

Earth-Closet Manure.—In the last issue of the *Gardeners' Chronicle* the Rev. Mr. Moule, writing on his pet subject of "Limestone as Fuel"—the fallacies of which he fails to observe, in spite of the discussion to which it has been submitted in your columns—appends some remarks on the well-known "dry-earth system," the working out and publication of which have, as he reminds us, occupied the greater part of his leisure hours during twenty years, and with which his name has become justly and honourably associated. Of the sanitary value of the earth-closet system, particularly in villages or out-lying houses, there can be no shadow of doubt, and that the "spent" earth is a useful manure in its way is also beyond question; but there are limits to its use, as has been pointed out over and over again in the "scientific declarations" of which Mr. Moule so sadly complains. The said "declarations" have been founded, not upon any conservative prejudices, but upon plain, unvarnished facts, furnished by numerous and independent analyses. I have myself repeatedly analysed samples of earth-closet manure, the results I have obtained invariably confirming the opinions expressed on the subject a few years ago by Dr. Voelcker in the *Journal of the Royal Agricultural Society.* Mr. Moule tells us that this manure "has converted many a piece of waste land into a fruitful farm or garden," and there is no reason for a moment to doubt his statement. If you have your farm or garden close to your door, and have a large supply of the manure to deal with—say, from a neighbouring institution—it may be applied to your plants or crops with indisputable advantage, and may (if you use enough of it) even in time convert a barren into a productive soil. But—and here comes the fatal objection—if you have to carry your manure to a distance before using it—if you have to pay the cost of cartage or transport by rail—then it is that you begin to lose money and convert that which nearer home might be a source of profit into a source of loss. We all know that there is no more perfect manure than farmyard manure, if we can get a sufficient supply without going too far away from the farm to look for it. It is, like earth-closet manure, a bulky article, containing its valuable ingredients in a state of diffusion throughout a mass of comparatively useless matter. But few large farmers make anything like sufficient farmyard manure to carry them through the season, and they make up the deficiency by importing artificials which contain the necessary ingredients in a concentrated form, the carriage per ton for a given distance amounting to no more than that on a ton of farmyard manure, or of the still less valuable earth-closet manure. This is why earth-closet manure can never become an article in demand among the farmers. It does not pay its own carriage for more than a few miles, and must, therefore, be "consumed" where it is produced, or it becomes, if not an incumbrance, at all events an article of less value than common earth. The history of the progress of the dry-earth system does not, as Mr. Moule seems to suggest, furnish in any way an instance of the "opposition of science to facts." It does not surely follow that because a certain manure can be used with advantage only in such and such a place that it is to be set down as valueless; and I venture to think, if Mr. Moule will turn with a more impartial eye to the "oft-repeated scientific declarations" to which he alludes, he will own that, in some cases at all events, he somewhat too hastily generalises statements, the qualifying clauses in which he overlooks. *Bernard Dyer, F.C.S.*, 32, *Burghley Road, Highgate Road, London, N.W.*

A Good White Camellia.—We have in Camellia Comtesse Callini or Caleani, a small white flower which is at once very useful and pretty. It is about the size of a Eucharis flower. The leaves are small in proportion, long, and narrow. M. Ambroise Verschaffelt sent it in a collection, and it is certainly a favourite. It has a nice habit, a bushy, pyramidal, flexible growth, and the plant of 3 feet high had more than thirty flowers on it first and last, showing

at once the free-flowering tendency it has. Some time ago the single Camellia was called for: may we not introduce this little double Comtesse in preference to the single? It looks to be a very promising kind for the bouquetist. *K.*

Rhododendrons.—Rhododendron Countess of Haddington is this year unusually high-coloured, and beautifully tinged with a delicate mauve. I can only account for it by its being potted in loam last year, and previous to that it was growing in peat and leaf-mould with river-sand in both cases. I noticed also last year that, of two plants of R. Dalhousiæ, the one in peat was a lighter shade of straw-colour, while the one growing in loam was of a deeper colour, approaching to yellow. R. Dennisoni is very pretty as a standard, with fringed rose-striped flowers. This, like the two foregoing, naturally acquires a standard habit, and is remarkably handsome at this season when in flower in company with the Countess. It is a pity R. Dalhousiæ does not flower at this season in company with them, for its beauty would last longer now than when the sun is hotter. All these Rhododendrons of the Indian blood require an abundance of water, as they make their growth simultaneously with flowering. *K.*

Limekiln Heating—What has become of Mr. Wadds, the Gardens, Moor Abbey, Monastereven, who in *Gardeners' Chronicle*, December 25 last, promises "in a few weeks to give a truthful twelve months' experience of the limekiln system of heating, when your readers will be able to judge for themselves how far it deserves the name 'compensating.'" I believe the public generally would place more confidence in the result of one year's practical experience than in the hasty although eloquent decisions of those who speak and act from impulse, or of those whose deductions, although arrived at with mathematical correctness, are based on purely scientific theories. I think in a matter of such importance to horticulture as heat without cost, those who can speak from experience should not withhold their knowledge. Let them give the first cost of limekiln and apparatus, and the result of one year's trial from a £. *s. d.* point of view, and we shall have had the subject tolerably well ventilated. To a great many who like myself live in a limestone district, it is of the utmost importance that we should have actual results from disinterested parties to judge from. *J. T.*

The Setting of Peaches, &c.—These fruits, which constitute the staple of most houses, are largely benefited during their period of bloom by daily gentle shaking of the branches so as to liberate the pollen. That this is not unimportant I had myself a convincing proof last season, for, being unwell, I left the care of the houses to others, who, neglecting this matter—probably despising such mild measures—and besides, not increasing the supply of water at the roots at this season, the crop of Peaches and Nectarines was about 1000 less than the average of twenty years. My ordinary practice is to gently shake the standards to and fro some dozen times (all at once, of course) daily, and in the case of espaliers or wall cordons to strike the branches with the hand. The results have been so uniformly good that it is not unreasonable to have faith in the process. Some employ a pole to strike the upper branches; this is also a good way. We do not use the syringe until the fruit swells, for if the roots be well watered during this demand on the tree's vitality, the surplus evaporation is sufficient for all purposes. However, no Peach grower should mind extra watering; I believe that, under glass, they take in any amount while in leaf and the fruit is ungathered. Then diminish the supply by slow degrees to nothing, for their period of rest, giving some extraordinary drenchings occasionally before this. *Thomas C. Bréhaut.*

The Phylloxera at Elvaston.—There is no doubt whatever about the Phylloxera having been at Elvaston, and that it destroyed two lots of young Vines in the same house about the years 1868 and 1869. Mr. Brown had charge of the gardens then, and to him the credit is due of stamping out the pest, without the assistance of any one; therefore I cannot see what Mr. McKellar has to teach us about the destruction of the Phylloxera, as the place was quite clear of it before he came to Elvaston. Neither is it very mysterious how it disappeared, as from what I can see, very severe and effectual measures were adopted for its destruction. Now as this vinery is in a range with no partitions between the borders, the advantage of removing both Vines and soil on the first appearance of the Phylloxera is obvious; had this not been done immediately, the whole range of Vines would doubtless have been destroyed, instead of which, as Mr. McKellar states, they are improving every year. Respecting the pot Vines which Mr. McKellar has alluded to, I may add that they were the best I ever saw. Some time ago there was a discussion in this paper about pot Vines producing the same weight of fruit as the soil they grew in, which induced me to weigh the produce of one of these Vines and the soil it grew in; the result was 3 lb. more fruit than soil—the fruit weighing 37 lb. and the soil 34 lb. when moderately dry. *J. H. Goodacre, Elvaston.*

Camellias: Lily of the Valley.—What kind of treatment do Camellias require to get them to bloom at Christmas? They are now beginning to make their growth: why do they lose their buds? Mine have all dropped off. What is the treatment of Lily of the Valley to bloom at the same time, and why do they throw up their blooms without leaves? *G. D.* [Camellias that are now starting, and are required to flower at Christmas, should be at once placed in moderate heat—50° to 55° in the night, with 10° or 15° higher in the day, will answer to commence with—and encouraged to make growth by plenty of water to the roots and syringing freely overhead when the house is closed in the afternoons, shading slightly when the sun is powerful. Continue this treatment until they have set their flowers, when the use of the syringe may be discontinued; give them more air and less water at the root. They must be kept in heat till the flower-buds have attained a considerable size. The time at which they will arrive at this stage will of course depend upon the temperature the plants are kept in; but it is not well to keep them too hot, although, as the season advances, it will necessarily rise higher both day and night. When it is judged that the buds are sufficiently advanced to come on of their own accord into flower at the time desired in a cool house, they must be taken out of heat, but should not be turned out-of-doors exposed to drenching rains, which often is the cause of the buds falling afterwards through the winter, as complained of. This more frequently occurs through the plants being weak and deficient in roots and foliage, or through an attempt to hurry them into bloom by heat at the end of the year, or with keeping the atmosphere too dry, or allowing them to become dry at the root: any of these conditions will cause the buds to drop. For flowering at Christmas I should advise good strong imported German grown roots of Lily of the Valley; their hot summers mature the growth early: pot them as soon as received. A month or five weeks before they are wanted plunge them in a well sweetened bed of dung and leaves, at a temperature of 75°, covering the crowns over a couple of inches with the material; watch them closely, and as soon as the tops have sprung a couple of inches remove them to a moist house or pit, where they will have 65° of heat in the night and 5° higher by day. When moved from the bottom-heat the tops must be very gradually inured to the light, as with Hyacinths that have been plunged; as the leaves get green give more light, and all along tepid water to the soil as required. There are several causes that prevent these plants when forced pushing their leaves kindly or at all, and sometimes the flowers also are affected the same way. If the roots have been taken up before they were properly matured, forcing in strong top-heat before any movement has taken place at the root or sudden exposure of the leaves to too much light just as they begin to spring, when the roots have been plunged in bottom-heat in a dark situation, will prevent their developing as they ought. *T. Baines.*]

Coniferous Nomenclature. — To criticise the critics I know is rather an unthankful office, still it is sometimes needful. Our worthy friend from the "Far West," Mr. Hoopes, notwithstanding his "opportunities for close study of Abies grandis and its numerous forms under every climatal vicissitude, in both mountain and valley," &c., fails to enlighten our oriental vision. He has not given us his reason for preferring to designate "Picea" as "Abies." In the old-fashioned country we have been taught that the best name for a plant is one somewhat descriptive of the same. Seeing then that Abies is derived from the Pear-like shape of its cone, tapering and pendent, we cannot see this resemblance in the cylindrical and erect cone of Picea. Moreover, as Picea is descriptive of the copious exudation of resin or pitch on its cones, we decidedly think that we have retained the best names. He assumes a false position in taking it for granted that we have not as good advantages for determining species as he; if we may judge from what he writes when he says, "bearing always in mind something more than size and colour are necessary to constitute a species. Although we cannot define what constitutes a species in plain words." Nevertheless both Picea grandis and P. Parsonsiana have been defined as distinct species in plain words. Being myself a possessor of the P. grandis of Douglas, and P. lasiocarpa of Professor Balfour, which I have proved to be identical, and having raised an annual batch of Californian Conifers collected in various localities, and having been the first to receive P. Parsonsiana, and to have annually raised them from imported seeds on a large scale for many years, I have never seen Parsonsiana come from seeds of grandis or *vice versâ*, and until Mr. Hoopes' do that I cannot accept his theory. I have grown all these in the same climate, soil and other circumstances being equal, and have always found them retain their most distinct characters, and never can be confounded with each other, unless by very superficial observers. It may be well to add that Mr. Hoopes seems to fine three distinct forms of grandis in what he calls A. Parsonsiana, A. lasiocarpa, and A. Lowiana. Now, really practical men know that no two plants raised from seed, even from the same parent, are ever found identical in all points, and that Picea Parsonsiana varies in form and length of leaf, also in colour, as dark and light green, some glaucous, some flat, others incurved; still all can be easily identified as the same species. Picea grandis is not subject to such variety of form and colour. *William Barron, Elvaston Nurseries, Borrowash.*

Lily of the Valley.—Surely the two sorts of Lily of the Valley figured by you have been known in England for years? One is the wild Lily of the Valley, as growing in the Kentish woods; the other the garden plant, which has certainly been grown here long before the imported plants from Germany or Holland. I have had Lilies of the Valley of both kinds in pots for the last ten or twelve years, as I prefer well-established pot plants to imported ones. *Lamorran.* [There can be no doubt that the two varieties have been grown in gardens for years past, but then plants grown in this country are no match for those grown on the Continent, for early forcing; and while such is the case it is advantageous to show growers which is the best article, and telling them where to get it. According to our experience well-established pot plants of home growth are generally very inferior to imported roots; and indeed for early forcing there is no comparison between them. Eds.]

Helleborus niger.—The question whether H. niger is a seed-producing species or not need not be doubted, for in the year 1874 a plant in the herbaceous grounds of Messrs. Wood & Ingram, of Huntingdon, ripened a pod of seeds which germinated and produced a nice batch of plants. This pod was taken from the plant, and the seeds sown in a pan in the ordinary way, and placed in a warm frame, showing in this case that they were most certainly plants produced from seed, and not "small pieces of the roots that had made growth round the spot occupied by the plants," as stated at p. 369, vol. v. *Sims.*

Syringing Peach Trees when in Flower.—I am very glad to find your correspondent Mr. Simpson has stepped in and settled this matter, to his own satisfaction at least; happy must he be in his recollections of saving labour to the extent of 50 per cent. to so large a majority of the gardening community! But why does Mr. Miller come forward and virtually rob your correspondent of his "patent" for Peach setting? It is certainly anything but pleasant for one to imagine that he has found out a new invention and then to be told it is twenty years old; this is worse than the application of my teetotal principles to matters horticultural. I must, however, be allowed to stick to my principles until I read some tangible proof of being in error. Granted that Mr. Simpson is successful at setting his Peaches with the syringe, do not other people succeed equally well in setting them without it? If Mr. Simpson could afford time to honour me with a visit here, I will guarantee to take him to a neighbour of mine who is gardener to Sir Hardman Earle, Bart., of Allerton Tower, and there he will see one of the finest crops of early Peaches he has ever seen in his life, and the only assistance they had at setting time was a good shaking of the trees about mid-day to disseminate the pollen when it was dry. I have as yet heard nothing from our "aquatic tutors" to convince me that the work of fructification takes place only when the pollen is so dry that when a tree is slightly shaken a cloud of pollen is seen floating about in the atmosphere of the house, the dewing of the blossoms afterwards through a fine syringe simply acts as a "refresher," and in my opinion it is a mistake to imagine that fertilisation takes place when the flowers are in a saturated state. I should, however, here like to ask the author of the "low night temperatures" by what term he would designate water which is 10° below that in the tanks of his Peach-houses about the end of January? It would also be interesting to know if your correspondent failed to set his Peaches before he tried the syringing, or if he derives any lasting benefit from the practice, such as large fruit of an unusual size, and, of course, a combination of other good qualities as well. I am yet a "junior" in my profession, and, no doubt, Mr. Simpson will be glad to assist a striving brother on his road. When I first addressed myself to this subject I had no idea of being accused of libelling any

portion of the gardening community. I ventured to give my experience in a plain and practical form to those whom I thought might benefit thereby, and, unfortunately for myself, I also ventured to dissuade a certain class of gardeners from using the syringe on their Peach trees in bloom before they had made themselves thoroughly acquainted with the conditions under which it should be applied. I quoted an instance of misapplication in support of my statement, and as to making any allusion to the "fraternity proper," those who know me best will, I think, give me credit for more sense. I am proud to acknowledge the pleasure it affords me to exchange an opinion or to ask for advice, or *vice versâ*, from many of my gardening friends in the neighbourhood of Liverpool and elsewhere. I am not generally accustomed to such high compliments as the one paid me by your correspondent in your issue of the 18th ult., when he so summarily dismissed me from his notice, and offered battle to a veteran more worthy of his steel. This he did in a truly magnanimous spirit, by first of all knocking off his opponent's head, and then trying to stick it on again. Well might Mr. Miller exclaim "Save me from my friends!" and well may I regret my misfortune in having to cross swords with an opponent who receives such a bad character from his neighbours for being so merciless to the weak. I have, however, summoned up considerable courage, owing to the fact that after a week's repose Mr. Simpson again deigns to notice me, even if he should treat me as the lion did the mouse. If I cannot stand "poking in the ribs" I can at least thank people who mix up a little soothing syrup for me with the acid. Still, I cannot ignore facts; I have never gone the "whole hog" with the syringe, but I shut up with plenty of atmospheric moisture for a short time in favourable weather, which is, in my way of thinking, about the same thing, and I have always loads of fruit to pull off. Where, then, is the advantage of this system which Mr. Simpson lays claim to—a system, by the way, which a practitioner old enough to be my father tells me no later than this morning (March 27) is "as old as the hills"? Any one who applies the syringe in bright sunny days as delicately as Mr. Simpson does need apprehend no danger, but if proper attention be given to atmospheric moisture, without actually applying water to the flowers, the results will be in point of fact the same. And so long as I get a good crop of fruit and keep my trees in good health, I cannot for the life of me see the difference. When your correspondent tried to get my head in a "noose" with the gardeners of Liverpool, it was, no doubt, an ingenious method of scoring an "innings," but they have had several opportunities of seeing my productions in the Peach line, and also Mr. Simpson's, and I can confidently leave them to judge for themselves. This would-be secret has been paraded before the public long enough, and it is high time that its genuine advantages should become universally known. *W. Hinds, Otterspool Gardens, Liverpool.* [This correspondence must now be closed. It is a pity such a useful discussion should become so soon mixed up with personalities. EDS.]

Wallflowers.—One of the most popular and useful strains of this early spring flower is that known as the Belvoir Dwarf Yellow generally, although it has also received other designations. This variety is the only one that has pale green flower-buds, and its truthfulness to character may easily be recognised by this peculiarity. It is dwarf, of compact habit, flowers early and abundantly, and the blooms are in colour rich golden-yellow. So highly is this strain esteemed by all who adopt spring flower gardening, that there is a constant demand for it, and it is therefore all the more unpleasant to have to chronicle the fact that its truthfulness to character seems now to have departed. If we could trace its origin, it is possible that some light might be thrown upon the cause of its deterioration, but it is yet difficult to comprehend how it is that a strain that a few years since produced rarely a single rogue now produces at least one half of coloured flowers. Seed saved with the greatest care from plants entirely true and far removed from all others, produce now but the most unsatisfactory results, and seem to indicate that the strain is gone beyond recovery. The golden-yellow variety, somewhat misnamed Tom Thumb, but which grows at least 6 inches higher than the true Belvoir Yellow, as yet retains its colour well, but the flower-buds indicate a tendency to redden, and this may prove the forerunner of breaking up. The rich blood-red market Wallflower, to which some one has recently given the name of Harbinger, is a remarkably true strain, both as to habit and richness of colour. Probably some of this consistency is due to the fact that no other kinds are grown in the market districts. *A.*

Setting Fruit.—Since it is well known that we get our best crops of Strawberries, Plums, Cherries, Apricots, and Apples to set their fruit in moist weather, it stands to reason that to imitate this outside moist genial weather in our houses in the setting of our Peaches and Grapes is the proper practice to adopt instead of that dry "dull watering" system usually seen in gardens. It is a very simple thing for any man of ordinary intelligence to take a can of water of the same temperature as the house, and give the trees or Vines when in flower a gentle dewing. The three reasons assigned by Mr. Simpson are amply sufficient for the practice being universally adopted. It has been the general practice here for several years past to syringe these as well as Strawberries and all indoor forced fruits when in flower, and with every success attending it. *K.*

The New Violet, Prince Consort.—Those who have grown Victoria Regina sent out by Mr. Lee, of Clevedon, will have faith in his new Violet, Prince Consort. He considers it so much better than Victoria Regina, and so useful to himself for bouquets, that he has decided not to send it out unless he gets orders amounting in the aggregate to £1000. After examining a boxful of flowers forwarded by Mr. Lee, I do not wonder at his decision. It is a magnificent Violet, much in the way of Victoria Regina, but larger and lighter. The Victoria has been very fine here this spring, and has quite thrown that grand Violet, the Czar, into the shade. In substance and sweetness it has hitherto been unequalled. I would respectfully urge on Mr. Lee a new way to the making of a fortune out of Violets, by the mounting of the double Russian tree, Neapolitan and double white Violets on to stalks as long as the Czar, Victoria Regina and Prince Consort. *D. T. Fish.*

A Visit to Ilsington Gardens.—I paid a visit the other day to the conservatory and gardens of Mr. W. E. Brymer, the member for the borough of Dorchester, who resides at Ilsington House, a few miles from the town he represents. He has laid out and arranged his place in a really tasteful and elegant style. The conservatory is a magnificent building, erected by Messrs. Weeks & Co., who have very efficiently done their work. It contains a fine glass dome, and the floor is laid with tesselated pavement of a very elegant pattern, and the numerous stages are filled with the choicest plants, which comprise Cinerarias, Palms of all sizes, Primulas, Azaleas, pure white and other hues, and all the exotic wealth it is possible to imagine, conspicuous amongst which is a splendid specimen of Spiræa, whose pure white bloom was a marvel to behold; and the centre object of all is a monster Tree Fern, with branches overshadowing the floor for some distance. The Tacsonia Van Volxemi must also come in for mention, with its elegant clusters of scarlet blossom, but which had nearly finished flowering when I saw it, but still enough was left for me to judge what it must have been when in its glory. But I must not linger here, for there is still more to see, and the gardener, Mr. Saltford, takes me to the fruit-houses, which comprise about 150 yards of glass, built in lean-to fashion in a capital southern aspect, while in front is the spacious kitchen garden, about 2 acres in extent, laid out evidently by skilful hands, and abundantly supplied with carefully trained fruit trees, while the trimly-kept paths bordered with ornamental tiles are a pleasant sight. We first inspect Peach-house No. 1, which is about 70 feet in length, and shows the trees just appearing in blossom, for here there is a judicious graduation in fruit, and further on we shall find them in a more advanced stage. But we note the excellent order in which everything is kept, and the evidence of attention to the embryo crop. Next we arrive at a vinery, where the plants are just showing into bud, whilst next door we find the Grapes about as large as Peas, and the foliage strong and healthy; in fact, the leaves are many of them from from 18 to 20 inches long, the whole in a state of development, affording promise of an abundant vintage. Another Grape-house shows the Vines in bloom, and adjoining is a long extent of glass appropriated to Plums and Peaches, the former being trained on trelliswork, and presenting a strikingly beautiful appearance with its wealth of blossom. An interesting feature here was a hive of bees, useful for the purpose of inoculation, and which had begun to perceive it was time to attend to business, as they had refused the artificial food they had taken in the winter, but scorned to look at now the time of blossoms had arrived. We come next to another house for Peaches and Nectarines, the trees showing a splendid crop of fruit even now, about the size of blackbird's eggs, and all well-grown. Then succeeds the glory of the place—the Cattleya and Orchid-house, which is the pride of the owner, and a credit to his able gardener. This house was fitted up by Messrs. Crocker, Tenner & Co., of Dorchester. Here we saw the choicest and most costly specimens of these singular plants. We noticed also here the means of forcing, which are of the most approved and ingenious kind, showing that no consideration of cost stands in the way of having everything as near perfection as is obtainable. Adjoining this is the cool Orchid-house, in which there is much to delight and interest; and then we come to the department appropriated to East Indian plants, which here are seen in wonderful profusion and luxuriance. This has been fitted up with great completeness by Messrs. Weeks & Co. Here were all kinds of Orchids, large numbers of which were in bloom. I may as well append a list of the principal varieties:—Phalænopsis Schilleriana, twenty-six blooms; P. amabilis, twenty blooms; P. grandiflora, P. intermedia (Lindl.), P. Brymeriana; Cypripedium villosum, ten blooms; Trichopilia coccinea, Cœlogyne speciosa, Dendrobium Pierardi latifolia, 120 blooms; D. Wardianum, a magnificent bloomer; D. aggregatum majus, ten spikes; Oncidium tigrinum, O. cucullatum, Odontoglossum Alexandræ, O. triumphans, Masdevallia Harryana, M. Ignea, M. Veitchii; Ada aurantiaca, a rare and beautiful flower, &c, and many others which want of space forbids me enumerating. It would be impossible to imagine a greater variety of eccentric forms than were to be here seen; they had assumed the most whimsical shapes, and the luxuriance of the bloom was remarkable, for I noticed nearly 150 flowers on one plant. Amongst them the new specimen, the Brymeriana, named after the hon. member for Dorchester, was a noticeable feature. Beyond this we came to a house devoted to Pines, Ferns, stove plants, Melons, &c., all of which were to be observed in various stages of growth. In the Mushroom-house, I was informed, the beds had been most prolific during the past few years, affording a constant supply. I should say a word respecting the appliances for heating and for the supply of hard and soft water, which are of the most perfect and approved character, showing, in fact, that Mr. Brymer spares nothing in making his place the beautiful spot it is; and I left it, disposed to envy the possessor of such a paradise, and at the same time feeling its beauty was due in a great degree to the care and skill of Mr. J. Saltford, and his subordinate, Mr. Redmill, to whom, I believe under the direction of Mr. Saltford, the charge of the Orchids is entrusted. *Rusticus, Dorchester, March* 27.

Compost Heaps.—A compost heap in a garden is a very desirable thing, and those who don't know what it is or what it consists of may learn from this. To begin with, a load of lime, the same of road-scrapings, ashes sifted, old tan, privy emptyings, old pottings, shed soil of all sorts, lime rubbish, parings from walks, ditch emptyings, charred refuse, leaf-soil—in fact any such like accumulations all thrown together in a heap in the proportion of one of lime to eight or twelve of the other, turned over and over, afford an inexhaustible rich store, if to the heap is continually added stuff that may be used for top-dressings to fruit trees, Strawberry beds, Rose beds, Currant and Raspberry quarters, and for many other things, such as grass and evergreens. Of course the older it is and the oftener it is turned over the better it becomes. Such is a compost heap, and a very valuable addition to a garden it becomes. Asparagus beds are greatly benefited by a surfacing of it (2 or 3 inches) in spring, and it is first-class for Potatos in pots and frames. *K.*

Echinocactus Visnaga.—In the *Gardeners' Chronicle* for 1845, p. 132, there is an article from the pen of Sir W. J. Hooker, in which he describes a monster specimen of this Cactus, then at Kew, the weight of which was 713 lb., it measured 4½ feet in height, and 8 feet 7 inches in circumference at 1 foot from the ground. I can find no record in your subsequent volumes of any plant of a greater weight than the above having been imported; but in the *Official Guide to Kew Gardens* mention is made of a specimen having been sent there weighing 1 ton, and measuring 9½ feet in circumference. This is the plant, I presume, that is alluded to in the *Treasury of Botany*, p. 439, as "weighing 1 ton, and measuring 9 feet in height by 3 in diameter;" and in the second edition of Rhind's *Vegetable Kingdom*, as "weighing 1 ton, and being 9 feet in height, with a diameter of more than 3 feet." The authorities I have quoted do not agree very precisely as to the details about this vegetable wonder, and I should be glad if any one can give me the exact figures of weight and measurement, and the date of its introduction to Kew. *W. B.*

Limestone as Fuel.—I have no desire to take up the valuable space of the *Gardeners' Chronicle* with a subject foreign to the general interest of your readers, but as the chemical arguments here involved are intimately connected with horticulture, and at the same time so simple in their details that I think I shall be excused for venturing to prolong the discussion. Mr. Kinnear, in referring to the quantity of coal employed in ordinary kilns to decarbonise limestone, says, "it varies somewhat according to the quality of the lime," and a range of proportion is given from three to five parts of limestone to one of coal. Now the deduction to be drawn from Mr. Kinnear's argument is this, that the whole of the heat produced by

the coal employed is rendered latent in the carbonic anhydrid expelled from its union in the limestone, and that the result is the same whether three or five parts of limestone have been used. Why this should still be brought forward to substantiate Mr. Kinnear's theory I am at a loss to understand, and it is incredible that this opinion should still be held in the face of facts. The sole question at issue is so simple and definite that it demands as simple and definite an answer. It is this:—Carbonic anhydrid does or does not render latent all the heat of the coals employed in the kiln; and if all the heat is not rendered latent what is the proportion? At p. 331 I endeavoured to make this plain by giving the proportion, and on the authority of "Watt" I based my calculations. The above may be considered a perfect answer to the subject at issue, and unless Mr. Kinnear can show cause why my figures should be altered, giving reference to the authority consulted, any further argument from him on the point will be inadmissible. Permit me further to refer to the action in which there is an interchange between the aqueous vapour and the carbonic anhydrid of the limestone. With respect to this Mr. Kinnear says, "Mr. Cochrane again leads us into the maze of vagueness." If this is the case I am not the author of it, for I used substantially the same words as Professor Miller in his *Organic Chemistry*, p. 467, and the process is more fully explained by other authors. I cannot believe that Mr. Kinnear will hold himself to be the standard of correctness in opposition to those celebrated chemists. Again with respect to the nomenclature I adopt, as Mr. Kinnear is evidently not aware of the following fact, I will state that the appellation carbonic acid is not now applied to the gas expelled from limestone, and by modern chemists it is not regarded as an acid, for only upon its union with hydrogen does it assume the property of an acid. The symbols are given thus—CO_2 (carbonic anhydrid), $HO_2\ CO_3$ (carbonic acid). Mr. Kinnear takes me up on a few minor points, but as they do not bear on the main point at issue and are merely opposite assertions unsupported by evidence, I leave them as they are. In conclusion, let me state that I am perfectly convinced that there is a gain of heat in employing limestone with coal, and that I do not intend to try Mr. Kinnear's experiments with "brickbats;" it is perfectly incompatible with the accurate and trustworthy manner usually adopted by chemists to ascertain results, and to go back to such a primitive and rude experiment to convince a chemist of the correct measurement of the subtle units of heat given out by a given quantity of matter is out of the question. I therefore make Mr. Kinnear a present of his experiment with "brickbats" and pyrometer, and hope if he experiments the results will be correct. *W. D. Cochrane, Bingley.*

—— I had not intended to say more on this subject, but Mr. Moule's reiterated assertion that the question lies only between my "science" and his "facts" compels me to offer a few words of correction. He must pardon me for saying that the question is precisely the opposite. I do not dispute his facts; what I dispute is his scientific theory, and to that theory I oppose the facts which have been thoroughly ascertained by more scientific observers. When he tells us that by mixing his coal with chalk he gets the required heat with less fuel I unhesitatingly believe him. When gardeners of credit, such as Mr. Gilbert, or Mr. Gordon, of Niddrie, tell us that by the same process, or by using a furnace in the form of a kiln, they also get more heat out of the coal than they did before, I readily accept their statement—nay more, I have already pointed out that it is a remarkable and instructive fact. But when Mr. Moule departs from facts, and gives his explanation of the reasons of the facts—when he insists that if we believe his facts we must also accept his theories, and admit that limestone is itself a source of heat—then I demur, and reply that other well-known facts of Nature are inconsistent with that theory. I may now go further, and show that even his own facts are totally inadequate to support his theory. He says that 2 cwt. of coal, with chalk, heats his pipes to the same degree as 5 cwt. without chalk. Very good; but he has not ascertained (at least, he has not told the public) how much extra heat went up the chimney from the 5 cwt. of coal. His furnace may have grate surface only sufficient to burn 2 cwt. properly; his boiler may have surface only sufficient to absorb the heat of 2 cwt. if the 2 cwt. were judiciously supplied; and in either of these cases the putting more coal into the furnace would only result in waste. The same remark applies to the ease of the manufacturer who saved 25 per cent. by mixing his coal with limestone. Admixture with anything will often give surprising results. Every engineer knows the enormous difference in available heat from the same quantity of coal realised by merely a difference in the stoking. It is a familiar fact that in a common grate a fire-clay back increases the available heat, and fire-clay lumps are sold in every ironmonger's for mixing with coals because they save fuel. They do so by confining and concentrating the heat, by making the combustion more equable and perfect, and by keeping the incandescent mass more open for the access of oxygen. Now until Mr. Moule or other experimenters exclude all possibility of error from these various sources—that is, until they demonstrate that not only is more heat derived from the mixture of chalk and coal than from coal alone, but that in both cases the whole of the heat is utilised and measured—till they prove further that the heat from the lime furnace would not be equalled by the heat from a furnace fed with a mixture of coal and some other substance resembling limestone in every respect, except as not containing carbonic acid, they are not entitled to ask us to accept their theory that heat is produced by the burning of the limestone. Let us have the facts accurately ascertained before we are called upon to acknowledge the correctness of the explanation. *W. Boyd Kinnear, Guernsey.*

Fruit Prospects.—The fruit prospects are good in this quarter, notwithstanding the backwardness of the season and the late severity of the weather, which has been most unusual for a number of years past. All kinds of fruit trees are laden with fruit-buds, ready to burst into flower at the first genial moment. Only a few Apricot flowers are open, and these are destroyed, but numbers are left to open. On the whole, the prospects of a plentiful fruit crop are more promising than last year; and even trees that were then laden with fruit are literally studded with fruit-buds now—Apples, Plums, Pears, Apricots, and Cherries alike. Owing to the late severe weather we may hope to have less annoyance from insects, as growth, when it does begin, will be rapid and luxuriant, and give the enemy defiance for us. We all know a slow, checkered growth becomes a prey to insect ravages. We have every reason to hope that a late spring will be the forerunner of a plentiful fruit harvest—a very desirable end, and one that is a very great boon to the country, as the taste for fruit is greatly on the increase among all classes; and if the mode of eating it was better understood—as that an Apple and a piece of bread chewed together is better than eating an Apple separate—would be an advantage to every one. *K., Roxburghshire.*

Notices of Books.

Thrift. By Samuel Smiles. Murray.

This book, we are told by its author, is intended as a sequel to *Self Help* and *Character*, works which have deservedly attracted the favourable notice of the public. We doubt if the present volume will be as popular as its predecessors, but there must be many to whom they are not known, and who will therefore appreciate this one. Its object is to wage war on intemperance and improvidence, by showing the misery they occasion, by pointing out the methods of prevention and of cure, by advocating the value of economy, life assurance, savings banks, and the like. One great temptation to improvidence rises from the unwholesome, uncomfortable homes of the poor. We are glad, therefore, to see Mr. Smiles making numerous suggestions to amend this state of things, and showing how poverty need not debar a man from refinements and elegancies too often looked on as the exclusive appurtenances of the wealthy. Says the author—

"Why not have some elegance in even the humblest home? We must, of course, have cleanliness, which is the special elegance of the poor. But why not have pleasant and delightful things to look upon? There is no reason why the humbler classes should not surround themselves with the evidences of beauty and comfort in all their shapes, and thus do homage alike to the gifts of God and the labours of man. The taste for the beautiful is one of the best and most useful endowments. It is one of the handmaids of civilisation. Beauty and elegance do not necessarily belong to the homes of the rich. They are, or ought to be, all-pervading. Beauty in all things—in Nature, in art, in science, in literature, in social and domestic life.

"How beautiful and yet how cheap are flowers. Not exotics, but what are called common flowers. A Rose, for instance, is among the most beautiful of the smiles of Nature. The 'laughing flowers,' exclaims the poet! But there is more than gaiety in blooming flowers, though it takes a wise man to see the beauty, the love, and the adaptation, of which they are full.

"What should we think of one who had invented flowers; supposing that, before him, flowers were unknown? Would he not be regarded as the opener-up of a paradise of new delight? should we not hail the inventor as a genius, as a god? And yet these lovely offsprings of the earth have been speaking to man from the first dawn of his existence until now, telling him of the goodness and wisdom of the Creative Power, which bade the earth bring forth, not only that which was useful as food, but also flowers, the bright consummate flowers, to clothe it in beauty and joy!

"Bring one of the commonest field-flowers into a room, place it on a table or chimneypiece, and you seem to have brought a ray of sunshine into the place. There is a cheerfulness about flowers? What a delight are they to the drooping invalid! They are like a sweet draught of enjoyment, coming as messengers from the country, and seeming to say, 'Come and see the place where we grow, and let your heart be glad in our presence.'

"What can be more innocent than flowers! They are like children undimmed by sin. They are emblems of purity and truth, a source of fresh delight to the pure and innocent. The heart that does not love flowers, or the voice of a playful child, cannot be genial. It was a beautiful conceit that invented a language of flowers, by which lovers were enabled to express the feelings that they dared not openly speak. But flowers have a voice for all—old and young, rich and poor. 'To me,' says Wordsworth,

> 'The meanest flower that blows can give
> Thoughts that do often lie too deep for tears.'

"Have a flower in the room, by all means. It will cost only a penny, if your ambition is moderate; and the gratification it gives will be beyond price. If you can have a flower for your window, so much the better. What can be more delicious than the sun's light streaming through flowers—through the midst of crimson Fuchsias or scarlet Geraniums? To look out into the light through flowers—is not that poetry? And to break the force of the sunbeams by the tender resistance of green leaves? If you can train a Nasturtium round the window, or some Sweet Peas, then you will have the most beautiful frame you can invent for the picture without, whether it be the busy crowd, or a distant landscape, or trees with their lights and shades, or the changes of the passing clouds. Any one may thus look through flowers for the price of an old song. And what pure taste and refinement does it not indicate on the part of the cultivator!

"A flower in the window sweetens the air, makes the room look graceful, gives the sun's light a new charm, rejoices the eye, and links Nature with beauty. The flower is a companion that will never say a cross thing to any one, but will always look beautiful and smiling. Do not despise it because it is cheap, and because everybody may have the luxury as well as yourself. Common things are cheap, but common things are invariably the most valuable. Could we only have fresh air or sunshine by purchase, what luxuries they would be considered; but they are free to all, and we think little of their blessings."

—— The last part of Professor Newton's edition of Varrell's *British Birds* (Van Voorst) deals with the Buntings, including such well-known birds as the chaffinch and the yellow-hammer. We are glad to see the editor restores the "h" to this word, and that the Cockney pronunciation, "ammer," is no longer advocated. There is but one thing to complain of in this fine work—the long intervals which occur between the publication of the parts.

—— The recently issued Part of the *Transactions* of the Scottish Arboricultural Society contains Prof. Balfour's address as President, which deals with the question of forest conservancy, the desirability of establishing a forest school in Britain, with recent forest-literature and other matters. Mr. Hutton has an excellent paper on planting sand-hills. Mr. Peebles reports on the present state and prospects of arboriculture in Hampshire; Mr. Gorrie contributes a very suggestive article on the failure of the Larch; Mr. M'Kenzie practical papers on the age at which timber trees in Scotland may be felled most profitably, and on the most profitable mode of disposing of home-grown timber. Mr. Bayne discusses the distances at which forest trees should be planted in different soils and situations. Altogether the number is of unusually good quality.

—— The zoological and botanical papers contained in the quarto *Transactions* of the Linnean Society are now issued separately. In the last published botanical part the papers are two in number—one by the Rev. George Henslow, on the origin of the prevailing system of Phyllotaxis, in which he endeavours to show that the spiral arrangement of leaves is deduced from the opposite and decussate arrangement by the lengthening of the internodes, each cycle being formed from a definite number of pairs of decussating leaves, thus in the $\frac{3}{5}$ arrangement the pairs 0,1; 2,3; 4,5, are required to produce the first cycle, and so on. Some plants take five, seven, or even

eleven pairs to complete the cycle. As an hypothesis, Mr. Henslow suggests that all the spiral arrangements of Dicotyledons have been originally derived from opposite leaves, and that Monocotyledons are of greater antiquity than Dicotyledons. Mr. Miers contributes a memoir on the Barringtoniaceæ, tropical trees with very large showy flowers, allied to Myrtles, but having no dots to the leaves, and presenting other points of difference. One of the chief peculiarities of the order lies in the very large undivided embryo, which developes in germination a plumule at one end, a radicle at the other. Directors of colonial botanic gardens would do good service by noting the mode of germination of these embryos, and by sending specimens home for examination. Mr. Miers admits ten genera, some described for the first time by himself, and his paper is illustrated by several valuable plates.

—— Under the title of *Revista de Horticultura* has been established at Rio Janeiro a journal devoted to gardening affairs. From it we learn that on January 20 a horticultural exhibition was opened in that city in the presence of the Emperor, the Princess Imperial, and various members of the Government. H.I.H. the Comte d'Eu, President of the Society, gave a brief inaugural discourse. On the 22d the prizes were distributed, and, amongst others, a gold medal to Sr. Lourenzo Hoyer, nurseryman of Rio, for a splendid collection of Arads. Sr. Barbosa Rodrigues describes a new Palm under the name of Astrocaryum princeps, from the Amazon and Tapajos districts. A Pomegranate with yellow fruits and flowers is also noted. Among the advertisements we notice one of "Plantas carnivoras."

Reports of Societies.

Royal Botanic: *March* 29.—The first spring exhibition of this Society was held on Wednesday last in the long corridor leading to the conservatory, and proved neither better nor worse than the corresponding shows of previous years. Hyacinths, Tulips, and Cyclamens made a bright display, but in stove and greenhouse plants there was perhaps a falling off F. G. Wilkins, Esq. Leyton (Mr. J. Ward, gr.), took the 1st prize with a nice group, in which the best plants consisted of his grand variety of Anthurium Scherzerianum, Eriostemon medius, Cytisus racemosus elegans, Azalea Reine des Beautés, Acacia longifolia magnifica, &c. The other prize winners were H. Wetenhall, Esq., Seven Sisters' Road, N. (Mr. G. Toms, gr.), and Sir F. H. Goldsmid, Bart., Regent's Park (Mr. G. Wheeler, gr.). Forced hardy shrubs were not represented as a class; and of Azaleas the display was limited and generally poor; the best examples coming from Mr. B. S. Williams and F. G. Wilkins, Esq. A class for twelve hardy Primulas brought no competition; and of nine Cinerarias there was only one exhibitor, W. F. Watson, Esq, Isleworth (Mr. James, gr.), whose plants were quite up to the average of the last year or two, and gained a 1st prize. There were several exhibitors of Lily of the Valley, but the plants generally did not seem so well brought out as we have seen them. The best examples came from Messrs. James Carter & Co., High Holborn. Francis Whitbourn, Esq., Loxford Hall, Ilford (Mr. Douglas, gr.), took the highest award in a good amateurs' class for twelve single spikes of Hyacinths; his best specimens—and they were first-rate—being of Mont Blanc, Von Schiller, Grandeur à Merveille, Macaulay, De Candolle, King of the Blues, and Grand Lilas. The other successful competitors in this competition were Mrs. Hodgson, The Elms, Hampstead (Mr. J. Weir, gr.), and the Misses Christy, Coombe Bank, Kingston (Mr. Moorman, gr.) In the corresponding class for nurserymen the display was also good, the prizes being won by Messrs. William Cutbush & Son, Highgate, Messrs. Barr & Sugden, King Street, Covent Garden, and Messrs. James Carter & Co., in the order named; and very fine were the spikes of Bird of Paradise, Czar Peter, La Grandesse, Von Schiller, King of the Blues, and Charles Dickens, from the first-named firm. It may seem tiresome to repeat these names over and over again as the season comes round, but while there are many higher-priced varieties the old sorts still maintain their supremacy. In the open class for twelve Hyacinths, any number of spikes, either single or compound, F. Whitbourn, Esq., was again 1st, with a very fine lot of double spikes; Messrs. Cutbush & Son being 2d, and Messrs. Barr & Sugden 3d. The best dozen Tulips in the show also came from Mr. Francis Whitbourn's garden; these were contributed to the amateurs' class, which was a fairly good one. Amongst nurserymen Messrs. Barr & Sugden were 1st. We noted nothing particularly new or novel amongst the varieties staged. In the class for six Deutzias F. Whitbourn, Esq. (Mr. Douglas, gr.), was well 1st with splendidly-flowered cylindrical plants about 3 feet high and 2 feet through. There was a very nice display of Cyclamens, though this beautiful spring flower is not being shown so well this year as last. The best group of a dozen was contributed by H. Little, Esq., Twickenham (Mr. Goddard gr.). Less fine, but still beautiful, groups came from F. W. Watson, Esq.; Mr. Clarke, of Twickenham; and Mr. Smith, of Ealing Dean. Mr. Clarke also staged a nice lot of the grand white Cyclamen giganteum, and a brilliant deep rosy crimson form named coccineum.

To the miscellaneous class, always an important one at flower shows, Messrs. Paul & Son, the Old Nurseries, Cheshunt, contributed a nice fresh group of Roses in pots, and five boxes of beautiful cut blooms. Mr. B. S. Williams sent a choice group of flowering and fine-foliaged plants, including a nice batch of Amaryllis, composed of such fine varieties as The Czar, Oriflamme, Princess of Wales, Virginalis, Bierii, and Meteor. A small group of Orchids came from F. A. Philbrick, Esq., Avenue Road (Mr. Heims, gr.); and Messrs. William Paul & Son, Waltham Cross, showed a large group of nicely-coloured bronze and silver Tricolor Pelargoniums, and an admirable collection of cut blooms of Camellias. Messrs. James Carter & Co. contributed a good collection of Hyacinths and Tulips, and half-a-dozen each of small but well-flowered Dielytras and Deutzias; and Messrs. Cutbush & Sons a lot of fine cut blooms of Camellias.

New plants, except perhaps florists' flowers, were only shown in small numbers, and consequently but few certificates were awarded. Messrs. James Veitch & Sons received Botanical Certificates for Adiantum digitatum, Adiantum Luddemannianum, a crested form of A. Capillus-Veneris; Abutilon Darwinii tesselatum, Brahea filamentosa, Grevillea Priessii, Odontoglossum Chestertoni, and Rhododendron Princess of Wales, a hybrid between Lobbii and Princess Royal, with flowers of a bright rosy exterior and pure white tube. Floral Certificates were awarded to Messrs. Cutbush & Son for Hyacinth Princess Louise, a double flower of a salmon ground colour shaded with rose; it is a novelty in colour, and belongs to a set of double varieties now making their appearance in collections, in which the symmetry of spike characteristic of the single sorts is maintained. To Mr. H. Bennett, Manor Farm Nursery, Stapleford, for the beautiful new Tea Rose Madame François Janin; and for H. P. Comtesse de Serenyi, a large pale silvery pink with recurved edges, and a very promising Rose. To Messrs. Paul & Son, Cheshunt, for a new H. P. Rose, named Duchesse de Vallambrosa, which somewhat resembles the last-named in colour, but is of a little deeper tint, and a more open flower. To H. Little, Esq. (Mr. Goddard, gr.) for Cyclamen Purple Gem; and to W. F. Watson, Esq. (Mr. James, gr.), for Seedling Cinerarias Princess of Wales, Leah, Dr. Masters, The Marquis, Model, Alice, and Mrs. Lay. These were shown in a group of seedlings, which were certainly the finest we have seen. Many of them, and especially the selfs, were of grand size, great depth of colour and perfectly reflexed form.

East London Amateur Floricultural Society.—This Society held its eleventh exhibition of spring flowers, &c., at the Bow and Bromley Institute, on Tuesday, Wednesday and Thursday last, when the show of plants was, in our opinion, superior to those of preceding years. Amongst the principal prize-takers were Mr. Parker, who was first in no less than eight classes, taking the 1st prize for twelve Hyacinths in bloom, among which fine spikes of De Candolle and Marie were to be seen; Mr. Parker was also 1st for twelve pots of Tulips, for three pots of Dielytra spectabilis, which were very fine, and for a good collection of bulbs, Mr. Deacon made a good 2d. Mr. Deacon also took six 1sts, among which may be mentioned his stands of eighteen Hyacinths and Tulips respectively, which were well done. The only Roses which were shown came from this gentleman, for which he received the 1st prize. For twelve and nine pots of Crocuses Mr. Parker and Mr. Domorazek were 1st respectively. Among minor prize-takers we must mention Mr. Ezull's six Hyacinths, Mr. Gardiner's collection of six Polyanthus Narcissi, and Mr. Domorazek's Solomon's Seal, which were very effective.

For collection of plants Mr. Hare came 1st, showing some nice Azaleas. This gentleman was also 1st for three Rhododendrons, three pots of Spiræas, &c. In the class for four Azaleas, Mr. Deacon was put 1st with nice robust plants. For general collection of plants, Mr. Parker was again 1st, being well seconded by Mr. Deacon; and for a collection of twenty-five bulbs Mr. Domorazek took the premier prize, and for which Messrs. Roberts and Hare were awarded equal 2d. Mr. Phillips' Tulips, Mr. Pilkington's Tulips and Narcissi, and Mr. Wenden's Rhododendrons were also worthy of notice.

The arrangements were very effective, owing, doubtless, to the fact that the bulbs and foliage plants, &c., had been artistically intermixed. And when we consider that this exhibition has been produced entirely by amateurs living in such an unpropitious situation as the East of London, we see good cause why they and the able Secretary (Mr. Gardiner) should be congratulated on the excellent display brought together.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, MARCH 29, 1876.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall
Mar.	In.	In.	°	°	°	°	°	°			In.
23	29.71	−0.08	45.3	27.2	18.1	35.5	− 6	20.6	78	NE.: WNW	0.00
24	29.48	−0.30	53.0	28.8	24.2	40.4	− 1.7	32.7	74	S.W.: S.	0.00
25	29.49	−0.28	52.6	35.1	17.5	42.2	− 0.1	38.2	86	ENE.: E.	0.00
26	29.38	−0.40	39.4	35.4	4.0	36.4	− 6.1	29.3	76	N.E.	0.00
27	29.19	−0.57	47.6	32.4	12.2	37.7	− 5	35.1	91	ENE.: E.: ESE.	0.25
28	29.02	−0.74	56.7	38.9	17.8	47.4	+ 4.4	44.5	90	S.S.E.: S.	0.16
29	29.19	−0.57	55.3	42.2	13.1	47.2	+ 4.0	41.1	82	S.S.W.	0.02
Mean	29.35	−0.42	49.6	34.3	15.3	41.0	+ 1.6	35.8	82	variable	sum 0.43

March 23.—A fine day, cloudy and gloomy. Slight fog, and hoar-frost in early morning.
— 24.—A very fine clear day. Hoar-frost and cold in morning.
— 25.—A fine day, cloudy and windy.
— 26.—An overcast, dull, cold day.
— 27.—Overcast and dull throughout. Rain fell from 3.45 P.M. to midnight.
— 28.—A fine, but very cloudy day. Mild.
— 29.—Dull and cloudy, and frequent rain till 11 A.M. Fine, but cloudy after. Mild.

—— During the week ending Saturday, March 25, in the neighbourhood of London, the reading of the barometer at the level of the sea decreased from 29.99 inches at the beginning of the week to 29.89 inches by the morning of the 19th; increased to 30.08 inches by the evening of the same day; decreased to 29.85 inches by the afternoon of the 21st; increased to 29.95 inches by the morning of the 23d; decreased to 29.63 inches by the afternoon of the 24th; increased to 29.71 inches by noon on the 25th; decreased to 29.68 inches by the afternoon of the same day; and was 29.69 inches at the end of the week. The mean reading for the week was 29.86 inches, being 0.33 inch above that of the preceding week, and 0.12 inch below the average.

The highest temperatures of the air observed by day ranged from 53° on the 24th to 36¼° on the 19th; the mean for the week was 44¼°. The lowest temperatures of the air observed by night varied from 25½° on the 22d to 35° on the 25th; the mean for the week was 28¼°. The mean daily range of temperature in the week was 16°, the greatest range in the day being 24¼° on the 24th, and the least 10½°, on the 19th.

The mean daily temperatures of the air were as follows:—19th, 30°; 20th, 32°.9; 21st, 32°.6; 22d, 32°.2; 23d, 35°.5; 24th, 40°.4; 25th, 42°.2, being 11°.7, 8°.8, 9°.2, 9°.7, 6°.5, 1°.7, 0°.1; in defect of their respective averages. The mean temperature of the air for the week was 35°.1, being 6°.8 below the average of sixty years' observations.

The highest reading of a thermometer with blackened bull in vacuo, placed in sun's rays, was 104° on the 25th; on the 19th it did not rise above 47°. The lowest reading of a thermometer on grass with its bulb exposed to the sky was 18½° on the 19th; the mean reading for the week was 23½°.

The direction of the wind was variable, and its strength gentle. The weather during the first four days of the week was dull, cold, cloudy, and frequent snow fell; the last three days of the week were fine but cloudy.

Rain fell on three days; the amount collected was 0.32 inch.

In England, the highest temperatures of the air observed by day was 53¾° at Leicester; at Plymouth, Norwich, Liverpool, and Bradford 48½° was the highest temperature in the week; the mean value from all stations was 50½°. The lowest temperature

of the air observed by night was 22¼°, at Eccles; at Plymouth and Liverpool 28½° was the lowest temperature in the week; the general mean from all stations was 25¼°. The range of temperature in the week was the greatest at Bristol, 29°, and the least at Plymouth and Liverpool, both 20°; the mean range of temperature from all stations was 25¼°. The mean of the seven high day temperatures was the greatest at Truro, 45°, Plymouth, 44½°, and the least at Brighton, 41½°; the mean from all stations was 43½°.†

The mean of the seven low night temperatures was the least at Cambridge, 26¾°, and the greatest at Liverpool, 32½°; the mean value from all stations was 29½°. The mean daily range of temperature in the week was the greatest at Cambridge, 17½°, and the least at Liverpool, 10°; the mean dailyrange from all stations was 14¼°. The mean temperature of the air for the week was 35°, being 7¾° lower than the value for the corresponding week in 1875. The highest was 37¼° at Truro, and the lowest 33¾° at Wolverhampton.

Rain fell on three days in the week at most stations; the amounts measured varied from eight-tenths of an inch at Truro, six-tenths at Plymouth, to two-hundredths of an inch at Liverpool and Bradford; at Eccles no rain was measured; the average fall over the country was a quarter of an inch nearly. The weather during the first part of the week was dull, very cold, and snow fell generally over the country; during the latter portion the weather was finer but cloudy. The whole week was of a cold temperature.

In Scotland, the highest temperatures of the air ranged from 51° at Edinburgh to 49° at Dundee and Leith; the mean value from all stations was 49¾°. The lowest temperatures of the air varied from 15° at Dundee to 26° at Aberdeen; the mean from all stations was 23°. The mean range of temperature in the week was 26¾°. The mean temperature of the air for the week was 37°, being 8¼° lower than the value for the corresponding week in 1875. The highest occurred at Edinburgh, 38°, and the lowest, 36°, at Paisley.

Rain fell to the amount of three-quarters of an inch at Aberdeen, but at Dundee and Leith five-hundredths of an inch only was measured; the average fall over the country was a quarter of an inch.

At Dublin the highest temperature of the air was 50¾°, the lowest 26½°, the range 24¼°, the mean 38¾°, and the fall of rain 0.26 inch.

JAMES GLAISHER.

Variorum.

Paul's Imperial Crab.—Accompanying a finely-coloured plate of this exceedingly ornamental tree, published in the *Florist and Pomologist* for January, we find the following particulars of its history, &c. Specimens of this very ornamental fruit were exhibited at South Kensington, in September, 1874, by Messrs. Paul & Son, of Cheshunt, from some of which the annexed description was taken:—"Fruit roundish oblate, about 1½ inch in diameter, with numerous shallow ridges, most evident towards the eye; stalk ⅜ inch to ⅝ inch long, set in a moderately deep acute hollow; eye prominent, with long acute calyx-lobes, set in a broad shallow cup. Skin yellow, almost wholly covered with bright red, the outer part more deeply coloured, very deep crimson, with a thin bloom. Flesh yellowish, firm, tender, and moderately juicy, with a fresh and rather rough acidity." Messrs. Paul & Son have obligingly communicated the following particulars respecting the plant:—"The Imperial Crab was a seedling raised by Mr. R. Laing, of the Twickenham Nursery, a cross between the Red Astrachan Apple and Siberian Crab. As I understand Mr. Laing, it was accidental, the two trees standing with interlaced branches in one of the old walled squares of the nursery. It fruited, and was exhibited at the Pomological Society's meeting about the year 1865, where it was much admired, but did not receive any official recognition. Struck by the fruit on the young grafted trees, which I saw and admired three or four years successively, I persuaded Mr. Laing to let my firm send it out in conjunction with him. Hence when distributed in 1869 it became generally known as Paul's Imperial Crab. Its handsome foliage and vigorous habit, coupled with the brilliantly tinted fruit, have gained for it general favour. The fruit almost declares its parentage, so vividly is it coloured, while the Astrachan Apple blood gives it the quality of being the earliest-ripening of the Crabs. It makes a handsome standard or free pyramidal bush. Miss Laing adds:—'The fruits, preserved in various ways like the Siberian Crab, make an agreeable and ornamental dessert dish; they may be also preserved like Morello Cherries, in gin, with a flavour of brandy, or boiled in syrup.'" *George Paul.*

Indian Teak Timber.—It is the practice in Burmah to girdle the Teak trees three years before they intend to fell them, a complete ring of the bark and sap-wood being cut through and removed in order to kill the trees. This object is very soon obtained, as in a few days, or at most a few weeks, the tree is dead, the natural juices contained in it are, therefore, gradually run off by the root while the tree stands. This and the great heat of the climate combined, seasons the wood, and renders the log—which in its green state would have a specific gravity of at least 1000, and be difficult to move if felled—so much lighter that it floats easily over the shallows of the streams or rivers to the port of shipment, and as usually about a year elapses between the felling and the delivery of the timber in England, it is commonly received in a fit state for immediate use. The practice of girdling is, I think, objectionable, inasmuch as the timber dries too rapidly, is liable to become brittle and inelastic, and leads frequently to the loss of many fine trees by breakage in falling; further, it must be regarded as so much time taken from the limit of its duration, which is of great importance. *Laslett's Timber and Timber Trees.*

Enquiries.

He that questioneth much shall learn much.—Bacon.

109. Grafting Magnolias.—Will any of the correspondents of the *Gardeners' Chronicle* kindly inform me whether we can bud or graft an old Magnolia grandiflora, which never blooms, with the Exmouth variety, that flowers very freely with us? *W. F.*

Answers to Correspondents.

Aucuba: *Kent.* The male plant certainly does not generally bear red berries. We should as soon expect to see cocks lay eggs.

Books: *W. H. T.* The *Horticultural Directory*, published at 171, Fleet Street, is what you want.

Bouvardias: *R. Rutland.* Bouvardias are such free flowerers that usually every bit of growth a couple of inches long shows bloom. Such shoots do not strike freely. About this time, or a month earlier, cut some plants close in, and put them in a brisk heat. They will quickly break into free growth; when the shoots are two or three inches long take them off with a heel. These will usually root freely in a moist brisk heat; or they may be struck readily from cuttings made of pieces of the roots an inch or two in length, treated similarly to shoot cuttings.

Cinerarias: *F. & A. Smith.* The batch of flowers sent are of very fine quality, and some of them well worth perpetuating as superior varieties. A richly shaded puey-crimson, with narrow white ring around the purple disk, is very handsome.

Hardy Fruits: *J. P. M.* The only classifications that we know of are those in the *Fruit Manual.*

Hollyhocks Diseased: *G. & Co., Portadown.* Your Hollyhocks are suffering from a bad attack of the fungus which has recently appeared upon the Hollyhock and its allies—Puccinia malvacearum. It has frequently been referred to by us, and was illustrated in our number for June 13, 1874, p. 767. For a remedy see our pages for July 25, 1874, p. 110.

Names of Fruit: *E. W.* Too much decayed for identification.

Names of Plants: *A. B. Yellow.* Coronilla glauca.

Nepenthes: *R. Rutland.* Make cuttings of both old and new wood of Nepenthes. Those made from the points of the shoots should consist of 10 inches or 12 inches of the top; if shorter, the bottom portion will be too soft to strike. The hard wood generally succeeds better, making the cuttings with two joints to each. If taken off now, and put in well-drained pans, two-thirds filled with good fibrous peat and sand in equal proportions, the top all sand, covered with bell-glasses, kept moist and shaded during summer weather in a heat of 70° in the night, and higher in the day, according to the weather (Nepenthes will bear as much heat as any plants), they will during the summer nearly all push shoots, but not all make roots. I generally manage to strike about two-thirds of the cuttings. They require very great care in potting off not to injure the roots, and should be kept covered with a bell-glass until they get established. I cut the leaves to about 8 inches in length, to more easily get them under the glasses. *T. Baines.*

Tuberose: *A Very Old Subscriber.* See our number for May 2, 1874, p. 566.

Vine Roots: *W. J. C.* We cannot find any Phylloxera. Keep watch; and if you have reason to think there are any, send again.

Vines: *X. Y.* There can be little doubt in your case that your Vines are suffering through their roots being in too wet and cold a soil. The shoots turning yellow, and the aerial roots, are true indications of this. Do not keep quite such a humid atmosphere in the house. But the best remedy will be to see to the improvement of the border as soon as the crop is gathered.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "Editors," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. *Letters relating to Advertisements, or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

☞ Foreign Subscribers sending Post Office Orders, payable at the post-office, King Street, Covent Garden, London, are requested to be good enough to write to the Publisher, at the office of this paper, 41, Wellington Street, Covent Garden, at the same time, to inform him of the fact.

Publications Received.—Transactions of the Massachusetts Horticultural Society, 1875.—Diagnoses de Cucurbitacées Nouvelles, &c. Par Alfred Cogniaux.—Bulletin de la Société Botanique de France.—A Few Suggestions on Tree Planting. By S. C. Sargent.—May's British and Irish Press Guide.—The Advertisers' Manual and Register of Newspapers for 1876 (Pearse, Lever & Co.).

Catalogues Received.—Mr. R. G. Fortt (42, Baldwin Street and 29, Clare Street, Bristol), Catalogue of Agricultural Seeds, &c.—Messrs. Ewing & Co. (The Royal Norfolk Nurseries, Eaton, Norwich), Lists of New Roses, Clematis, &c.—Messrs. Thibaut & Keteleer (37, Rue Houdan, Sceaux, Seine, France), General Catalogue of Plants, &c.—Messrs. Groenewegen & Co. (Kalverstraat E. 40, Amsterdam), Priced Catalogue of Plants, Seeds, &c.—Thos. S. Ware (Hale Farm Nurseries, Tottenham, London), Illustrated Catalogue of New and Rare Hardy Perennial Plants; also Spring Catalogue of Florists' Flowers, &c.—Mr. W. Potten (Seedsman, Sissinghurst, Staplehurst, Kent), Select List of Geraniums and other Bedding Plants.—Messrs. G. Gibbs & Co. (25 and 26, Down Street, Piccadilly, London, W.), Catalogue of Farm and Garden Seeds.—Mr. V. Lemoine (67, Rue de l'Etang, Nancy, France), Catalogue of Plants, Seeds, &c.—Messrs. V. P. Down & Co. (80, State Street, Albany, N.Y., U.S.A.) Illustrated Spring Catalogue of Vegetables, Fruit, Flowers, &c.—Messrs. Carter & Co. (237 and 238, High Holborn, London, W.C.), Illustrated Catalogue of Farm Seeds.—Mr. G. Such (South Amboy, New Jersey, U.S.A.), Catalogue of Plants and of French Hybrid Gladiolus.—Louis Van Houtte (Royal Nurseries, Ghent, Belgium), Illustrated Catalogue of Stove and Greenhouse Plants, Roses, &c.—Messrs. Dreer & Co. (Philadelphia, Pennsylvania, U.S.A.), Garden Calendar for 1876.—Mr. J. H. Gregory (Marblehead, Massachusetts, U.S.A.), Annual Catalogue of Vegetable and Flower Seeds, &c.—Messrs. Pounce & Sons (153, Queen's Road, Bayswater, W.), Gardeners' Calendar, Catalogue, &c., for 1876.

Communications Received.—J. B.—J. S.—W. G. S.—R. M. (thanks).—W. T. T.—Dickey Sam.—T. Todd.—T. P.—W. T.—J. H.

*** IMPORTANT NOTICE.—*The* Agricultural Gazette *is now* Published *on* Mondays, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, March 30.

We have no alterations to record. Trade keeps in the same stagnant state, and the supply of all classes of goods is in excess of the demand. *Jas. Webber, Wholesale Apple Market.*

Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1 0	2 6	Oranges, per 100	6 0	12 0
Cobs and Filbts., lb.	0 6	0 9	Pears, per doz.	3 0	10 0
Grapes, per lb	8 0	20 0	Pine-apples, p. lb.	1 6	4 0
Lemons, per 100	6 0	10 0	Strawberries, per oz.	0 6	1 6
Melons, each	0 0	0 0			

Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz.	4 0	..	Leeks, per bunch	0 2	0 4
— Jerusalem, p. lb.	0 3	..	Lettuces, per score	2 0	..
Asparagus (English), per bundle	7 0	12 0	Mint, green, bunch	0 6	1 0
— French	18 0	25 0	Mushrooms, per pott.	1 0	2 0
— Algerian	4 0	..	Onions, young, bun.	0 4	0 6
Beans, French, p. 100	1 3	2 6	Parsley, per bunch	0 4	..
Beet, per doz.	1 0	2 0	Peas, green, per lb.	1 0	..
Brussels Sprouts, lb.	0 4	..	Potatos (new), baskt.	1 0	..
Cabbages, per doz.	1 0	2 0	— new Jersey, p. lb.	0 6	1 6
Carrots, per bunch	0 6	..	— Sweet, per lb.	0 6	..
— new, do.	2 6	..	Radishes, per bunch.	0 1	0 3
Cauliflowers, p. doz.	2 0	4 0	— Spanish, doz.	1 0	..
Celery, per bundle	1 0	2 0	— French	0 6	..
Cucumbers, each	0 4	1 6	Rhubarb, per bundle	0 6	1 0
Endive, per doz.	1 0	2 0	Salsafy, per bundle	0 9	..
— Batavian, p. doz.	2 0	3 0	Seakale, per punnet	2 0	3 0
Herbs, per bunch	0 2	0 4	Shallots, per lb.	0 3	..
Horse Radish, p. bun.	3 0	5 0	Turnips, per bundle	0 4	..

Potatos — Rocks, 105s. to 110s.; Regents, 120s. to 170s.; Flukes, 130s. to 160s.; Victorias, 120s. to 160s. per ton.

Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per doz.	24 0	60 0	Genista, do.	9 0	24 0
Begonias, per doz.	6 0	12 0	Heaths, in var., doz.	12 0	30 0
Bouvardias, do.	12 0	18 0	Hyacinths, per doz.	9 0	18 0
Cineraria, per doz.	6 0	18 0	Lily of Valley, doz.	12 0	30 0
Crocus, do.		9 0	Mignonette, do.	6 0	9 0
Cyclamen, do.		14 0	Myrtles, do.	3 0	9 0
Cyperus, do.	6 0	12 0	Pelargoniums, scarlet, per doz.	6 0	9 0
Deutzia, do.	6 0	18 0	— in variety, doz.	18 0	36 0
Dielytra, do.	12 0	24 0	Primula sinensis, do.	6 0	12 0
Dracæna terminalis	30 0	60 0	Roses, Fairy, do.	9 0	15 0
— viridis, per doz.	18 0	24 0	— various, do.	18 0	30 0
Epacris, do.	12 0	18 0	Solanums, do.	6 0	24 0
Euphorbia jacquiniæfolia, per doz.	9 0	18 0	Tulips, do.	8 0	12 0
Ficus elastica	2 0	15 0	Veronica, do.	4 0	12 0
Fuchsia, per doz.	9 0	18 0			

CUT FLOWERS.

	s.d.	s.d.		s.d.	s.d.
Arum Lilies, per doz.	4 0	12 0	Narcissus, per dozen	1 0	3 0
Azaleas, 12 sprays ..	0 6	2 0	Nemophila, 12 bun.	4 0	6 0
Camellias	1 6	9 0	Pelargoniums, 12 spr.	1 0	3 0
Carnations, 12 blooms	2 0	4 0	— Zonal do. ..	0 6	1 6
Cineraria, per bunch	1 0	2 0	Pinks, white, p. doz.	2 0	4 0
Cyclamen, 12 blooms	0 3	0 6	Primula, dbl., p. bun.	1 0	1 6
Epiphyllum, p. doz.	1 0	3 0	Rhododend., 12 hds.	3 0	6 0
Eucharis, per doz. ..	6 0	12 0	Roman Hyacinths,		
Euphorbia, 12 spr. ..	4 0	9 0	12 sprays	1 0	3 0
Gardenia, per doz. ..	4 0	12 0	Roses, indoor, p. doz.	1 6	10 0
Heliotropes, 12 spr.	0 6	1 0	Spiræa, 12 sprays ..	1 0	4 0
Lily of Valley, 12 spr.	1 0	4 0	Stephanotis, 12 sprays	9 0	18 0
Mignonette, 12 bun.	6 0	9 0	Violets, 12 bunches..	0 6	2 0

SEEDS.

LONDON: *March* 29.—A brisk seasonable demand is now shown for all kinds of farm seeds, to which a little fine weather would impart a great additional impetus. The small stock of red Clover seed remaining unsold is being rapidly worked off, so that in the absence of any fresh foreign supplies values keep exceedingly firm. For white Clover there is an eager inquiry, which if it continues must soon clear the market of the article: a noteworthy feature of the past week has been the re-shipment of some white parcels to Germany. Alsike, on account of the extreme scarcity and dearness of white Clover, is attracting attention: it is not often that this variety realises less money than white. Trefoil keeps very dear, especially for fine qualities: the wholesale price for the best seed being £60 per ton. All grass seeds are steady. Spring Tares experience a slow sale, at a concession of 1*s.* to 2*s.* per quarter. In Mustard and Rape seed a good business is doing at the late advance: choice samples of either sort have become very rare. Canary seed, with a sluggish demand, is neglected, and currencies are consequently weaker. English Linseed moves off on fully former terms. Lucerne and Sainfoin find buyers at full rates. *John Shaw & Sons, Seed Merchants*, 37, *Mark Lane, London, E.C.*

CORN.

Trade at Mark Lane on Monday was quiet, and barely so firm in tone, though there was no material change in prices. Fine samples of English Wheat were held for quite as much money, while the previous Monday's rates were also supported for foreign Wheat. Choice Barley was firm, but other descriptions realised with some difficulty the quotations previously current. Malt was slow of sale and unaltered in price. Oats were dull, and in some instances rather cheaper on the week. Maize was steady, with little inquiry, and late prices were asked for Beans and Peas. American flour was somewhat dearer, but there was no improvement in other kinds.—On Wednesday the better qualities of both English and foreign were held for the extreme rates of Monday. Fine parcels of Barley were firm, but prices were somewhat irregular for inferior sorts. Malt remained dull, and the value of Oats had rather a downward tendency. Maize supported previous figures, and there was no change of importance in Beans, Peas, or flour.—Average prices of corn for the week ending March 25:—Wheat, 43*s.* 4*d.*; Barley, 33*s.* 1*d.*; Oats, 25*s.* 5*d.* For the corresponding week last year:—Wheat, 41*s.* 10*d.*; Barley, 41*s.* 8*d.*; Oats, 30*s.* 3*d.*

CATTLE.

At the Metropolitan Market on Monday trade in beasts was active, and choicest qualities rather dearer. Prices were lower for all kinds of sheep. A considerable number are now shorn, and make about 1*s.* per 8 lb. less than in the wool. Some choice lambs also are now coming to market, and make about 1*s.* per lb. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.*, and 5*s.* 6*d.* to 6*s.*; calves, 5*s.* 6*d.* to 7*s.*; sheep, 5*s.* 4*d.* to 5*s.* 8*d.*, and 6*s.* 4*d.* to 7*s.*; pigs, 4*s.* 4*d.* to 5*s.* 4*d.*—On Thursday the prices for beasts were rather against buyers, and sales closed slowly There was an irregular demand for calves, at, in some cases, lower prices. The prices for sheep were nearly as on Monday.

HAY.

Whitechapel report states that the supplies being rather large and the trade dull, prices on Tuesday were not in all instances maintained. Prime Clover, 100*s.* to 150*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 132*s.*; inferior, 55*s.* to 75*s.*; and straw, 35*s.* to 48*s.* per load.—On Thursday supplies were fair and trade quiet. Quotations:—Clover, best, 120*s.* to 150*s.*; inferior, 85*s.* to 95*s.*; hay, best, 112*s.* to 132*s.*; inferior, 55*s.* to 75*s.*; and straw, 35*s.* to 48*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 135*s.* to 147*s.*; inferior, 95*s.* to 126*s.*; superior Clover, 138*s.* to 155*s.*; inferior, 110*s.* to 126*s.*; and straw, 48*s.* to 52*s.* per load.

POTATOS.

The Borough and Spitalfields reports state that supplies of foreign Potatos are somewhat heavy. There are only moderate arrivals from our own districts, and for several descriptions a steady demand prevails at fully late rates. Kent Regents, 120*s.* to 150*s.* per ton; Essex ditto, 100*s.* to 130*s.*; rocks, 85*s.* to 110*s.*; kidneys, 100*s.* to 145*s.*; flukes, 130*s.* to 170*s.*; Victorias, 130*s.* to 160*s.*—The arrival of foreign Potatos into London last week included 51,267 bags, 804 tons 4 bushels, and 5322 sacks.

COALS.

In the market on Monday business was dull, and house coal gave way 1*s.* per ton. Wednesday's business was very dull, and another fall of 1*s.* per ton took place. Quotations: Walls Ends—Haswell, 20*s.* 6*d.*; Hawthorn, 17*s.* 6*d.*; Lambton, 20*s.*; South Hetton, 20*s.* 6*d.*; Chilton, 19*s.* 6*d.*; East Hartlepool, 20*s.* 3*d.*

The Grandest Quilled Asters.

BETTERIDGE'S

EXHIBITION PRIZE ASTERS,

New Varieties of 1876, now being sent out by

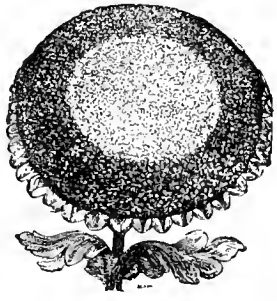
Carter's

IMPORTANT.

Mr. BETTERIDGE has placed in our hands for distribution the ENTIRE STOCK of these Superb Novelties.

Substantial evidence is shown of the superior excellence of Betteridge's Asters by the following extraordinary list of First-class Awards, &c., for stands of these strains during the past summer:—

First-class Certificate, Alexandra Palace,
Four First-class Certificates, Banbury,
First-class Certificate, Brighton
First Prize, Worcester,
First Prize, Bath,
First Prize, Witney,
First Prize, Alexandra Palace,
First Prize, Chipping Norton,
First Prize, Oxford,
First Prize, Stamford,
First Prize, Banbury,
First Prize, Woodstock.



SNOWFLAKE or SNOWBALL.
Pure snow-white.

PURPLE PRINCE.
Rich velvety purple.

PRINCE of NOVELTIES.
Bright crimson-lake, centre pure white.

PRINCESS ALEXANDRA.
A greatly improved form of "Duchess of Edinburgh." Bright crimson-rose, pure white centre.

Price per packet (each variety), as above .. 2s. 6d.
Price the Collection of four varieties .. 6s. 6d.

CELOSIA PYRAMIDALIS,

"Reid's Perfection."

The following is the Raiser's description:—

"A most effective ornamental plant, especially so by gaslight, and if properly managed will flower continuously for four or five months. After an active experience of upwards of half-a-century I am in a position to say that no such highly-selected variety can be produced on the Continent. Colour, the purest magenta."

Price per packet, 1*s.*

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The Queen's Seedsmen,
237 & 238, HIGH HOLBORN, LONDON, W.C.

For the Farm or Garden.

CABBAGE PLANTS, superior Bedfordshire-grown:—Early Enfield, York, and Nonpareil, at 3*s.* per 1000. Early Longpod BEANS, at 8*s.* 6*d.* per bushel; common Windsors, at 16*s.* per bushel; fine new English Scarlet Runner Beans, at 20*s.* per bushel. Forcing and Planting ASPARAGUS PLANTS, at 2*s.* 6*d.* to 7*s.* 6*d.* per 100. Double Scarlet DAISIES, at 2*s.* 6*d.* per 100; splendid large Crown Daisies, 5*s.* per 100. Splendid new flowering PYRETHRUMS, at 4*s.* per dozen. Beautiful Blue DELPHINIUMS, at 4*s.* per dozen. Terms, cash with orders. SEED POTATOS, and all other Seeds of best quality, at lowest prices.
CATALOGUES, &c, on application to
FREDERICK GEE, Seed Grower, &c., Biggleswade, Beds.

Seedlings, &c.

THE SUBSCRIBERS have still the following to offer; prices on application:—
SEEDLINGS:—2-yr. Scots Fir, Silver, P. Laricio, Acer Negundo, Ash (Common and Mountain), Beech, Chestnut (Horse and Sweet), Elm, Holly, Turkey Oak, and Sycamore; also 3-yr. Hornbeam, Norway Spruce, and P. Strobus.
TRANSPLANTED:—Larch, 1½ to 2½ feet; Scots Fir, 2-yr., 2-yr.; Silver Fir, 9 to 15 inches; Acer Negundo, 2 to 3, and 6 to 7 feet; Limes, 3 to 4 feet; Thorns, 1½ to 2 feet; Green Holly, 4 to 8 inches; Irish Ivy; I. Junipers, 4 to 5 feet; Thujopsis Borealis, 4 to 6 feet; Irish Yews, 4 to 5 and 6 to 7 feet; Vines of sorts 2-yr. from the eyes.
W. P. LAIRD AND SINCLAIR, Nurserymen, Dundee, Scotland.

RODGER, McCLELLAND AND CO. have to offer in good Plants as under:—
AURICULAS, nice flowering plants, in good variety, 20*s.* per 100.
PRIMROSE, Double Yellow, strong, 14*s.* per 100.
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ALYSSUM SAXATILE COMPACTA, 16*s.* per 100.
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VIOLA LUTEA GRIEVII, strong, would do to divide, 15*s.* per 100.
CRIMSON CLOVE CARNATION, 16*s.* per 100.
DAISIES, Red and White, 3*s.* 6*d.* per 100.
Aucuba-leaved, 10*s.* per 100.
FERULA COMMUNIS, in pots, 4*s.* per dozen.
ECHIUM GIGANTEUM, in pots, 4*s.* per dozen.
LATHYRUS LATIFOLIUS ALBUS, in pots, 6*s.* per doz.
" " SPLENDENS, in pots, 4*s.* per doz.
" ROTUNDIFOLIA GIGANTEA, in pots, 4*s.* per doz.
ECCREMOCARPUS SCABER, in pots, 4*s.* per doz.
TROPÆOLUM SPECIOSUM, in pots, 4*s.* per doz.
DRACÆNA DRACO, in pots, 6*s.* per doz.
TACSONIA VAN VOLXEMI, in pots, strong, 9*s.* per doz.
SEMPERVIVUM TABULÆFORME, in pots, 6*s.* per doz.
" BOLLII, in pots, 25*s.* per 100, 3*s.* 6*d.* per dozen.
ESCALLONIA PULVERULENTA, in pots, 6*s.* per dozen.
CARDAMINE PRATENSIS, fl.-pl., charming Spring Flowers, 16*s.* per 100.
PINUS INSIGNIS, 1-yr., single pots, 10*s.* per 100.
SPIRÆA FORTUNEI, 10*s.* per 100.
FUCHSIA GRACILIS, 20*s.* per 100.
" RICCARTONI, 25*s.* per 100.
YEW, English, 1 to 1½ foot, 15*s.* per 100; 1½ to 2 feet, 20*s.* per 100; 2 to 2½ feet, 25*s.* per 100.
THUJA PYRAMIDALIS, 2 to 3 feet, 16*s.* per 100; 3 to 4 feet, 25*s.* per 100.
ELDER, Variegated, 4 to 6 feet, 25*s.* per 100.
WALLFLOWER, Double Yellow, 3*s.* per dozen.
" German, strong, 8*s.* per 100.
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CAPITAL OLD TURF for SALE, at per ton. Apply to
Black Boy Hotel, Bewdley.

COCOA-NUT FIBRE REFUSE (newly made), 20 bushels, 6*s.* 8*d.*; 20*s.* per 100 bushels, 45*s.* per 300 bushels. Larger quantities contracted for.
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COCOA-NUT FIBRE, as supplied to H.R.H. the Prince of Wales, the Emperor of Germany, Messrs. Veitch & Co., and thousands of Nurserymen, Gardeners, and others, is INVALUABLE for Forcing and Plunging, a wonderful incentive to growth of Flowers, Vegetables, &c. 20 bushels, 6*s.* 8*d.*; 50 for 12*s.* 6*d.*; truck, 45*s.*; sample bag, 2*s.* 6*d.*; delivered free on to rail or within 5 miles.
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BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s.* per truck.
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SEVENOAKS PEAT.—To be Sold in large or small quantities, delivered at Station, free on Rail.
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GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. Sold Retail by Seedsmen, in boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.* Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

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Manufacture the highest quality of
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ODAMS' MANURES,
FOR ALL CROPS
Manufactured by the NITRO-PHOSPHATE and ODAMS' CHEMICAL MANURE COMPANY (LIMITED), consisting of Tenant-Farmers occupying upwards of 150,000 Acres of Land
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Sold in Bottles at 1s. 6d. and 3s. each,
By all Seedsmen and Nurserymen, and wholesale by the sole agents for England.
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The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
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2 yards wide .. .. 1*s.* 10*d.* per yard run.
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JULIUS SAX'S ELECTRIC CONSERVATORY THERMOMETERS, for HEAT and COLD, will be found invaluable. They give an instantaneous alarm of any change of temperature likely to be injurious to Plants. The Trade liberally dealt with. Apply
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THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.

GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.
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Agents for LOOKER'S PATENT "ACME FRAMES," PLANT COVERS and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.
Illustrated Price Lists free by post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheets, of plain or more elaborate designs, with prices, sent for selection
WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds, Roofing Tiles in great variety, Slates, Cements, &c.
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SILVER SAND, fine or coarse grain as desired. Prices by Post per Ton or Truck Load, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.
FLINTS and BRICK BURRS for Rockeries or Ferneries.
KENT PEATS or LOAM supplied at lowest rates in any quantities.
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N.B.—Orders promptly executed by Rail or to Wharves.
A liberal Discount to the Trade.

FOWLER'S PATENT STEAM PLOUGH and CULTIVATOR may be SEEN at WORK in every Agricultural County in England.
For particulars apply to JOHN FOWLER AND CO., 71, Cornhill, London, E.C.; and Steam Plough Works, Leeds.

THE
IMPROVEMENT OF LANDED ESTATES,
By DRAINAGE, ENCLOSING, CLEARING, and the ERECTION of FARM BUILDINGS and COTTAGES.
The Land, Loan, and Enfranchisement Co.
(Incorporated by special Act of Parliament),
ADVANCES MONEY:
1st—To the OWNERS of SETTLED and OTHER ESTATES, for the Erection of Farm Buildings and Cottages, and for the Drainage, Irrigation, Enclosing, Clearing, and General Improvement of Landed Property in any part of the United Kingdom.
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The amount borrowed, with the expenses, would be charged on the estate benefited, and repaid by a rent-charge, terminating in twenty-five years.
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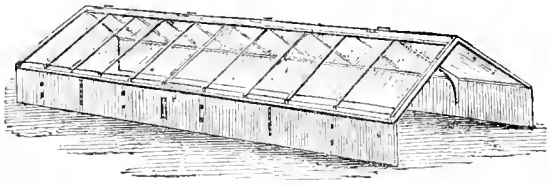

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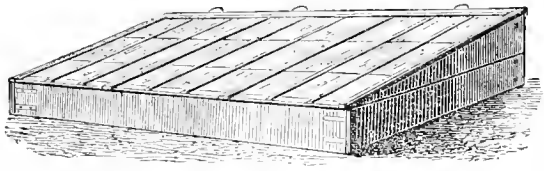

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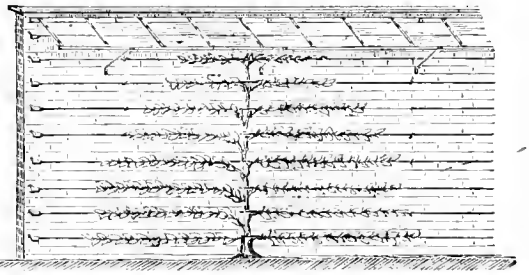

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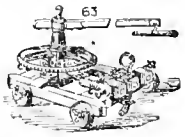

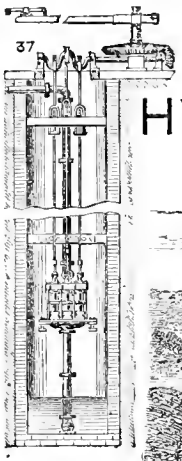

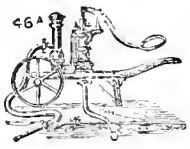

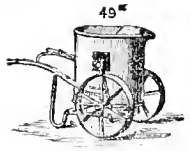

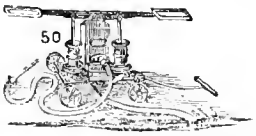

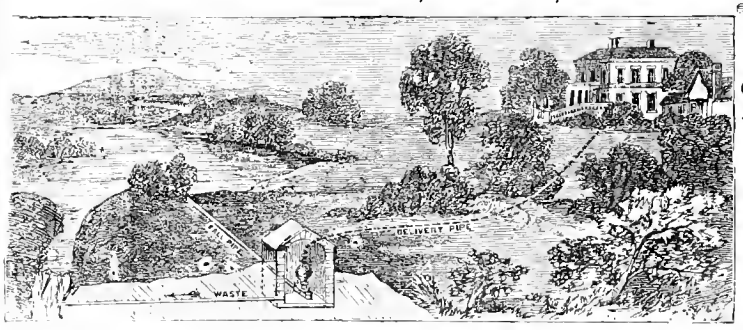

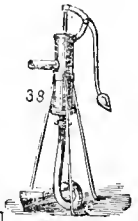

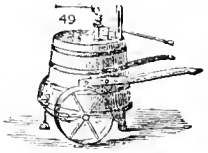

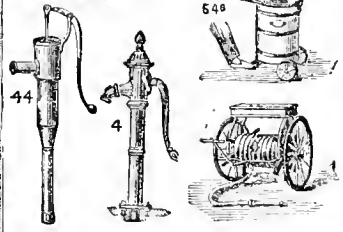

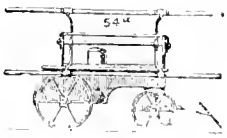

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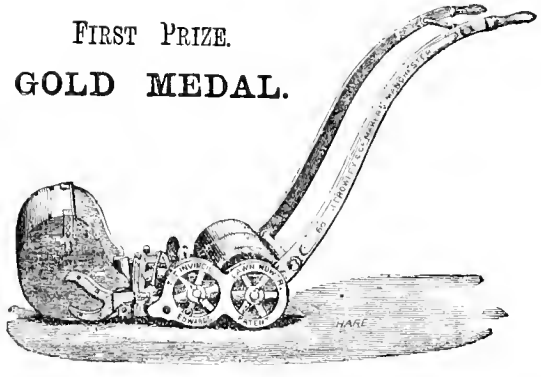

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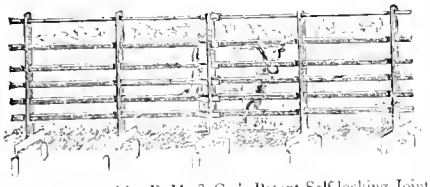

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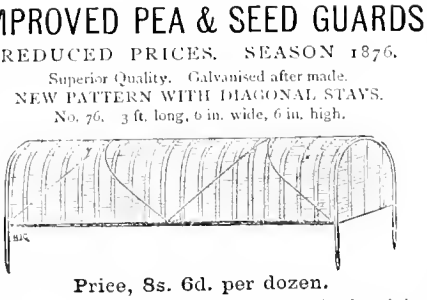

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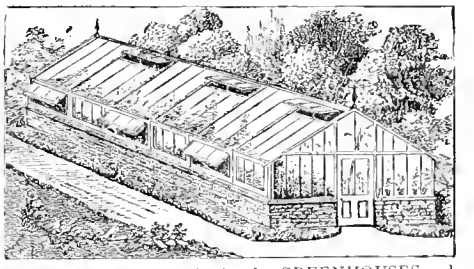

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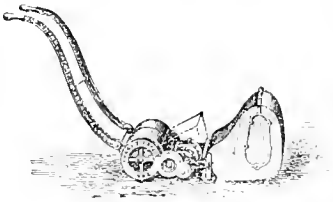

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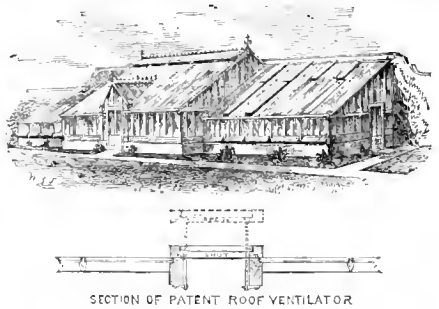

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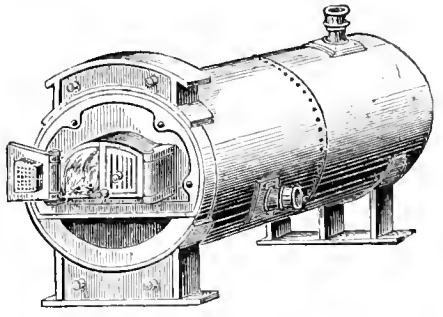

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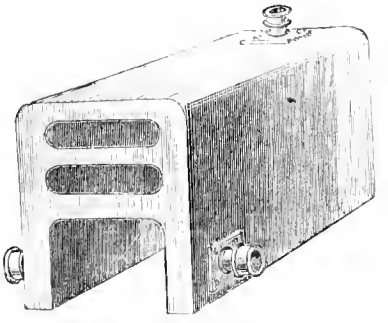

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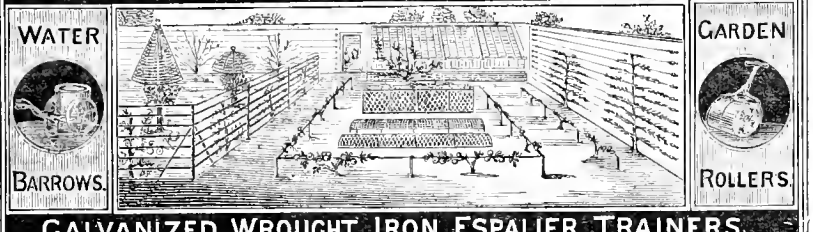

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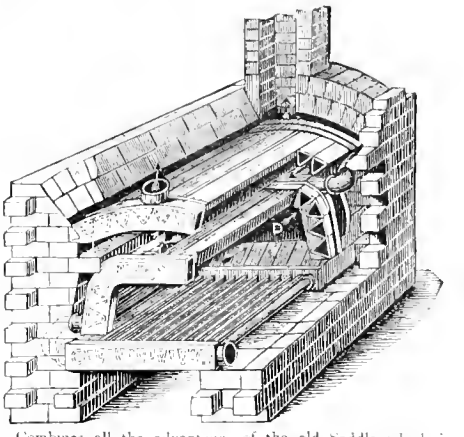

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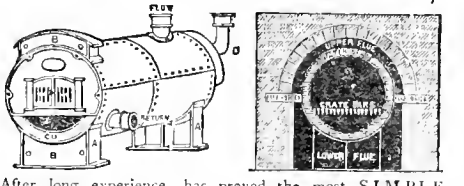

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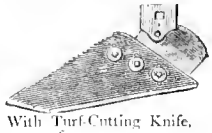
To cut 10 inches ... ... Ditto.	3	10	0
To cut 12 inches ... ... Can be worked by one Person.	4	15	0
To cut 14 inches ... ... Ditto.	5	16	0
To cut 16 inches ... ... Can be worked by one Person on an even Lawn.	6	17	0



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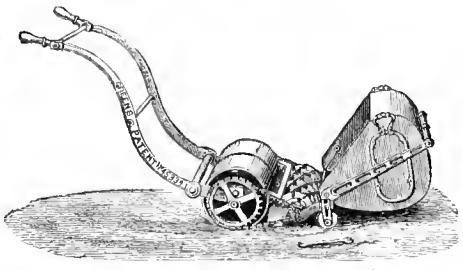

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To cut 18 inches ... ... Can be worked by a Man and Boy.	8	0	0
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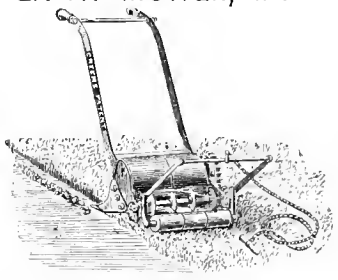

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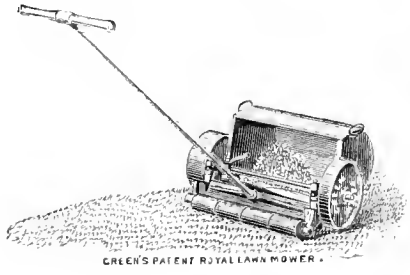

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„ 12 „	3	5	0
„ 14 „	4	0	0
„ 16 „	5	0	0

With Gearing on Each Side.

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„ 20 „	7	0	0
„ 22 „	7	10	0
„ 24 „	8	0	0

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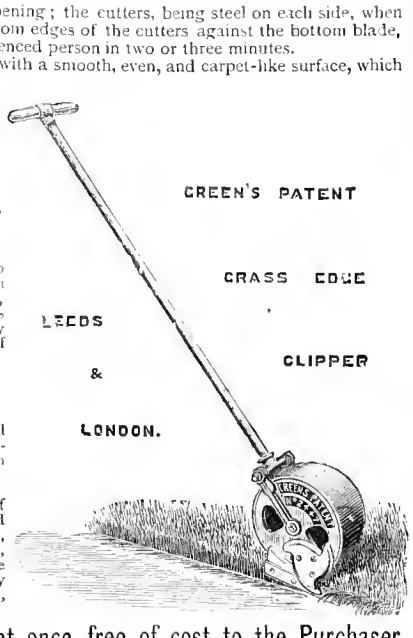

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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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NOTICE to ADVERTISERS.

FRIDAY NEXT, *April* 14, *being* GOOD FRIDAY, *the* "GARDENERS' CHRONICLE" *will be published on* THURSDAY, *at 2 p.m.*

ADVERTISEMENTS *for* NEXT WEEK *must therefore reach the Office not* LATER *than* WEDNESDAY MORNING, *the* 12*th inst.*

ALEXANDRA PALACE. — The FIRST GREAT FLOWER SHOW of the Season will be held on FRIDAY and SATURDAY, May 5 and 6. Last day of entry, April 28.

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BRUCE FINDLAY.
Royal Botanic Gardens, Manchester.

READING HORTICULTURAL SOCIETY'S SHOWS will be Held on MAY 18 and AUGUST 17, 1876, when PRIZES to the value of TWO HUNDRED and EIGHTY GUINEAS will be given away. Schedules to be obtained of
10, Forbury, Reading. F. PETTY, Hon. Sec.

SUTTON'S GRASS SEEDS for PASTURES, 22s. 6d. to 36s. per Acre. Carriage free.

SUTTON'S GRASS SEEDS for PARK GROUNDS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for GARDEN LAWNS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for CROQUET GROUNDS, 20s. per Bushel. Carriage free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to intimate that he has just issued a SUPPLEMENTARY LIST to his General CATALOGUE of New and Rare Plants at considerably reduced prices, and which will be forwarded free to all applicants, either by himself or by his Agents,
Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

CARTER'S GRASS SEEDS for Lawns and Parks, 20s. per bushel.

CARTER'S GRASS SEEDS for Permanent Pastures, 22s. 6d. to 36s. per acre.

CARTER'S GRASS SEEDS. Carriage Free. To suit all Soils.

CARTER'S GRASS SEEDS for Renovating Meadows and Lawns, 18s. to 20s. per bush.

CARTER'S, THE QUEEN'S SEEDSMEN, 237 and 238, High Holborn, W.C.

Special Offer.—Vesuvius, Mrs. Pollock.

WILLIAM BADMAN offers good plants of Vesuvius, from single pots, 10s. per 100, 85s. per 1000; Mrs. Pollock, 15s. per 100; Crystal Palace Gem, 15s. per 100, Package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

New Roses for 1876.

H. BENNETT offers a careful selection of the above, in plants not to be equalled; unusually fine this season; ready in March. DESCRIPTIVE LISTS post-free.—Manor Farm Nursery, Stapleford, Salisbury.

LILIUM AURATUM.—Unusually large, heavy, and plump Bulbs of this beautiful Lily, at 1s., and 6os. per dozen.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Verbenas, Verbenas, Verbenas.

WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well-rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

VERBENAS, VERBENAS, VERBENAS. —White, Purple, Scarlet, and Pink; also twelve extra choice named varieties, strong, healthy-rooted cuttings, perfectly free from disease, 6s. per 100, 50s. per 1000, for cash.
H. BLANDFORD, The Dorset Nurseries, Blandford.

Verbenas, Verbenas.

JOHN SOLOMON offers White, Scarlet, Purple, Pink, Crimson, Rose, and other mixed sorts, good strong spring-struck cuttings, well rooted, at 6s. per 100, 50s. per 1000, package included. Cash to accompany all orders.
Islington Nursery, Park Street, Islington, N.

CALCEOLARIA AUREA FLORIBUNDA and GOLDEN GEM, autumn-struck, clean, healthy, and vigorous, 5s. per 100, 40s. per 1000.
Package free "cash." Post-office Order on Chester.
FIELD BROTHERS, Tarvin Road Nursery, Chester.

Plant Catalogue.

CHARLES TURNER'S DESCRIPTIVE LIST of PLANTS for the Season, including several new varieties now offered for the first time, is ready, and may be had on application.
The Royal Nurseries, Slough.

Notice.—Seeds, Seeds.

WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds.
CATALOGUES now ready, which contain every requisite, at fair prices, post-free on application.
Highgate, London, N.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Hardy Florists' Flowers.

THOMAS WARE'S (1876) SPRING CATALOGUE of the above, including Chrysanthemums, Delphiniums, Pansies, Pæonies, Phloxes, Pentstemons, Pyrethrums, and others, may be had, post-free, on application.
Hale Farm Nurseries, Tottenham, London.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.
Mr. WEBB, Calcot, Reading.

CONSIGNMENTS wanted of best FRUITS and VEGETABLES by GEO. LANTON, JUN., Salesman, Covent Garden Market. Unexceptionable reference as to cash returns.

WANTED, for April 23, Nine Dozen Cut Blooms of PERPETUAL and TEA ROSES. Please send quantities that can be supplied, with terms, to
CHARMAN AND SONS, Heath End Nursery, Farnham, Surrey.

WANTED, a quantity of EUONYMUS (Green), from 1 to 2 feet high, nice bushy stuff; also large well-grown FICUS ELASTICA, and hardy PALMS and FERNS. Send sizes and prices to
G. REEVES SMITH, Aquarium, Brighton.

EUCALYPTUS GLOBULUS (Blue Gum of Australia).—A supply of Seed always kept on hand from the establishment of Messrs. Thomas Lang & Co., Melbourne.
JOHN WILSON, Seedsman, Whitehaven.

LARCH.—10,000, 1 to 1½ foot, at 15s. per 1000; 10,000, 1½ to 2 feet, at 25s. per 1000; 5,000, 2½ to 3½ feet, at 35s. per 1000.
JAMES SMITH, Darley Dale Nurseries, Matlock.

Thorns, Thorns, Thorns.

PARKER AND BUSH offer extra strong THORN QUICK, 1 to 3 feet, three times transplanted. Price and samples on application.
St. Michael's Hill Nursery, Bristol.

April the Best Month for Planting Evergreens.

COMMON LAURELS, 100,000, 2 to 4 feet. PORTUGAL LAURELS, and other Evergreens. CATALOGUES on application. Address
WM. WOOD AND SONS, The Nurseries, Maresfield, Uckfield, Sussex.

FOX and GAME COVERT.
ENGLISH FURZE, 1-yr., 5s.; 2-yr., 10s. per 1000.
ENGLISH BROOM, 1-yr., 8s.; 2-yr., strong, 15s. per 1000.
W. MAULE AND SONS, The Nurseries, Bristol.

RHODODENDRONS.
2-yr. seedlings, 4 to 8 inches, transplanted.
3 yr. seedlings, 6 to 10 inches, transplanted.
8 to 12 inches, transplanted.
For Prices and Samples apply to
HENRY FARNSWORTH, Matlock Bank, Derbyshire.

ALTERNANTHERAS MAGNIFICA and PARONYCHIOIDES.—Good strong, sturdy stuff, shaken out of pots, and forwarded free at 10s. per 100.
WILLIAM HOLMES, Frampton Park Nursery, Hackney.

Phlox, herbaceous.

H. BLANDFORD has a large and splendid Collection of the above; extra strong plants in pots, 5s. per dozen, 35s. per 100. The usual discount to the Trade.
The Dorset Nurseries, Blandford.

STRAWBERRIES in POTS, Established, for Forcing and Planting. For prices, &c., apply to
JAMES DICKSON & SONS, "NEWTON" Nurseries, Chester.

FOR SALE, AMERICAN EARLY ROSE POTATOS, good clean sets for seed, grown on light land; £7 per ton, 12s. per sack of 2 bushels. Sacks, 1s. 6d. each. Send cash with order to
S. BIDE, Alma Nursery, Farnham.

Smith's Curly Potatos (True).

STUART AND MEIN, Kelso, N.B., have a quantity of the above to offer to the Trade. Fine sample.

Asparagus.—Plant Now.

CONOVER'S COLOSSAL and GIANT.—Half a million, 1-yr., 15s.; 2-yr., 2nd-yr. plants.
Special prices on application to
JAMES DICKSON & SONS, "NEWTON" Nurseries, Chester.

To the Trade.

ASPARAGUS, 1-yr., 2-yr., and 3-yr. TROPÆOLUM CANARIENSE.
JAMES BIRD, American Nurseries, Downham.

ORCHARD-HOUSE TREES, Fruiting in Pots. Peaches, Nectarines, Plums, Pears, Apples, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

Mangel and Swede.

JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself.
Bardney Manor, Lincoln.

To the Trade Only.

MANGEL.—Special quotation for our guaranteed true and extra selected stocks, on application to F. SANDER AND CO., Seed Growers, St. Albans.

To the Seed Trade.

H. AND F. SHARPE'S special SPRING CATALOGUE of home-grown MANGEL WURZEL, TURNIP, and other AGRICULTURAL and GARDEN SEEDS, is now ready, and will be forwarded on application.
Seed Growing Establishment, Wisbech.

DICK RADCLYFFE AND CO. supply every requisite for the Seed Trade. Special offers of GARDEN STICKS and LABELS, FLOWERS for Easter Decoration, WHITE CAPES, WREATHS, &c., with Lists, on application.
127 and 129, High Holborn, W.C.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDENERS, and EXPORTERS of BULBS and VALUABLES, 25, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Hothouses, Hot-water Apparatus, &c.

HALLIDAY AND CO., HOTHOUSE BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates and Plans free. Best Construction, Best Materials, Best Workmanship. Catalogues free.
Offices, &c., Porter Arcade, MANCHESTER.

SALES BY AUCTION.

Auction Mart, Tokenhouse Yard, E.C.

IMPORTANT SALE of Established and Semi-established ORCHIDS, LILIUM AURATUM, fine POT ROSES, &c.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, in the Large Estate Room, at the Mart, Tokenhouse Yard, E.C., on MONDAY, April 10, at half-past 11 o'Clock precisely, a valuable Collection of choice Established and Semi-established ORCHIDS, including Odontoglossum Insleayi, variety leopardinum, O. citrosmum, O. roseum, O. nebulosum, O. membranaceum, O. Rossii majus; Cattleya citrina, C. crispa; several Lælia purpurata, L. albida, L. autumnalis; Angræcum eburneum and virens; Dendrobium Dalhousianum, D. Pierardii, D. japonicum; Oncidium rostrans, O. Cavendishianum; Aerides odoratum, several Vanda Bensonæ, V. tricolor, and others. Also fine CYATHEA MEDULLARIS, PANDANUS VEITCHII, DRACÆNAS, &c.; 100 fine GARDENIA FLORIDÆ, coming into flower, beautifully grown TEA ROSES, SPIRÆAS, and CYCLAMENS in flower; about 3000 LILIUM AURATUM, just arrived from Japan in fine condition.

On view morning of Sale. Catalogues may be had at the Mart, and of Messrs. Protheroe & Morris, 98, Gracechurch Street, E.C.

IMPORTANT SALE of a First-class Collection of CARNATIONS, PICOTEES, and PINKS of fine growth; 500 Standard and Dwarf ROSES of the best varieties, selected hardy CONIFERÆ and EVERGREEN SHRUBS, AMERICAN PLANTS, Choice CAMELLIAS, AZALEAS, and other plants in flower, GLADIOLI SEEDS, DAHLIAS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION the above at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, April 11, at half-past 12 o'Clock precisely.

On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Woodford, Essex.—For Occupation or Investment.

SIX ACRES of fine, rich MARKET GARDEN or NURSERY LAND, with SEVEN-ROOMED DWELLING-HOUSE and OUTBUILDINGS standing thereon, held for an unexpired term of 45 years at a moderate ground rent.

MESSRS PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on MONDAY, April 24, at 2 o'Clock punctually, the valuable LEASEHOLD ESTATE known as Lucas' Farm, situate opposite the old Mill Inn, Woodford, Essex, and in a locality where there is a great demand for produce.

May be viewed prior to the Sale. Particulars of Sale had on the Premises, and of the Auctioneers, 98, Gracechurch Street, City, and Leytonstone, E.

Specimen Plants, Lilies, Orchids, and Seeds.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, April 10, at half-past 12 o'Clock precisely, a collection of SPECIMEN, HALF-SPECIMEN, and ORNAMENTAL FOLIAGE PLANTS, suitable for Table and House Decoration, consisting of Palms, New Dracænas, and many other new and rare Stove Plants; plants grown at J. W. Wimsett's Ashburnham Park Nursery, Chelsea; also nice young healthy plants of Xanthoceras Sorbifolia, the most beautiful and hardy flowering Shrubs; extra fine bulbs of the extremely rare Lilium polyphyllum, L. Wallichianum, L. neilgherrense, L. Maximowiczii, L. dalmaticum, &c.; fine growing clumps of hardy North American Ferns, Chinese and Japanese Seeds, several importations of Orchids, an importation of Coniferous Tree Seeds, fine bulbs of Lilium Krameri, 100 Cypripedium spectabile, &c.

On view the morning of Sale, and Catalogues had.

Castle Nursery, Lower Norwood.—Surplus Stock.

MR. J. C. STEVENS has received instructions from Mr. James to SELL by AUCTION, on TUESDAY, April 11, at 12 o'Clock precisely, on the Premises, Castle Nursery, Lower Norwood, GREENHOUSE PLANTS, including large Specimen Camellias, Epacris, a choice lot of Epiphyllums in eight varieties, 50 Indian Azaleas, well set with buds; 100 Epacris and Ericas, 100 Cyclamen persicum, Tree Carnations, &c.; also a quantity of STOVE PLANTS, including Stephanotis floribunda, 16 Gardenias, 50 Bouvardias, 20 Crotons, 80 Dracænas, 4 fine Encharis amazonica, 6 Adiantum Farleyense, 50 mixed Stove Plants, all young, thriving stock, and about 250 lots of ESTABLISHED ORCHIDS, including Phalænopsis Schilleriana and grandiflora, some fine plants of Dendrobium Falconeri, Cattleya crispa and labata, Odontoglossum Alexandræ, &c. Many of them will be in flower.

On view the day prior and morning of Sale, and Catalogues had at the Castle Nursery, Lower Norwood; and of Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

The Nursery is situate two minutes' walk from the Lower Norwood Station.

Sale of the Collection of Orchids formed by the late S. RUCKER, Esq., of Wandsworth.

MR. J. C. STEVENS has received instructions from Messrs. James Veitch & Sons, of Chelsea, to offer for SALE on WEDNESDAY, April 12, the Collection of ORCHIDS recently purchased by them from the Executors of the late S. Rucker, Esq. This Collection comprises many fine and rare kinds. It was formed by Mr. Rucker during the last five years, and it is not too much to say that almost every plant was selected for its variety. The plants are healthy, vigorous, young-growing specimens, and well worthy the attention of all Orchid growers. Amongst others will be found the following:—

- Oncidium Rogersii (true), the only plant at present saleable in England
- Lælia anceps Dawsoni
- Odontoglossum vexillarium (strong)
- ,, Roezlii (strong)
- ,, Alexandræ (several)
- Masdevallia Wallisii (true)
- ,, tovarensis
- ,, Harryana
- ,, Lindeni
- ,, Veitchii
- Dendrobium Wardianum
- ,, crassinode
- ,, aggregatum majus (splendid masses)
- ,, Jamesianum (very fine)
- Phalænopsis grandiflora
- ,, amabilis
- ,, Schilleriana (a very fine lot of all the kinds)
- Cattleya labiata (true autumn-flowering varieties)
- ,, Mendelii (splendid plants), &c.

On view the morning of Sale, and Catalogues had.

New Phalænopsis.

Quite distinct, and just arrived direct from Singapore.

MR. J. C. STEVENS will include in his Sale at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, April 13, about a dozen plants of a grand-looking and entirely new PHALÆNOPSIS. To be sold without the slightest reserve.

On view the morning of Sale, and Catalogues had.

Flowering Orchids.

MR. J. C. STEVENS will include in his Sale, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, April 13, 100 FLOWERING ORCHIDS (in flower or bud), and comprising many fine and distinct varieties of Odontoglossum Roezlii, O. citrosmum, O. Phalænopsis, and the rare O. coronarium, Oncidium Weltoni, O. macranthum, O. infundibulum, Masdevallia Harryana, &c., the property of Messrs. J. Backhouse & Son, York.

On view the morning of Sale, and Catalogues had.

Important Sale of Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, April 13, at half-past 12 o'Clock precisely, a few very rare and choice ORCHIDS just arrived per *Mondego* from Brazil, collected by Mr. H. Blunt, and consisting of some very fine plants of CATTLEYA LABIATA, which he says is quite distinct from the variety he sent home some years ago, and which is known as the Warneri variety. This variety flowers in the autumn, but the Warneri variety flowers in May, and, therefore, he considers this to be the true labiata.

Also some fine masses of CATTLEYA CRISPA ROSEA, which the collector speaks of as a very lovely plant, with sepals and petals of a lively Rose. This plant is very rare.

A few fine strong plants of a CATTLEYA, which was received from a Gentlemen from the locality of CATTLEYA AMETHYSTOGLOSSA, and considered from the appearance of the plants to be true.

A quantity of CATTLEYA BULBOSA: among them will be found several varieties.

Also a quantity of a CATTLEYA in the way of HARRISONIANA, but quite distinct from that species. Mr. Blunt says it is a very fine thing, the colour of the flower is the brightest magenta. When this plant becomes known it will become a great favourite.

Some splendid masses of ONCIDIUM CONCOLOR and MARSHALLIANUM, probably the best pieces ever imported.

Also several other fine things.

All the above are in the finest condition psssible.

On view the morning of Sale, and Catalogues had.

Pine-apple Nursery, Edgware Road, W.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions from Mr. J. Weeks to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., almost without reserve, on THURSDAY, April 20, at half-past 12 o'Clock precisely, the Valuable PREMISES and GOODWILL of the PINE-APPLE NURSERY, Maida Vale, Edgware Road, W., together with Dwelling-house, Seed Shop, and Offices, and all the extensive ranges of Horticultural Buildings and Sheds.

Held:—As to part, for a term which will expire in 1909, at a Ground-rent of £45; and, as to the remainder, for a term which will expire in 1923, at a Ground-rent of £89. The Nursery has, within the last three or four years, been very greatly enlarged and improved, upwards of £10,000 having been expended in additions, improvements, and repairs; and it is considered in the Trade to be the most important Establishment of the kind in the World. It possesses an extensive connection both in the Nursery and Seed Trade, amongst the Nobility and Gentry and their Gardeners. Part of the purchase-money may remain on Mortgage.

Nurseries in the immediate neighbourhood of London are seldom valued by the acre; but this is an exception, as the Horticultural Buildings and Show-grounds cover about 2½ Acres, and form a most valuable property.

For further particulars apply to Messrs. KEARSEY, SON, AND HAWES, 35, Old Jewry, London, E.C.; and Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

Odontoglossum cirrhosum.

PRELIMINARY NOTICE.

MR. J. C. STEVENS has received instructions from Mr. Wm. Bull to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, April 24, at half-past 12 o'Clock precisely, about 200 plants of the new and marvellously beautiful ODONTOGLOSSUM CIRRHOSUM. A plant of this extremely handsome new introduction has just flowered for the first time, and was exhibited at the Royal Horticultural Society's meeting on Wednesday last, when it elicited unusual admiration, and was unanimously awarded the First-class Certificate it so justly merited.

On view the morning of Sale, and Catalogues had.

Sale of a very Valuable Collection of Specimen and Half-specimen STOVE and GREENHOUSE PLANTS, the whole of which have been exhibited.

ARTINGSTALL AND HIND (the surviving Partners of the late Firm of CAPES, DUNN & Co.) beg to announce that they have received peremptory instructions from Messrs. E. Cole & Sons, owing to their want of space, to SELL by AUCTION, on WEDNESDAY and THURSDAY, April 19 and 20, commencing at 12 o'Clock prompt, at their Nurseries, Withington, near Manchester, the whole of their valuable Collection of EXHIBITION PLANTS.

May be viewed one week prior to the Sale, and Catalogues then had at the Nurseries; or now, together with further information, by applying to the Auctioneers, 51, Princess Street, Manchester.

Nursery Seed and Floral Business.

THE PROPRIETOR of an Established Business in the above line, carried on for twenty-five years with success in one of the chief towns of the important county of Hampshire, is desirous of DISPOSING OF IT The Premises include a substantially built and handsome House with noble Shop situated in the best part of the principal street. Connected with and contiguous to the business are 3 acres of good Nursery Ground on which are Stove, Greenhouses, Vineries, Pits, &c. The Land is approached by good public roads from an improving neighbourhood, and is surrounded and overlooked by villa residences.

Address in the first instance by letter, M. A., Messrs. Hurst & Son, 6, Leadenhall Street, London, E.C.

Southampton (3170)—Two Miles from.

TO BE LET, with Early Possession, a MARKET GARDEN, comprising 26 acres of rich and productive Land, a portion cropped with Fruit Trees, in good bearing condition. Convenient DWELLING HOUSE, Two Men's COTTAGES, good OUTBUILDINGS, &c. The Business is a lucrative one, having a large shipping contract attached thereto. Apply to

PROTHEROE AND MORRIS, Auctioneers, Estate Agents, and Valuers, 98, Gracechurch Street, E.C.; and Leytonstone, E

Southsea (3171)—In the choicest part of this Fashionable Watering Place.

A SMALL NURSERY, presenting a capital opening to an enterprising Florist. The Land has 100 feet frontage, and a depth of 150 feet, and is covered with Nine newly-erected Greenhouses, heated on modern principles, and mostly planted with productive Vines. Rent, £100 per annum. Stock optional. Price, Freehold, £2000. Apply to

PROTHEROE AND MORRIS, 98, Gracechurch Street, E.C.

TO BE SOLD, by PRIVATE CONTRACT, the GOLDEN CROSS NURSERIES, with extensive Glasshouses, Dwelling-house, &c., situate near Stroud, Gloucestershire. Apply to

RESTALL AND FORD, Auctioneers, Stroud.

THE GUARDIANS of the WARE UNION are willing to LET on LEASE a SMALL SEWAGE FARM, 20 miles from London, close to a Railway Station and the River Lea. The Land is admirably adapted for Market Garden and Nursery purposes. For full particulars and terms apply to Mr. A. M'KENZIE, Land Agent, Hoddesdon.

By order of the Board,
GEO. GISBY, Clerk to the Board.

Ware, March 28, 1876.

To Nurserymen, &c.—Centre of Lake District.

VALUABLE NURSERY GARDENS and SEED BUSINESS for DISPOSAL.

TO BE SOLD, to a Private Purchaser or Otherwise, at an early date, an old-established NURSERY and SEED BUSINESS in good condition, situate in the most favourable and central part of the English Lake district, doing a capital trade, with a most respectable and extensive connection, chiefly ready money. Nursery about 8 acres. Stock, &c., at valuation. Suitable for an energetic person with a moderate capital. The Nursery has been laid out at considerable cost, and is largely visited by visitors to the Lake District. An extensive Wholesale and Retail Fruit and Seed Business is carried on in connection with the Nurseries. For particulars, apply to

Messrs. MOSER AND SONS, Solicitors, Kendal; Mr. G. C. COOKMAN, 18, Southampton Street, Strand, London, W.C.; or to Mr. WM. BARTON, Ambleside.

BATH and WEST of ENGLAND SOCIETY (Established 1777), and SOUTHERN COUNTIES MEETING.

HEREFORD MEETING, JUNE 5, 6, 7, 8, and 9, 1876.

ENTRIES of LIVE STOCK, IMPLEMENTS, WORKS of ART, &c., CLOSE APRIL 12, after which date no Fees or Entries can be received.

POULTRY ENTRIES CLOSE MAY 6.

FORMS and all information supplied on application to

JOSIAH GOODWIN, Sec.
4, Terrace Walk, Bath.

Verbenas.

JOHN CARTER, NURSERYMAN, Keighley, begs to offer fine strong VERBENAS from Cutting-pots, well-hardened off, Crimson, Scarlet, and Purple, at 6s. per 100, 50s. per 1000, for cash.

Cinerarias—Hardy's Champion Strain.

H. J. HARDY has much pleasure in calling special attention to his splendid strain of Cinerarias now in bloom. Specimen flowers may be had free by post. Seed, 1s., 2s. 6d., and 5s. packets.

Stour Valley Seed Grounds, Bures, Essex.

Grass Seeds.

BOLTON AND CO. have to offer fine new GRASS SEEDS for Permanent Pasture, and shall be happy to forward prices to buyers. Very liberal terms to large purchasers.

BOLTON AND CO., Seed Merchants, Wood Green, London, N.

SEAKALE, for Forcing, fine, 60s. per 1000; Seakale, very fine, Planting, 30s. per 1000.

DWARF ROSES, 20s. per 100. For cash only with orders.

RICHARD LOCKE, Alexandra Nurseries, Redhill, Surrey.

CENTAUREA RAGUSINA, fine plants, established in single pots, 20s. per 100, cheaper out of pots. THYMUS CITRIODORUS AUREUS MARGINATUS, established plants from open ground, 3s. per 50; 5s. per 100; 21s. per 500; 40s. per 1000.

J. J. MARRIOTT, Highfield Nurseries, Matlock, Derbyshire.

PLANT NOW.

PORTUGAL LAURELS, 3 feet, 40s.; Common ditto, 4 to 5 feet, 30s.; Scarlet Flowering CHESTNUT, 10 to 12 feet, Standards, 60s.; BIOTA COMPACTA, 4 to 5 feet, 60s.; CUPRESSUS LAWSONI, 3 to 4 feet, 50s.; THUJA GIGANTEA, 4 feet, 60s.; HOLLY, 1½ foot, 20s.; YEWS, 1½ foot, 20s. per 100; White American SPRUCE, 3 to 4 feet, fine, 30s. per 100. All very fine.—J. JACKSON, Nursery, Kidderminster.

To the Trade.

DICKSON, BROWN AND TAIT, SEED MERCHANTS, 43 to 45, Corporation Street, Manchester, can offer the following strong FRUITING VINES, viz.:—Muscat of Alexandria, Lady Downe's Seedling, Madresfield Court, Gros Colman, &c. Prices, very low, on application.

CENTAUREA CANDIDISSIMA, in single pots, nice plants, 20s. per 100, package included. Not less than 25 at the above price. Half to quarter specimens.

KALOSANTHES COCCINEA, will set for flower, 3s. 6d., 5s., to 7s. 6d. each.

JOHN HOUSE, Eastgate Nurseries, Peterborough.

The Most Beautiful new Regal Pelargonium is

BEAUTY OF OXTON,

Price, 1 guinea each.

A pretty and charming novelty is the new double-flowering IVY-LEAVED PELARGONIUM, "KONIG ALBERT" Price 7s. 6d. each.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Important to Farmers.

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HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,

KNAP HILL NURSERY, WOKING, SURREY.

THE

NEW PLANT AND BULB COMPANY

OFFER THE FOLLOWING:—

ODONTOGLOSSUM ALEXANDRÆ.

ORCHIDS, various choice.

AMARYLLIS (HIPPEASTRUM), the finest strain in commerce (First-class Certificates and many First Prizes).

XANTHOCERAS SORBIFOLIA (First-class Certificate), the most beautiful of Hardy Flowering Shrubs.

PHORMIUM TENAX VARIEGATA, for Sub-tropical Gardening.

FERNS, Tree and other choice, &c., &c.

The above are all fine Plants and in the most perfect health, and at very moderate prices.

See our SPECIAL LIST, published this week, free on application.

LION WALK, COLCHESTER.

SALE of a CHOICE COLLECTION of NEW and RARE PLANTS.

MR. J. C. STEVENS has received instructions from Mr. James W. Wimsett, of Chelsea, to Offer for SALE, on MONDAY, April 10, at his Great Rooms, 38, King Street, Covent Garden, W.C., a Collection of STOVE and GREENHOUSE PLANTS, suitable for Table and House Decoration. Amongst others will be found the following:—

COCOS WEDDELLIANA, 3 to 4½ feet high
LIVISTONIA ROTUNDIFOLIA
DÆMONOROPS PALEMBANICUS
MARANTA MAKOYANA, 4 ft. through, show plant
KENTIA FOSTERIANA
KENTIA BELMOREANA
VERSCHAFFELTIA MELANOCHÆTES
PHŒNICOPHORIUM SEYCHELLARUM
MACROZAMIA CORALLIPES
CORDYLINES, 10 to 15 ft. high, handsome specimens.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

SALE of the COLLECTION of ORCHIDS formed by the late S. RUCKER, Esq., of Wandsworth.

MR. J. C. STEVENS has received instructions from Messrs. James Veitch & Sons, of Chelsea, to offer for SALE, on WEDNESDAY, April 12, the COLLECTION of ORCHIDS recently purchased by them from the Executors of the late S. Rucker, Esq. This Collection comprises many fine and rare kinds. It was formed by Mr. Rucker during the last five years, and it is not too much to say that almost every plant was selected for its variety. The plants are healthy, vigorous, young-growing specimens, and well worthy the attention of all Orchid Growers. Amongst others will be found the following:—

ONCIDIUM ROGERSII (true, the only plant at present saleable in England)
LÆLIA ANCEPS DAWSONI
ODONTOGLOSSUM VEXILLARIUM (strong)
,, ROEZLII (strong)
,, ALEXANDRÆ (several)
MASDEVALLIA WALLISII (true)
,, TOVARENSIS
,, HARRYANA
,, LINDENI
,, VEITCHII
DENDROBIUM WARDIANUM
,, CRASSINODE
,, AGGREGATUM MAJUS (splendid masses)
,, JAMESIANUM (very fine)
PHALÆNOPSIS GRANDIFLORA
,, AMABILIS
,, SCHILLERIANA (a very fine lot of all the kinds)
CATTLEYA LABIATA (true autumn-flowering varieties)
,, MENDELII (splendid plants), &c.

On view the morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

IMPORTANT SALE of IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, April 13, at half-past 12 o'Clock precisely, a few very Rare and Choice ORCHIDS, just arrived, per *Mondego*, from Brazil, collected by Mr. H. Blunt, and consisting of some very fine plants of CATTLEYA LABIATA, which he says is quite distinct from the variety he sent home some years ago, and which is known as the Warneri variety. This variety flowers in the autumn, but the Warneri variety flowers in May, and, therefore, he considers this to be the true labiata. Also some fine masses of CATTLEYA CRISPA ROSEA, which the Collector speaks of as a very lovely plant, with sepals and Petals of a lively rose. This plant is very rare. A few fine strong plants of a CATTLEYA, which was received from a Gentleman from the locality of CATTLEYA AMETHYSTOGLOSSA, and considered from the appearance of the plants to be true. A quantity of CATTLEYA BULBOSA: among them will be found several varieties. Also a quantity of a CATTLEYA in the way of HARRISONIANA, but quite distinct from that species. Mr. Blunt says it is a very fine thing; the colour of the flower is the brightest magenta. When this plant becomes known it will become a great favourite. Some splendid masses of ONCIDIUM CONCOLOR and MARSHALLIANUM, probably the best pieces ever imported. Also several other fine things.

All the above are in the finest condition possible.

On view the morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

AVENUE TREES.

	Girth 4 ft. from ground.
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10 inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8 ,,
MAPLES, Norway, 12 to 16 feet high ..	5 to 8 ,,
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10 ,,
,, Scarlet, 10 to 14 feet high	8 to 10 ,,
,, Double, 10 to 14 feet high	8 to 10 ,,
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10 ,,
ELMS, 15 to 18 feet	7 to 9 ,,

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.

Knap Hill Nursery, Woking, Surrey.

JAMES SMITH, Darley Dale Nurseries, near Matlock, offers the following:—

10,000 CUPRESSUS LAWSONIANA, 15 to 18 inches, 3s. per dozen, 18s. per 100; 2 to 3 feet, 5s. per dozen, 30s. per 100; 2½ to 3½ feet, 6s. per dozen, 40s. per 100; 3 to 4 feet, 9s. per dozen, 65s. per 100, also larger plants.
5,000 CRYPTOMERIA ELEGANS, a fine Conifer from Japan, perfectly hardy—15 to 18 inches, 8s. per dozen; 1½ to 2 feet, 10s. per dozen; 2 to 3 feet, 15s. per dozen; 3 to 4 feet, 22s. per dozen. Also CRYPTOMERIA JAPONICA and LOBBII, of various sizes.
10,000 IRISH IVIES, good plants, 3s. per dozen, 10s. per 100.
10,000 PICEA NOBILIS, in perfect health, 1½ to 2 feet, 8s. per dozen, 60s. per 100; 2 to 2½ feet, 22s. per dozen; 3 to 3½ feet, 60s. per dozen.
5,000 RETINOSPORAS, fine plants, of various kinds.
100,000 FLOWERING SHRUBS, of various kinds.
10,000,000 RHODODENDRONS. See Catalogue
60,000 HARDY HEATHS.
20,000 KALMIAS, various.
10,000 LEDUMS, various.
10,000 ANDROMEDAS, various.
30,000 GAULTHERIA SHALLON.
10,000 BOX, 1½ to 2 feet.
20,000 PRIVET, Evergreen, 2 to 3 feet.
20,000 PINUS CEMBRA, fine plants, of various sizes.
10,000 ARBOR-VITÆ, American, of various sizes, an excellent plant for Hedges; also LOBBII and others.
10,000 HYPERICUM CALYCINUM.
CATALOGUES free by post.

NEW PELARGONIUMS.

PELARGONIUM WONDERFUL.

In offering this remarkable and beautiful Pelargonium, George Smith has much confidence in recommending it as in every way adapted to all classes of growers, and must become a favourite with all, on account of its superior qualities, both for bedding, exhibition, and all decorative purposes. The colour is a most intense orange-scarlet; it is semi-double, with large trusses of flowers on a strong footstalk, the pips large, of great substance, and extraordinary for its lasting qualities, as it does not drop its petals when exposed to the weather, as in other varieties, thus supplying a want that has long been felt, making it at once the very best flower for bedding. Retaining, as it does, such a number of flowers, the effect will be very grand; it is also particularly suited for the choicest bouquet, as the flowers do not shake off. Its habit leaves nothing to be desired, being exactly the same as Vesuvius, which is its parent, and retaining all its parent's free-blooming qualities and beautiful foliage. It is the opinion of all practical judges that it must create quite a sensation, and be the most sterling flower offered for 1876.

Was awarded a First-class Certificate by the Royal Horticultural Society, and considered by every member of the Flora Committee present to be a flower of great merit.

The *Gardeners' Chronicle*, July 24, in its report of the meeting, speaks of Wonderful—"As quite the finest thing in its way yet introduced."

The *Gardeners' Chronicle*, Oct 9, in noticing plants exhibited, says:—"Mr. Smith's Pelargonium, Wonderful, must become a grand market plant."

The *Gardeners Magazine*, Oct. 9, says:—Mr. Smith exhibited a splendid scarlet double Zonal, one of the best of its class at our command."

The *Gardeners' Oracle* for 1876, speaking of new plants, says—"Wonderful George Smith's), semi-double, dwarf in habit, and very free flowering; trusses of medium size; colour brilliant scarlet. A sport of Vesuvius, differing only in the doubleness of the flowers, and, therefore, of immense value."

The *Gardeners' Magazine*, Feb. 26, 1876, speaking of new flowers of the past year, says:—"The buyers of George Smith's Wonderful will do well to buy largely and make stock at once, for there is no more proving to be done for the determination of its value as a winter flowering plant—it has proved of greater value than any other double Zonal in the lists; and as a summer bedder it comes nearest to that every practitioner of bedding is for ever in search of than any other plant we know."

For a beautiful coloured drawing, by Mr. W. G. Smith, see the *Floral Magazine* for December, 1875.

10s. 6d. per plant.
Where 6 are ordered 7 will be sent.
,, 12 ,, 15 ,, ,,
,, 24 ,, 30 ,, ,,
The above, a third off to the trade, and where 50 or more taken, at half price.

PELARGONIUM EVENING STAR (Smith's).—This new and beautiful flower is most attractive and unique, having a white ground with large pink eye, giving it a very striking appearance. The flower is of great substance, smooth, and a fine truss; the foliage a light zone, and plant of good habit. This is in every way a first-class flower, and no collection will be complete without it. 7s. 6d.

PELARGONIUM DREADNOUGHT (Smith's).—A most distinct and beautiful variety; colour rich peach-blossom, with white eye. The colour is particularly rich and fine, the pips are large, with fine truss; a very free bloomer, and good habit. It is in every way first-class, and will prove a great acquisition. 7s. 6d.

The three new Pelargoniums will be sent out on and after May 18.

Cheques or Post-office Orders, made payable at Hornsey Road, to George Smith, to accompany all orders from unknown correspondents.

GEORGE SMITH, Tollington Nursery, Hornsey Road, London, N

ROYAL BOTANIC SOCIETY of LONDON

Gardens—Regent's Park, N.W.

SPECIAL EXHIBITION of FLOWER BEDS, JUNE 1.

REGULATIONS.

1. The Exhibition is to consist of living growing Plants, in or out of pots, plunged and arranged in designs as in the actual Flower Garden.

2. The plants are to be arranged on the open Lawn, &c., exposed to the weather, in the situations pointed out by the Officers of the Society.

3. Notice in writing must be given to the Secretary at least fourteen days before the day of Exhibition, stating the size and general shape of the area of ground required, and also the amount of plunging material (which will be furnished by the Society). Note—*Unless this regulation is strictly complied with no entry can be made.*

4. Each and every exhibit must be arranged and completed on or before Tuesday, May 30, and allowed to remain on the ground until six o'clock on June 8.

5. The Society will not be responsible for loss or damage to Plants or other articles exhibited, but all ordinary care will be taken of them.

SCHEDULE OF PRIZES.

DIVISION A.—AMATEURS ONLY.

CLASS 1.—A Flower Bed or Beds arranged in a design not less than 250 feet superficial.—1st, The President's Medal; 2d, The Society's Large Silver Medal; 3d, The Society's Silver Medal.

CLASS 2.—A Flower Bed not less than 150 feet superficial, any shape or design.—1st, The Society's Large Silver Medal; 2d, The Society's Silver Medal; 3d, The Society's Bronze Medal.

DIVISION B.—NURSERYMEN ONLY.

CLASS 3.—A Flower Garden, arranged on a Plot of Ground, 25 by 50 feet.—1st, £20; 2d, £15; 3d, £10; 4th, £5.

CLASS 4.—A Flower Bed or Beds, any design, not less than 500 feet superficial.—1st, £7; 2d, £5; 3d, £3.

By Order of the Council, WILLIAM SOWERBY, Sec.

Orchids at Unprecedentedly Low Prices.

MR. WILLIAM BULL is constantly receiving Importations from his Collectors and Correspondents abroad, and offers the following at the low prices annexed:—

PLEIONE HUMILIS, good flowering bulbs, 3*s.* 6*d.* each; if a dozen are taken, 3*s.* each; if 50 are taken, 2*s.* 6*d.* each: a dozen would make a good specimen. The usual price of this hitherto rare Orchid has been 2 guineas each.

PLEIONE MACULATA, same prices as the above.

CŒLOGYNE CORYMBOSA.—This is probably the first time this handsome species has ever been seen in England in a living state. 10*s.* 6*d.* each, 4 guineas per dozen.

DENDROBIUM MARMORATUM, 7*s.* 6*d.* each, £3 per dozen.

DENDROBIUM CAMBRIDGEANUM, 7*s.* 6*d.* each, £3 per dozen.

Mr. W. B. has also lately imported some splendid plants of the rare ODONTOGLOSSUM LINDENI, only a few plants of which previously existed in this country, 15*s.* each, 6 guineas per dozen.

For other Orchids at unprecedentedly low prices, *vide Gardeners' Chronicle* for March 25, p. 393.

Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

SNOWFLAKE POTATO.

Having imported and grown largely of this splendid new variety last season we are in a position to offer fine English-grown seed tubers at the following rates:—

	s.	d.
Per pound	0	6
Per peck of 14 lb.	6	0
Per bushel of 56 lb.	21	0

Cheaper by the sack or ton.

Orders of 21s. and upwards carriage free.

P. McKinlay, Esq., Beckenham, the well-known authority, writing of this Potato in the *Gardeners' Magazine*, Jan. 15 last, says:—"My experience with American varieties has been somewhat extensive, and I find that they generally improve as they become acclimatised. . . . I have no doubt Snowflake will improve in quality, and will become one of the best in cultivation."

Upwards of Fifty other Varieties in Stock.

BEAUTIFULLY ILLUSTRATED

Catalogue of Kitchen Garden and Flower Seeds, Gladioli, &c.

POST-FREE ON APPLICATION.

HORTICULTURAL BUILDINGS.

PLANS AND ESTIMATES FOR HORTICULTURAL BUILDINGS

OF EVERY DESCRIPTION, EITHER IN WOOD OR IRON,

TO SUIT ANY GARDEN, LARGE OR SMALL,

Designed and constructed with strict regard to ECONOMY of PRICE, GOOD WORKMANSHIP, DURABILITY of MATERIAL, and PRACTICAL ADAPTATION to their various purposes.

ORMSON'S
PATENT UPRIGHT TUBULAR CORNISH BOILER,

STRONGLY RECOMMENDED BY THE PRESS.

Estimates given for Heating, on the most improved and scientific principles, all descriptions of Buildings.

Hot-water Pipes, and a variety of the Best Boilers and Connections

AT WHOLESALE PRICES.

Goods supplied to Order at the Lowest Prices to those who may wish to fix their own Hot-water Apparatus, or Workmen sent to any part of the United Kingdom.

Please to write for Illustrated Priced Lists.

HENRY ORMSON,

HORTICULTURAL BUILDER AND HOT-WATER APPARATUS ENGINEER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

TO POTATO PLANTERS.

CHANGE OF SEED.

JAMES CARTER & CO.

ARE PREPARED TO SUPPLY THE FOLLOWING POPULAR AND CHOICE VARIETIES AT GREATLY REDUCED RATES PER HALF-TON OR TON.

English Varieties.

Per bushel—	s.	d.
Carter's Main Crop ..	12	0
Carter's Champion ..	17	0
Rivers' Royal Ashleaf..	14	0
Myatt's Ashleaf ..	12	0
Walker's Regent ..	9	6
Paterson's Victoria ..	10	6
Hundredfold Fluke ..	14	0
King of Potatos ..	12	0

American Varieties.

Per bushel—	s.	d.
Early Rose	10	6
Late Rose	14	0
Vermont Beauty ..	12	6
Compton's Surprise ..	12	6
Peachblow	14	0
Bresee's Prolific ..	12	0
Bresee's Peerless ..	12	0
Breadfruit	21	0
Early Goodrich ..	10	6
Extra Early Vermont..	12	6
Climax	12	0

Price, 10s. 6d. per bushel.

HALF TON AND TON PRICES ON APPLICATION.

CARTER'S (The Queen's Seedsmen), 237 and 238, HIGH HOLBORN, LONDON, W.

NOW READY,
NURSERY CATALOGUES FOR 1875-76.

WILL BE SENT POST FREE UPON APPLICATION.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),

EDINBURGH,

AND

54, BISHOPSGATE STREET WITHIN, LONDON, E.C.

BUSINESS ESTABLISHED, 1770.

SARRACENIA DRUMMONDI.

(The most beautiful of its group.)

Fine healthy imported plants, 5s. each; post-free, 6s. Special price per dozen. Usual allowance to the Trade.

HERBACEOUS CALCEOLARIAS.

E. G. HENDERSON & SON

Offer fine vigorous Plants of their First-class Exhibition strain, in 48-sized pots, ready to pot forward, perfectly free from insect, and quality of flowers the best that can be had.

A few hundreds to spare over the stock required for home growth. Price on application.

THE WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON, N.W.

Sutton & Sons

CHOICE FLOWER SEEDS,

FREE BY POST OR RAIL.

Sutton's Collections of Choice Flower Seeds, to produce a beautiful and continuous display during Summer and Autumn.

No. 1 Collection, Free by Post or Rail	..	£2	2 0
No. 2 Collection	,, ,, ..	1	11 6
No. 3 Collection	,, ,, ..	1	1 0
No. 4 Collection	,, ,, ..	0	15 0
No. 5 Collection	,, ,, ..	0	10 6

Small and Useful Collections can also be had, from 2s. 6d. to 7s. 6d. Free by Post.

Complete Instructions as to the Cultivation of Sutton's Choice Flower Seeds will be found in

"SUTTON'S AMATEUR'S GUIDE,"

The most practical work on gardening yet published, beautifully illustrated with 300 *engravings.*

Price 1s., post-free for 14 stamps. Gratis to Customers.

TO OBTAIN THE

Best Garden Lawns and Croquet Grounds

SOW

SUTTON'S

LAWN GRASS MIXTURE,

Which forms a close velvety turf in a very short time. For making New Lawns or Croquet Grounds 3 bushels or 60 pounds is required per acre, or 1 gallon to every 6 rods (or perches) of ground.

For improving those already in turf, 20 pounds should be sown per acre.

March, April, and May are the best months for sowing.

Price 1s. per lb.; 20s. per bushel.

From Mr. J. Merrick, *Gardener to* S. Forster, Esq., *Le Court.*

"The Seed you sent me last year turned out uncommonly well. Several gentlemen who came to Le Court could scarcely credit, from the appearance of the lawn, that it was only sown in May. In August it was as fine and thick as I have seen some lawns that had been laid down for three years."

Instructions on the Formation and Improvement of Garden Lawns and Croquet Grounds Gratis and post-free.

THE QUEEN'S SEEDSMEN, READING.

B. S. WILLIAMS'

CHOICE

FLOWER AND VEGETABLE

Seeds for 1876.

	Per Packet.—s. d.
BEANS, Williams' Early Prolific Dwarf French, in sealed half-pints	1 6
BRUSSELS SPROUTS, Welch's Giant, one of the finest in cultivation	1 0
CUCUMBER, Osmaston Manor (new), one of the Finest Varieties, either for Summer or Winter use; 26 to 32 inches long, very prolific	2 6
MELON, Osmaston Manor Hybrid (new), a splendid Green-fleshed Variety, beautifully netted, globular in form, and of delicious flavour	2 6
ONION, Williams' Magnum Bonum, the heaviest cropping and longest keeping Onion in cultivation ..	1 6

CYCLAMEN PERSICUM.

CHOICE FLOWER SEEDS.

	Per Packet.—s. d.
AURICULA, saved from the finest show varieties ..	1 6
BALSAM, Williams' Superb Strain.. .. 2s. 6d. and	1 6
BEGONIA FROEBELII (new).—This is a new and distinct species	2 6
,, SEDENI SEMI-PLENA, a new semi-double flowering variety	2 6
CYCLAMEN PERSICUM, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1 6
CELOSIA PYRAMIDALIS PLUMOSA	1 6
CALCEOLARIA, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1 6
CINERARIA, Weatherill's Extra Choice Strain, 5s., 3s. 6d., 2s. 6d., and	1 6
COCKSCOMB, Glasgow Prize; combs of this splendid strain measure from 33 to 36 inches from tip to tip	2 6
GLOXINIA, Finest Drooping Varieties	1 6
,, Finest Erect Varieties	1 6
PRIMULA, Williams' Superb Strain, Red, White, or Mixed .. .. .. 5s., 3s. 6d., 2s. 6d., and	1 6
PYRETHRUM GOLDEN GEM..	1 0
STOCK, Williams' Improved Giant Scarlet Brompton ..	1 6
,, East Lothian, an assortment of 3 colours	2 6
,, Virginian, New Crimson, a distinct variety: the flowers are large and of a bright crimson colour, the habit is dwarf, robust and branching ..	1 0
WALLFLOWER, Harbinger, Autumn and Winter Flowering	1 0

ILLUSTRATED SEED CATALOGUE

Gratis and post-free on application.

Packets of Flower Seeds, excepting heavy kinds, Free by Post.

VICTORIA AND PARADISE NURSERIES,
Upper Holloway, London, N.

SATURDAY, APRIL 8, 1876.

THE VALUE OF LIGHT IN PLANT CULTURE.

THE most indispensable element to plant life after the sustenance they receive through their roots, and the air they breathe through their leaf-pores, is light, in greater or less quantity, according to the nature of each particular species. This is a fact so well known and universally admitted amongst all who have studied the conditions under which vegetable life exists, that it would scarcely seem to require mention were it not that amongst the immense numbers of plants that are at the present day cultivated under glass, we so often see an unaccountable forgetfulness of the all-importance of light to their healthy development. If we except the comparatively few plants which in their indigenous state select shady situations, and thus evince their preference for subdued or partial light, we cannot fail to observe that when from any cause a sufficiency of this life-giving element is not available, the effects are disastrous. If, for instance, we take a piece of land and plant it closely with deciduous trees, and these are allowed to remain crowded for a time, the effect is that every tree loses its individual character in the struggle with its neighbours to keep its head exposed to the light; the trunks become unnaturally elongated, and anything that can be done afterwards in the shape of a removal of the superabundant number will never impart to those allowed to remain their natural habit and wonted strength. It was once a favourite practice with those who farmed their land slovenly to sow the seed so thickly that the crop would smother the weeds, with the unvarying result of a crop of weak straw and light corn, more the result of insufficient light consequent upon overcrowding of the individual plants, than of the inability of the land to support them. The same thing invariably occurs with kitchen garden vegetables when they have not enough room for their proper development: no matter how far the ground may be able to support the crop, the insufficiency of light stands as an effectual barrier to a satisfactory issue.

These are evidences furnished by plants grown in the open air, yet all pointing in one direction. If we come to plants of a tender nature, that require the aid of a glass covering under which to grow them, the importance of keeping the principle in view is still more evident. The first things that were attempted to be cultivated under glass to any extent were mostly of a utilitarian nature, such as fruit, and especially the Vine, which hailing as it does from the sunny South, where it luxuriates in the continuous streaming light of cloudless skies, it is no wonder that it struck the individuals who thus essayed its culture that it would be necessary to place it in close proximity to the glass that it might receive all the light possible: and, above all, to so place the houses in which it was to be grown that they would admit as much light as the small glass and the heavy rafters customary in those days would allow. From what we read of the first attempts at the erection of glass structures for gardening purposes, and from the remains of many of these old houses still to be seen, it is easy to discover the advance that was made, even before the commencement of the last

quarter of a century, when cheap glass began to effect such a revolution in the character of plant and fruit houses.

Glass erections for the cultivation of plants only, being required in countries that are considerably colder than those in which the plants to be grown in them are indigenous, it follows as a natural consequence that they cannot receive so much light as they do in a state of Nature, even in the best constructed houses it is possible to build, erected in the most open situations, and where there is nothing present which can absorb or obstruct light. This being so, it evidently becomes a matter of the first importance that the construction of plant and fruit houses should be such as to afford all the light possible, and still further that the sites chosen for them should be where no extraneous objects, such as existing walls, buildings, or trees, are situated so near as to interfere in any way with the full volume of light so indispensable to the well-being of the plants to be grown in them. This of course applies to houses that are built exclusively for growing plants and fruits. In the case of conservatories attached to mansions, the matter is altogether different. There effect has to be considered, and the erection must generally occupy a certain position whether the aspect and surroundings are such as to be suitable for the plants or otherwise. So far as the style and construction of what we may term general plant and fruit houses, as carried out at the present time by the best horticultural builders are concerned, there is little to be desired; the admission of a maximum amount of light is secured as far as possible, consistently with the requisite strength in either wood or iron. In the selection of a site for the erection of such houses as those under consideration, there is, however, very often not sufficient thought bestowed upon the paramount importance of light. This is most frequently the case in old gardens where new ranges are put up, and where some paltry consideration of utilising an existing wall, or the retention of a few trees, often of no value either for use or ornament, is looked upon as being of sufficient importance to outweigh the well-being of the plants to be grown in the houses.

The conditions inseparable from the cultivation of flowering or fruit-bearing plants when grown under glass, are such that we cannot give them anything approaching the amount of fresh air they get under more natural conditions out-of-doors. This is more especially the case with such as are indigenous to the hotter parts of the world, and require a high artificial temperature, such indeed as often for many weeks during the spring, when they are making active growth, precludes the possibility of admitting much fresh air; yet, nevertheless there exists the absolute necessity for doing something to promote the solidifying of the wood and leaves as they are formed, and the only agent here at our disposal, in the absence of the non-admissible air, is light, which when in sufficient quantities, is under such conditions the great compensating element to vegetable life, and in some measure makes up for the absence of fresh air. This is a subject that does not always receive enough consideration, but which is of the greatest importance to all who are at any time engaged in the construction of plant or fruit houses. The cultivation of light-loving greenhouse plants, such as Cape Heaths, and numbers of the most gorgeous flowering subjects from the higher more exposed regions of hot countries, is often rendered impossible for want of sufficiently light houses to grow them in; and since Orchids have become so generally cultivated, scores of thousands of pounds worth of these plants have been killed by being thrust into houses with insufficient light, through the mistaken idea that because the majority of them do not bear the direct action of the sun, they do not require light except in limited quantity.

In fruit culture under glass the effects of insufficient light are not so often apparent as in the case of flowering plants, principally through the Vines, Peaches, &c., being generally trained as near to the glass as is practicable. One case that has come under our notice clearly points to the effect produced by a more than usual amount of light upon the Vines. It occurred to a house planted with Gros Guillaume, and which is well known to be a rank strong-growing kind, with wood difficult to ripen so as to bear freely on the spur system, but nevertheless a first-rate late keeping Grape when it can be induced to bear freely on the spur, as in this way its bunches are not too large to keep through the winter, as is often the case when grown on young rods. About twelve or fifteen years ago some vineries were erected by an amateur who had been engaged in other pursuits than gardening, and who had no great amount of horticultural knowledge, but nevertheless was able to think for himself. He reasoned thus: "The Vine is a strong, free-growing plant, that evidently wants plenty of room and comes from a sunny part of the world. I will try a house above the ordinary width, so as to allow the canes to extend more than the usual length, and I will also give them more light than usual." The house was built on elevated ground, with nothing to intercept the light; it was a lean-to, over 20 feet wide, and instead of the ordinary brick wall at the back, the whole, ends included, was wood and glass, all but some 2½ feet of brickwork all round. From the sun's first appearance above the horizon until its disappearance in the evening, its rays struck the house on some part. A good border was made, all outside, the Vines were planted, and in due time filled the house. We have since frequently seen these Vines at different times of the year—in the first stages of their growth in the spring, at intervals through the summer, and also as late as March, to which time a good portion of the crop is kept hanging, almost indeed until they are ready to break again. They show as regularly and as freely as Hamburghs, three or four bunches to a shoot right down to the bottom, and bear an immense weight of excellent Grapes. This regular free disposition of bearing on the spur is evidently due to the influence of unobstructed sun and light that is continually upon them, of course aided when required by fire-heat and general treatment, calculated to insure success; but the fact of their exceptionally free bearing habit on the spur system, we attribute principally to the much more than ordinary sun and light the construction of the house afforded them. We do not point to such a form of house as the most desirable for general Grape growing, being altogether unsuited for early forcing; as, with the back wall composed of glass, it would be very difficult to keep up the requisite heat, still further increased by the width. We merely point to it as an instance of the effects resulting from a house so situated and constructed as to receive and admit every ray of light possible. The importance of arranging plant and fruit-houses so as to admit the fullest volume of light is generally admitted, but it is often very far from being carried out in practice.

THE POMEGRANATE.

(Concluded from p. 428.)

Many varieties of flavour are met with in Pomegranates; some are sweet and vinous, others are acid, others are bitter and astringent. The colour of the juice likewise varies in depth. Being not only of delicate flavour, but very cold—next perhaps in lowness of temperature to the melting pink snow-drift of the Water Melon, the juice is in warm countries inestimable. Pressed out in quantity, sweetened, and scented with rose-water, it forms one of the most delicious beverages in the world, and is said to be the true and original sherbet. The "spiced wine of the Pomegranate" was once the fitting gift of a king to his spouse.* Doubtless it was this same preparation which Dioscorides alludes to under the name of ῥοΐτης οἶνος, or Pomegranate wine,* and of which Horace talks in his "*dulci mala vino lavere.*" It is still a favourite drink in the East. Pomegranates are also cut in slices, and eaten with wine and sugar. The favour in which the Pomegranate was held by the Hebrews on account of its juice is indicated in its being specified among the luxuries which they claimed, when in the desert, to have enjoyed in Egypt, and the want of which they felt so keenly when deprived of it;† also in its being one of the three kinds of fruit brought back from Eshcol by the spies;‡ and thirdly, in its being classed by Moses with "Wheat and Barley, Vines and Figs, oil-olive and honey."§ In classical mythology, when it is desired to express the utmost possible suffering produced in the nether world by thirst, the Pomegranate is represented just out of reach. The lines are word for word the same as those descriptive of the gardens of Alcinous, the repetition being designed, it would seem, to make the punishment appear so much the more acute by contrast with a state of perfect blessedness.‖

In Palestine, the scene of its chief celebrity, the Pomegranate blossoms in April, or at the same time as the Myrtle. An orchard of Pomegranates, when in flower, with its fragrance and freshness, and rich and gloriously contrasted hues, is one of the most enchanting retreats in the world, especially as it is apt to abound with singing birds. Whether Shakspeare was correct or not in placing his nightingale in a Pomegranate at Verona, he would, at all events, not have erred had the story pertained to Syria. In the neighbourhood of Aleppo in particular, as in England, so we are told by Russell, this "merrie," not melancholy bird, may everywhere be heard warbling, and not only after sunset, but in the daytime. No birds are melancholy in themselves: if they seem so, it is by man's transference to them of his own emotions.

The peculiar and eminently suggestive form of the ripe Pomegranate, so often adduced by the Persian poets when discoursing on organic female beauty, recommended this fruit at a very early period as a model for carved ornaments that were designed to be, as it were, emblem within emblem. The chapiters or capitals of the pillars in the Temple were decorated with carved figures of Pomegranates. Representations of them were embroidered upon the robes of the high priest in blue, purple, and scarlet.¶ Having been employed by Divine command, the idea of human taste or preference having dictated the selection of this particular fruit must be entirely disconnected from the reason for its appearance in the scriptural places where we find it. Entering, moreover, as it does, into a grand and coherent system of sacred representatives, it is impossible to regard the introduction as purposeless and "signifying nothing." Hera, the Queen of Heaven and Earth in the old secular theology—Queen also of Virtue and Purity in the religion of the Greeks—held a Pomegranate in her right hand. It was she who gave aliment to all living creatures. *Leo Grindon, Manchester.*

Song of Solomon, viii. 2.

New Garden Plants.

Dendrobium Wardianum (*Warner*) candidum.

Amidst the rich collection introduced last year by Mr. S. Low was one plant, whose flowers are very large, but have not the violet-purplish tip to the six parts of the perigone. This makes a very striking appearance. It has just flowered in the rich collection of Edwin G. Wrigley, Esq., of Broadoaks, Bury, Lancashire.

Oncidium Lansbergii, *n. sp.***

A great botanical curiosity. I obtained more than twenty-five years ago a Venezuelan sketch in water-colours, prepared by the Dutch Consul Lansberg, an enthusiastic lover of plants. I named it then Leochilus Lansbergii, that genus being then regarded as

* Book v. 34. † Numb. xx. 5. ‡ *Ib.*, xiii. 23. § Deut. viii. 8.
‖ *Odyssey*, xi. 588—590. ¶ Exod. xxviii. 33.
** *Oncidium Lansbergii*, H. G. Rchb. f. — (Integrilabia, Leochilus.) Pseudobulbo elliptico compresso rugoso monophyllo; folio cuneato cordato oblongo obtuso cartilagineo linea media superne paulo elevata; folio supposito stipante subaequali; racemo porrecto tenui tri—quadrifloro; sepalo summo tepalisque oblongis; sepalo inferiori ad medium bifido, laciniis ovatis acutis; labello ligulato apice bilobo angusto; callo tumido velutino in basi; columnæ rostello producto, angulo medio prosiliente utrinque.—Venezuela, Lansberg; Accept ex horto Trevor Lawrence armigeri.

valid. I have never, till now, seen any trace of it again, and having had so many Venezuelan collections, I was rather puzzled at my plant not appearing. But recently Mr. Joseph P. Spyers, Orchid grower to Sir Trevor Lawrence, Burford Lodge, Dorking, Surrey, sent me the little tiny thing, which I immediately recognised as my old, never-forgotten plant. I was told by Mr. Spyers (one of those correspondents who give full information when it is wished) that it was obtained by Sir Trevor Lawrence in Mr. Stevens' rooms at a sale, growing on small branches with Ionopsis paniculata. Mr. Spyers even appears to doubt its coming from Venezuela. Nobody can insist on this, the geographic area of so many Orchids being exceedingly wide, and Ionopsis paniculata, too, growing at so many places. The small bulbs, not covering fully a threepenny-piece, much longer leaves, the more arcuate petals, and the involved parts of the lateral lobes of the lip being streaked by rows of minute purplish blotches. The lip, too, would appear to be much smaller than in C. Sedeni, and the staminode shows some discrepancy. The dorsal sepal is rosy, very pallid, with green nerves. The inferior sepal is nearly like a shell, much hollowed, of the same colour, but nearly white in its centre. The petals are much bearded towards their heartshaped base, arcuate, purplish at their ends. The lip is pallid purplish, and the mouth has the inflexed lobes greenish white, with the small dots already mentioned. I have to thank for this novelty Mr. Harry Veitch. It is, however, not Veitchian at all, but comes from J. Bowring, Esq., Forest Farm, Windsor, as my excellent correspondent tells me. *H. G. Rchb. f.*

Fig. 85.—Group of Date Palms at Bordighera, under process of bleaching for church decoration.

are ancipitous, shrivelled, one-leaved. Another developed leaf stands under the bulb, both being unusually cartilaginous. The thin peduncle is racemose at its end, having there three (in Consul Lansberg's plant) or four (in Sir Trevor Lawrence's plant) flowers in a raceme. The blooms are of a boney-yellow green, with chestnut blotches, much in the way of Oncidium carinatum, Kun. Werte. (Leochilus carinatus, Lindl.). It is just nothing for amateurs of grand flowers, but it is very striking for the botanist on account of its curious-very narrow flowers. *H. G. Rchb. f.*

× Cypripedium stenophyllum, *n. hyb.**

This is professedly a cross between Cypripedium Schlimii and Pearcei. It is very much like the splendid C. Sedeni, but may be distinguished by the narrower

* *Cypripedium stenophyllum, n. hyb.* (Schlimii × Pearcei)—Foliis loratis lineari-ligulatis acutis longissimis; racemo . . . bracteis . . ; ovario bene velutino; sepalo dorsali oblongo acuto, inferiori elliptico lato excavato; tepalis a basi subcordato oblongis acutis arcuatis, labello oblongo saccato, lateribus implicitis latis; staminodio transverse apice medio obscure sinuato cum apiculo, postice cordato, lateribus pallide barbato. — *Selenipedium stenophyllum* (Schlimii × Pearcei).—*H. G. Rchb. f.*

PALMS FOR PALM SUNDAY.

All along the lovely coast from Genoa to Nice may here and there be seen solitary Date Palms or groups of such in the gardens of the inhabitants. These afford evidence of the mildness of the climate, and contribute wonderfully to the beauty of the scene. The fruits do not, it is true, ripen, but their economic value is not confined to the fruit. There are localities, as at Bordighera and San Remo, where plantations of these Palms are maintained for commercial purposes. One such purpose is the supply of the churches at Rome and elsewhere on Palm Sunday with Palm branches or rather leaves. Not content with the leaves in the natural state the church decorators must have them blanched and sometimes gilded. To get them blanched the leaves are tied together like Lettuces in a London market garden, and hence comes the peculiar appearance shown in our illustration (fig. 85). "In the groves at Bordighera," writes Dr. Bennet, "which surround the town on all sides, thousands of Palms are growing with truly oriental vigour and luxuriance, and give a very Eastern character to the landscape. They are of all sizes, from a few feet to above 100 feet, and of all ages, from a few years to a thousand or more. In the garden of the French Consul, more especially, are to be found noble and majestic specimens of this beautiful tree; many of them, he told me, were more than a thousand years old The spot on which they are situated was the garden of a monastery of Dominicans, in very bygone days, more than a thousand years ago. It was these monks who introduced and planted the Palm trees in the district. Many of those existing were actually planted in this, the olden time, by the monks, of whom not a trace, not a vestige remains, with the exception of these their favourite trees. The Bordighera Palms, however, are not so beautiful as those of Elche in Spain, or of the African desert, owing perhaps to their leaves being generally tied up. It is the monopoly of the supply to Rome that explains the existence of the Palm groves; they can be cultivated profitably at Bordighera and nowhere else. They would grow on any part of the more sheltered regions of the Riviera, from Nice to Finale, but then their cultivation would be altogether profitless, as they do not ripen their fruit on the north shore of the Mediterranean." We may add that in the Botanic Garden at Genoa we saw last autumn a fruiting Date Palm,

the fruit spikes of which were enclosed in a glass case attached to the trunk, by which means doubtless the fruit would be brought to maturity—that is, if heat be all that is required.

HARDY PRIMULAS.

An amateur cultivator of these favourite plants, writing recently, said that "the Primula family is now a large one." A very correct statement, but it might have been qualified with the addition that it is a large family of small children. When more than half of the species can be grown well in small pots, it is evident that the accommodation must be limited indeed that could not give room to one representative of all the species at present in the trade; and for an amateur who is bitten with a speciality I can conceive of no family of plants so worthy his attention or more fitting objects for his paternal solicitude than is the charming family of hardy Primulas. A cold frame affords a better habitation than the "cold, cold ground;" but better still is a nice little cool house, because many of the Primula family will persist in displaying their beauties, even in the most unfavourable weather, and a frequent survey of these beauties could hardly be enjoyable in snow or frost or pouring rain. All who are blessed with a "bit of glass" know and realise the feeling of satisfaction and independence enjoyed when they can peddle about in comfort amongst their favourites, utterly careless as to the severity of the elements outside.

A neat, low, span-roofed house, having an alley in the centre, and a broad, flat stage covered with fine shingle on either side, is just the place in which hardy Primulas will thrive and do well. The extremes of great heat and severe frost must be avoided, but as many of the plants will have flowered before the heat of mid-summer, and can be placed out-of-doors plunged in ashes under a north wall, the necessity for shading the house is not so obvious; still it is best to be provided, for sudden warm days in the spring are often more trying than the regular heat of July. If there be provision by heating to exclude frost it will promote the early blooming of the plants, and make things much more comfortable for the amateur. Most of the Primulas thrive well in good sweet sandy loam, and a mixture in it of well-rotted leaf-soil. As a rule they like good soil in preference to half-starved peat, but it is indispensable that they be kept clean, free from damp, and have good drainage.

Another desideratum is to avoid over-potting, rather a common error with amaturs. Most of the kinds are comparatively slow growers, and they should be shifted with care, and only as often as is absolutely necessary. This is best done in the autumn, or just when the plants are brought in for the winter, as in the period of spring growth the young roots rapidly develope themselves in the fresh soil, which induces finer flowers.

The earliest of all the imported species appears to be P. denticulata, a charming plant, now pretty well known. It blooms in February, and is followed by P. purpurea, a variety that differs from it slightly in foliage, in having rather larger trusses and showing just a shade more of mauve in the flowers. Still another variety, blooming in succession, is P. pulcherrima, which has flowers even yet a little deeper in colour, and darker foliage. In the Auricula section are found some very early and beautiful kinds P. viscosa and its varieties especially furnish a charming group. These are of dwarf, almost diminutive habit, and are indispensable in any collection. The small flowers of P. viscosa are in colour rosy lilac, and have a prominent white eye. P. viscosa, var. intermedia, has larger flowers borne in compact trusses on short scapes, and in colour are deep maroon-purple. P. viscosa, var. nivea, has smaller flowers borne in dense trusses, and of a pure white colour. A good plant of his kind carrying several heads of bloom is a striking object in the house just now. Primula marginata is another early variety, now in flower, and extremely pretty. Of this section I have a very pretty rosy purple variety recently received through an amateur collector, that I anticipate is P. pedemontana, and from a similar source another not yet in bloom that is probably P decora. Primula minima is of such minute growth that it requires a good patch of it to produce any floral effect; the blooms are red in colour and borne singly, but are large in proportion to the size of the plant. The varieties of P. cortusoides are beautiful pot plants, the foliage being singularly attractive. These are just now coming into flower, and consist of amœna, rich red; lilacina, deep lilac; alba, pure white; and grandiflora, pale rose. These bear seed moderately, and if it be sown in the spring will produce strong blooming plants for the next year, and probably considerable variety of colours. The farinose Primulas are represented by P. farinosa and P. scotica, a perfect gem. These are all I yet have of this section. Of varieties of P. acaulis and elatior the names are legion, but a selection of the double and single kinds, and of the garden Auriculas, ought to be found in any Primula-house. *Amateur.*

PLANTS IN FLOWER AT KEW.

Several plants of considerable interest are gathered together in the Orchid-house porch at Kew. Ficus radicans, Roxb., was introduced a few months since, and already indicates the purposes for which it is adapted. It is similar in habit to F. stipulata (F. repens), but of much larger growth, and like it climbs by means of little rootlets from the stem, in this instance growing vigorously against a Tree Fern trunk. It is said also to possess the same advantage of being hardy. The entire plant is graceful in appearance, it has slender stems, inclining to branch freely, with leaves about 4 inches long, closely applied to the surface of attachment. In form they somewhat vary, but as a rule are ovate, or ovate-lanceolate, acuminate, and cordate at the base; they are quite glabrous, and of a bright shining green. Few plants are better adapted for covering stove or greenhouse walls than F. stipulata, and this is perhaps the only other that can take a place beside it. For baskets it will also be of value, and for these purposes we suggest its use when distributed. It is known to very few that F. stipulata is no other than a young and sterile growth of F. pumila, L., and that when allowed free development, at last it assumes the nature and fertile character of that species, becoming stiff and shrubby, with much larger leaves, and is so altered in appearance that but for the stem continuation no one could think it the same. An instance of this could once be seen in the collection of W. W. Saunders, Esq., at Reigate.

A parallel case to the above may be found in Marcgraavia umbellata, of which there are two specimens in the Economic-house, which between them show the two forms well. It appears that as long as there is anything in advance of the stems for them to creep against, they branch little, and bear leaves closely adpressed to the surface, affording support, but afterwards they send out spreading branches with much larger leaves, and of different form. These sometimes change back again to the original kind of growth. The rootlets are rather curious; several sometimes grow together in a line, and, being united, form a flat process. They are produced close to each petiole, which is so short that the blade covers them over, and forms a protection. The creeping growth is most often seen, and sometimes runs a great distance over stone walls or rafters. We believe it correct to say that the two forms, separately rooted, have been offered as distinct in the trade, though probably without intention. These instances are extremely interesting in themselves, as in each case a distinct species was made of different parts, of what might have been the same plant—in the first case with botanical authority (Thunberg), and in the second with that of horticulturists only.

Orychophragma sonchifolius, a native of Northern China, is an annual or biennial of much promise, and is here cultivated for the first time. It belongs to the Cruciferæ, and the genus is next to Moricandia, of which it has much the appearance. This is the only species. It has pretty pale green foliage, with erect racemes of large violet flowers, sweetly scented; and the showiness of the corolla is assisted by a similar coloration of the calyx. Its habit is so far satisfactory. These plants were produced from seeds sown last autumn, and, from their appearance, it is likely that a sowing about this time would yield a supply for summer and autumn. It is probably quite hardy, and if so the border will be its proper place, where it is sure to be quite as welcome as many other annuals, from the delicacy of its colour and scent. It grows from 6 to perhaps 18 inches high. Amphicome Emodi is an old plant, rarely seen, though not from any fault of its own. The pink, Bignonia-like flowers are more than slightly ornamental, and are associated with pretty Burnet-like leaves, produced in a dwarf tuft. The flowers of Orchis longibracteata are just passing; the form is one with broad leaves. Oxalis incarnata, which grows in a shrubby tuft, is often very pretty, with a multitude of flesh-coloured flowers. O. cernua, an ornamental yellow kind, is also in bloom.

A few Cape bulbs next claim attention. Cyrtanthus obliquus var. viridiflorus, with peculiar flowers of yellowish green, presents a marked deviation in colour from the bright red type. It came to hand as C. viridiflorus—a name not published, but which should be retained with varietal significance, as it is precisely C. obliquus save the colour, which it is desirable to distinguish. This ornamental and useful genus has fortunately been taken up by Professor MacOwan, who has sent specimens of two new species to the Herbarium, and bulbs of one to the gardens. These are C. MacOwani, described by Mr. Baker at p. 98, vol. iv., 1875; and C. Tuckei, a splendid novelty with deep blood-red flowers, also described by Mr. Baker, and to appear in the *Journal of Botany*. C. MacOwani was cultivated for some time as C. odorus, to which it is most nearly allied, and those who possess bulbs under that name should find out which of the two they really are, several having been distributed. Bulbs of C. Tuckei are shortly to be received. The new Freesia Leichtlini is very pretty, and has sweetly scented buff-orange-coloured flowers. It is figured in Regel's *Gartenflora* with one violet segment. Synnotia bicolor is something similar, though not so handsome. Diasia graminifolia is curious; the flowers are light yellow with brown lines, produced on slender stalks in lax panicles. There are some showy pots of Lachenalia tricolor, var. luteola. Other species are L. orchioides, L. maculata, and L. uniflora. There are plants of Milla uniflora and the variety conspicua, the latter showing itself much superior for decorative purposes.

The cultivation of British mosses commenced some time ago, and the collection numbers about sixty species, a few of which are new and others rare. Nine species are here shown under bell-glasses, and some are in fruit. Gymnostomum pyriforme is perhaps the prettiest; the patch is about 4 inches across, and studded thickly all over with its nearly globular sporanges, though many have not reached the form of maturity. It grew to this size from a small piece. None of these are rare, but are interesting as the nucleus of a collection. Several modes of treatment have been tried, and that generally found the best is briefly as follows:—In the centre of a garden saucer without holes is laid some loamy soil, with bits of brick, stone, or fragments of Tree Fern stem for those that grow on trees. A slight elevation is thus formed, on which the moss is firmly fixed. There is then left a nearly free space on the outside for a slight depth of water, sufficient to keep the whole moist. This treatment has usually been found to answer, even for those whose native conditions are not similar, and so far seems to have succeeded better than the attempts to imitate natural circumstances, as of those that grow on walls, among grass, or on trunks of trees. Whether they will succeed for an indefinite time under treatment apparently opposed to habit remains to be seen. It is worthy of note that those in saucers are conspicuously better than others in pots. It may be that a proper supply of moisture is the chief requisite for the culture of at least a great number, as many are almost indifferent to their place of growth, whether on rocks or branches of trees, or on the ground. Little has been written on the subject. The Rev. M. J. Berkeley has a chapter in his *Handbook of British Mosses*. Mr. Stark, in his *Popular History*, devotes the portion of a chapter, and gives a list of species easily grown. There is an article in the *Cottage Gardener*, and another in the *Gardeners' Magazine of Botany*, vol. i., p. 210. Some kinds grow without trouble. The pretty Fissidens taxifolius comes up in pots containing loamy soil in several of the houses. Funaria hygrometrica is growing most luxuriantly in all stages, on the moist inside wall of a stove in a nursery near Kew. That much pleasure and interest is to be derived from the cultivation of mosses cannot be doubted, and we hope that some will be induced to take it in hand, especially those who make them a study. *Q.* [The glistening Schistostega pennata, is cultivated by Messrs. Stansfield, of Todmorden, in the shady parts of their cool Fern-houses. Several years ago we saw a good collection in the Botanic Garden, Breslau. Eds.]

PLANT GOSSIP.

In Messrs. Barr & Sugden's trial ground at Tooting several very interesting bulbous plants are coming into flower, including a great number of species and varieties of Narcissus. A few days ago we saw there flowering plants of the singular and very rare Iris caucasica—an old plant, for some years lost to cultivation. The flowers stand 3 to 4 inches above the surface, and are about 1½ inch in diameter, of a yellowish green colour. The sepals are oblong, and spreading from below upwards, so as to form an inverted pyramid, and with the extreme tips rolled inwards. They correspond in position, though not in direction with the "falls" of the German Iris. The inner surface is not bearded, but is marked in the centre with a projecting yellow ridge or keel. The petals corresponding to the "standards" of the German Irises are very much smaller than the sepals, and consist of a well-marked claw supporting a spoon-shaped blade, which is provided with a terminal point, and which is bent downwards. The three green styles in the centre are erect, keeled at the back, and divided at the top into two roundish lobes. The foliage is distinct from that of any other Iris, being sickle-shaped, and of a bluish glaucous-green colour.

—— Amongst the new Hyacinths flowered this season by Messrs. Cuthbush & Sons, of Highgate, the most promising are Princess Louise, the fine double flower certificated by the Royal Botanic Society last week; The First, semi-double, and distinct in its colour, which is a pale rose banded with salmon—a flower of good substance; and Nectar, a single white, which gives every promise of becoming one of the best of that section.

—— Few plants come in more useful to the gardener who has a large greenhouse or conservatory to furnish with flowers in spring, than that fine evergreen the Laurustinus, which, if only protected from frost, makes an ample return for the care bestowed upon it in the shape of a bountiful supply of white flowers. They are most generally seen in the small bushy form; but they make fine standards if worked on clean stems from 3 feet to 4 feet high. Exception might be taken to their mop-headed appearance when seen singly, but as a means to an end, and that end the furnishing of nice centre plants for groups, or for back rows, the legs can well be overlooked.

—— Mr. James Clarke, Bury St. Edmunds, the raiser of those fine forcing Pinks Lord Lyons, Derby Day, and others of more remote origin, has now in fine bloom a new variety, which he has named Duchess. It is of a delicate and beautiful tint of lilac-pink, with faint rosy lilac blotches in the centre, the petals large, stout, and finely rounded. The perfume is all that could be desired in a Pink, and the flowers are large and solid. Nor does it burst the pod, which is a sad defect with some Pinks otherwise of excellent quality. Mr. Clarke represents the habit to be robust and vigorous, and as blooming with great freedom. Fragrant Pinks in March and April are of great value, and those who force flowers are likely to find in Mr. Clarke's new variety something quite to their minds. Perhaps the efforts of Mr. Clarke to improve the race of forcing Pinks have not been so widely acknowledged as they deserve to be, and that to a great extent from a want of knowledge of the man and his work. Notwithstanding that Pink Lord Lyons has been in cultivation some six or seven years at least, it is only within the last year or two that its great merits were acknowledged by the bestowal of a First-class Certificate by the Floral Committee of the Royal Horticultural Society.

—— Auricula cultivators have long wished for a thoroughly good yellow self flower. This appears to have now been obtained by the Rev. F. D. Horner the well-known amateur cultivator, at Kirkby Malzeard, Ripon. Strange to say, it is a seedling from the grey-edged Charles E. Brown—what a sport!—and it is the best shaped yellow self we now possess, the petals being without a notch and finely rounded, the paste white and broad, the pip perfectly flat when expanded, the colour clear bright primrose, very delicate and fair. It will, no doubt, be seen at the forthcoming exhibition of the National Auricula Society at Manchester, on April 25.

—— One of the most striking and effective of hardy spring flowering plants is the homely old Double Daffodil, the large variety. We met with it the other day in large clumps by the side of a piece of ornamental water, on a south aspect, nestling under a warm bank of shrubbery, and flowering with great profusion. The clumps had been there for years, and each succeeding year adds to the surprising profusion of the flowers; where the sun (of which we have seen a great deal too little lately) was shining on them they were beautifully reflected in the water beneath, and a line of brilliant light seemed to run along the grassy banks and transparent water. How much more effective would be this floral picture if there could be mingled with the golden double flowers some of the fine single primrose, sulphur and white forms, such as N. cernuus, N. moschatus, and others. There are many odd nooks and corners in which scarcely anything else will grow, but where the Daffodil soon becomes quite at home, and where it can remain undisturbed for years with positive advantage to the plants. Truly has the Daffodil been termed "one of the earliest, the most beautiful and lasting of spring flowers."

—— Araucaria Rulei promises to make a fine greenhouse companion to the Norfolk Island A. excelsa, but as no large plants have yet been introduced from its native habitat, New Caledonia, we may have to wait some time before the young plants now being grown attain the desired size. Mr. Williams has a fine batch of small plants, and also of another Araucaria, similar to the above, except that it has a distinctly pendulous habit. This is called A. Goldeana.

—— During the past few years new varieties of the old Gold-laced Polyanthus have been announced, but as a general rule they prove of inferior quality when compared with Lancer, Exile, Cheshire Favourite, and George IV., plants of which can yet be met with here and there. One of the most promising of the newer varieties is Hilton's President. This is a vigorous grower, with good-sized, finely-formed pips, the ground colour crimson-maroon, regularly and evenly laced with bright gold, the lacing fully developed round and down the centre of the florets. It may lack to some extent the exquisite refinement of Lancer and Cheshire Favourite, but it is yet a flower of considerable promise. Too many of the newer varieties are radically defective in the lacing, while it does not correspond with the centre. Purchasers of new gold-laced Polyanthuses need to be somewhat wary in making their selections, as we have now flowering some named varieties that are fit only for the rubbish heap. One great difficulty in raising new varieties is the tendency on the part of seeds taken with great care from fine types to revert to the commonest border forms. In this respect the seedlings invariably prove most disappointing. Numerous inquiries are constantly being made for the old named varieties of twenty and thirty years ago, but they are not to be had. These inquiries, however, denote an awakened interest in the Polyanthus, and there are not wanting evidences that it is again finding favour among florists.

—— Among succulent plants of easy cultivation, the partridge-breast Aloe (A. variegata) is one well worthy of window and house cultivation. It is hardy enough to stand several degrees of frost without injury. Its habit of flowering so early in the spring is an additional recommendation, while its handsomely marked leaves, in waves of olive-green and greyish white, make it at all times a very useful decorative plant. With this may be associated Echeveria retusa, E. secunda glauca, now commencing to flower freely from well established plants; Pachyphytum bracteosum, and Echeveria metallica, as well as many others. All those just named flower early from well-matured plants, and they can be wintered in windows with so little trouble. Succulent plants used to be much more grown in cottage windows than they appear to be now, and, perhaps, it would be well were horticultural societies to endeavour to revive the practice, by offering prizes for such plants having window cultivation.

—— Growers of Ferns for exhibition should make note of a variety of Gleichenia rupestris named glaucescens which we saw lately in Mr. Williams' nursery at Holloway. The pinnæ of the handsome G. rupestris itself are glaucous beneath, but in the variety both sides are glaucous, and when commencing to grow the plant is rendered still more interesting by the tips of the pinnæ assuming a yellowish hue. The fronds are also longer, and the pinnæ narrower than in G. rupestris. It promises to make a striking exhibition plant.

—— The garden varieties of Crocus vernus are now very numerous, and the consequence is a considerable sameness in many of the reputed varieties. There are differences, but they are so minute as to escape a casual inspection. A few of the most distinct will be found in the following list of varieties. Foremost must come the little early-flowering Scotch Crocus, C. biflorus, and its previous companion, Cloth of Gold, C. reticulatus. They are both small, the first-named white, handsomely pencilled with purple-blue, but yet the precursors of the Crocus family, flowering early in February, when the weather is mild. A mixture of these two and the double Snowdrop has a charming effect. Then of yellow flowers, the large yellow Dutch; of white, Mrs. Beecher Stowe and Mont Blanc; of light striped, Sir Walter Scott, one of the very best, with flowers of large size, exquisitely pencilled lilac; and of dark striped, Pride of Albion and La Majestense, the former remarkably fine; of the pale purple varieties, Lamplighter and Lilaceus Superbus; and of dark purple, David Rizzio and Vulcan. To these must be added Ne Plus Ultra, lilac purple, handsomely edged with white, a very distinct and striking variety. We want more of these charming edged varieties, and it would be interesting to know if seed saved from Ne Plus Ultra would produce flowers of the same type. A few years ago some remarkable seedlings from C. versicolor were announced, but they do not appear to have established themselves among the cultivated varieties. Different shades of yellow would be acceptable, especially those having primrose and sulphur tints. Some purporting to be of this character have lapsed to the old free-flowering deep yellow variety.

—— It is not long since we gave a figure of Stauntonia latifolia, a very desirable hardy climbing plant. We have now to mention that Messrs. E. G. Henderson have been good enough to forward us flowers of a nearly allied species from Japan, Stauntonia hexaphylla by name. The foliage and flowers are similar to those of S. latifolia, the flowers being deliciously fragrant. It forms a beautiful greenhouse or conservatory climber, and we doubt not would be hardy against a south wall. It is by no means new to science, having been figured by Siebold, Decaisne, and others, but we have not previously heard of it in British gardens.

GREENHOUSE PLANTS.

THEIR CULTURE AND MANAGEMENT.

Nerium (*Oleander*).—This plant was introduced from Southern Europe; there are now several varieties of it, varying little except in colour. They are plants of easy culture, and will bear indifferent treatment and neglect in a way that would cause the death of most things. It is in this neglected condition that they are too often met with, yet it must not be supposed that under such usage anything approaching the success that is possible with a better system, can be attained in their cultivation. It frequently happens that with these and some other plants of great excellence that will exist with the worst treatment, an estimate of their merits is taken under the disadvantages of indifferent culture; hence the fact of the place they deserve being occupied by other inferior subjects. The individual flowers are not unlike those of a small Carnation, and are produced in large bunches on the points of the mature growth. Neriums are plants of very easy culture, growing freely in almost any kind of soil, either loam or peat; in the latter their handsome shining leaves attain a larger size and deeper hue; in loam, the disposition to make growth is not so great, which is rather an advantage, as they flower more freely. There is one thing that especially commends them to the notice of those who require decorative flowering plants in quantities: that they can either be grown into large specimens or managed so as to bloom in a small state. Nothing in the way of flowering plants in 6 or 7-inch pots can be more beautiful than are these Neriums

when well-grown, in which state they can be used for conservatory decoration, or in any place where there happens to be so little light as would cause death or serious injury to most things.

The usual trade-sized plants in 5 or 6-inch pots should be procured, selecting such as have been stopped, so as to have several shoots near the base, as they have naturally a disposition to spire up without branching, which tendency must be counteracted by pinching out the points at intervals. Where the object is to grow large bushy specimens, at the beginning of April they should be moved into pots 4 inches larger than those they have occupied. As they are not impatient of having their roots interfered with they should be gently loosened, so as to spread them out a little in the new soil, which ought to consist of good fibrous loam broken not too fine, and to which has been added a moderate quantity of sand. Use the potting lath, so as to make the soil solid. Place the plants where they can be kept a little close, and syringe overhead every afternoon, closing the house early enough to cause the temperature to rise considerably. They require a plentiful supply of water when growing, and must not be allowed to become dry—they will need even immediately after potting a good deal more than most things, and when the roots have fairly commenced growth they want over double the quantity requisite for many hard-wooded plants. If the shoots have made 8 or 9 inches of growth beyond where they have previously been stopped back to, they should at the time of potting have their points again pinched. Encourage growth as much as possible, and as the shoots extend in length use a few sticks to keep the plants open, but nothing in the way of support will be needed, as the growth is strong enough not to require such.

Neriums are particularly light-loving plants, consequently no shade must be given. Syringe freely every afternoon; by the middle of July they will have made considerable growth, and should be turned out-of-doors in the full light, with a piece of canvas round the pots to ward off the force of the sun, which will otherwise have an injurious effect upon the roots that will now lie thickly against the inner surface of the pots; supply them plentifully with water, and continue the use of the syringe.

About the beginning of September the growth will be well ripened, and the flower-heads be about forming. They should now be taken indoors, and kept through the autumn and winter in a temperature of from 40° to 45° in the night, giving them much less water, but not allowing the soil to become too dry, or the bloom-buds that are formed will be in danger of falling off. If the plants are wanted in flower earlier than they will come in by the influence of solar heat, they may, about the middle of March, be placed in a night temperature of 55°, with 8° or 10° of a rise in the daytime, which will considerably hasten their blooming, but too much heat and moisture must not be used, or it will cause the buds to fall off. After flowering, put them in pots 4 inches larger, and encourage growth in the same way as the preceding season; they will not require stopping, as they will make a number of shoots from the base of where the flowers were produced; again expose them to the full sun in the open air. Keep through the winter as previously; in the spring after blooming they will in all probability be getting taller than required. If such is the case, cut the strongest shoots well back, give them another shift, and encourage growth as before, submitting them to open-air treatment in the latter part of the summer. After the next spring flowering, if getting larger than needful, they can be headed down, and as soon as a little growth has been made a good portion of the old soil may be shook from the roots, replacing them in the same pots, in new soil, afterwards growing them on as before, and by the liberal use of manure-water they may be kept going for a couple of years without repotting, when younger stock can be grown on to supply their place.

Where Neriums are required for flowering in a small state the best method is to keep a large plant or two, which grow on each season, and then ripen up in the open air as above recommended; when the flowers show on the points of the shoots cut these off about 8 inches in length and strike them singly in 6-inch pots, using soil similar to that advised for growing them in; put them in a gentle bottom-heat, and keep the tops as cool as possible; give plenty of water and a little shade. So treated they will quickly form an abundance of roots, when they may gradually be inured to a greenhouse temperature, in which let them be through the winter; in the spring they can as wanted be either allowed to come into flower slowly or brought on in a little warmth, as recommended for the larger plants, after which they may be potted and grown on as required.

The following are all well worth a place:—

N. splendens.—Reddish pink.

N. album.—White.

N. variegatum.—Striped.

Insects. — Should aphides or thrips make their appearance, fumigate with tobacco; the syringing recommended is generally sufficient to keep them free from red-spider; if they get affected with scale it can be removed with sponge and brush. *T. Baines.*

THE DUKE OF BUCCLEUCH GRAPE.

If my memory serves me rightly I think it is about three years next May since Mr. Thomson sent out the above Grape, and I think I shall be right in saying that very few Grapes of recent introduction have been sent out to the public with such high credentials. The raiser's name alone was recommendation enough to induce hundreds of gardeners to purchase it. The announcement of a white Grape being sent out which was said to ripen six weeks earlier than the Black Hamburgh under the same treatment was a source of no small relief to scores of early Grape forcers. Well now, this new white Grape, which was sent out with such a name, and eulogised for some time in the horticultural journals, has so far receded in popular estimation that the betting is now fifty to one against it. I am of course speaking of this neighbourhood alone, and I can truly say that this "Duke" has been more anathematised than all the other new Grapes put together that Mr. Thomson has sent out. The Golden Champion has had its fair share of execrations from the "craft," and, Champion though he be, he has been jostled to-and-fro by public opinion, until his numbers are now reduced to a very small minimum. Perhaps the few that remain may outlive prejudice, and may yet become as useful as they are noble auxiliaries to our present varieties of white Grapes.

Those who persevere for a time in studying the peculiarities of any particular variety of fruit are certain to meet with success in some measure in the end. But am I about to wander from my subject: is not "the Duke" a twin brother of the Champion? So say many of my friends, and I have been twitted no little about my Duke by a few good-natured brothers who pretend to lend me their sympathy, but whose gestures rather lead me to believe that their pretended sympathy savours more of sarcasm than of real feeling for the disappointment they expect me to meet with.

Now for the real point in question. I have a leaning for "the Duke," and I want to relate honestly all that I know about him, and your readers can then draw their own conclusions. I believe I was the first gardener about Liverpool who purchased "the Duke." I had him direct from Mr. Thomson in May; a two-guinea cane, a little over a foot long, and certainly a very small looking article for the price. I was, however, satisfied with his looks, and immediately set about doing what I could to increase his stature. I was in process of planting a range of vineries at the time, and "the Duke" was planted in a Hamburgh-house in the month of July, and made a very good cane that season. Owing to a transfer to here I was reluctantly compelled to split partnership with my young Vines, and my foreman, who succeeded me, did not manage to fruit "the Duke" last year; and here I must admit that my confidence was somewhat shaken after it had failed in the hands of a man who not only knew as well as I did how to manage young Vines, but who also took a particular interest in the management of "the Duke." This year the Vine is fruiting as freely as the Hamburghs, and is literally laden with bunches; and, what looks much better, I have a young Vine of it myself which was raised from an eye from the original cane which is bearing a very heavy crop of fruit.

From the conduct of "the Duke" with me I must say that it fully bears out every word that was said in its favour when it was first sent out, and I am tempted to ask how it is that "the Duke" gets such a bad name? I have heard some complain that it will not even grow with them, and those who can grow it say, "Oh, it is a Champion! It will only bear a single bunch, or it will bolt to tendrils unless we tie a stone to its tail, as recommended by Mr. Fish, to keep unmanageable Vines within bounds. The Golden Champion is fruiting equally free with me, but, as I have never ripened fruit of either Grape, I am not putting myself forward as an authority beyond the experience which I have endeavoured to lay down. It cannot, at all events, do any harm to hear how "the Duke" is behaving in other localities, or how far it is influenced by soil and climate.

Before I conclude I may just mention that many new Vines are unconsciously deprived of their true character by "the trade," who of course are not to blame, as they are anxious to sell as many canes as they can whilst they can command a good price. The public, in fact, flood them with orders, and the consequence is, that nurserymen are compelled to send out immature, half-grown canes, which always turn out a failure. I remember being foreman at a nobleman's place in Scotland when the Golden Champion was first sent out, and although the gardener had been under Mr. Thomson for eight years, he could do nothing with the Champion which which was sent him by an Edinburgh firm, noted for their attention to growing Vines for sale.

No one of experience could expect a cane about as thick as a straw and as green as grass ever to become a healthy, fruitful Vine. The Vine referred to retained vitality for a time, and eventually died, whilst well-grown, well-ripened canes on either side made timber like walking-sticks. *W. Hinds, Otterspool Gardens, Liverpool, March* 31.

The Villa Garden.

Town Gardening: Outside Window Gardening.—"When the east wind has gone and the sharp frosts are over," wrote Miss Maling in one of her pleasant gossiping papers on *Indoor Gardening*, "the pleasantest time of the whole gardening year begins, and we can fill our window-boxes with very gay spring flowers, to last us till the warm summer days enable us to bring out our treasured room-plants for a little air." This passage suggests an excellent idea, but one unhappily that is not nearly so much applied in practice as it deserves to be. This is really and truly a fact.

We are on the very threshold of the London season, when the pulse of fashionable life in the metropolis will beat with great activity amid the whirl of excitement it occasions. The season of Lent is almost at its close, and with the Easter festivities comes a long round of pleasurable engagements incidental to a fashionable existence. London dwellings are thrown open and their fronts decorated, and floral embellishments added. We are just now being treated to the first illustrations of them, as the exterior of many windows testifies.

We, however, fail to observe any of the pretty spring flowers to which Miss Maling alluded. There are spring flowers almost in abundance, but they have been forced into bloom in a warm temperature, and the consequence is that when introduced to the open air, where the sun can play upon them without any screen to ward off its direct rays, and where chilling and drying winds play upon them also, their beauty is speedily tarnished, and they quickly fade. Such is the fate that befalls many a bright Cineraria, roseate Primula, rich Azalea, and delicate Deutzia. True it is that the decaying plants are soon replaced, yet it is not window gardening, but simply window furnishing—a somewhat hapless massacre of the innocents in plants. Sometimes Hyacinths, Tulips, and Crocuses are employed in the same way, brought fresh from the forcing house, and they, too, soon go the way of the other plants.

The exterior box, with its glass sides and arched roof, greatly assists to maintain the freshness and beauty of forced flowers, if they receive a proper share of attention. Ah, how much depends on that simple conjunction "if"! When proper attention is given to the plants they can be preserved for a considerable time in a presentable condition, but in a great many instances this attention is not forthcoming, and most lamentable consequences result. After all it is not the kind of window gardening we are desirous of encouraging, for we deem the open garden or box, filled with plants appropriate to the season, to be by

far the best and most natural method of window gardening.

We have frequently advocated the employment of hardy evergreen plants, such as Junipers, Rhododendrons, Euonymus, Box, and other green-leaved plants, together with variegated Aucubas, Euonymus, Hollies, and the winter flowering Laurustinus, among others, as the best adapted for winter work. In arranging these much scope is offered for display of taste and skill in grouping. In the case of a wide box, a back line of these plants may be left for the summer, though, as fitting summer plants are so plentiful, it is best that the evergreens should be removed altogether, say in March. There is no need for trusting them. When lifted from the window-box the long roots may be trimmed a little, and the plants then firmly potted in 48-pots for the summer. They can be stood in an area floor, in a back-yard, or on a lead that is somewhat exposed, if the pots are plunged in cocoa-nut fibre, and the plants kept well sprinkled overhead, as well as kept moist at the roots. The box cleared, the spent soil should be taken out and more obtained for placing in the box. As it can be obtained of any florist, there is no necessity for making a difficulty of it, and florists abound throughout London and its suburbs.

Covent Garden and other markets, besides hawkers innumerable, as well as any dealer in plants, can supply hardy spring flowers of many kinds for furnishing boxes. As these hardy plants are to a great extent grown specially for the hawkers, they are invariably dwarf, bushy, and well-rooted examples. These are a fitting material for a background—the dark and yellow Wallflowers, both of a dwarf, bushy, and very free-blooming character. They can be arranged in lines, the dark backing the yellow, or the two colours can be intermingled in the background. By pinching away the main stalks as soon as they begin to fade side shoots are given forth, which keep up the succession of bloom. Then should come a line of fancy Polyanthus, with their bold trusses and varied coloured flowers; and dotted among them here and there should be patches of the pretty blue Grape Hyacinth, which is just now coming into flower. Then might come a line of Myosotis dissitiflora, mingled with the common yellow Primrose, and even with some of the fine dark-coloured varieties; and there should be a front line or edging of double red, white and pink Daisies mingled together. That is, after all, but a simple method of arrangement, but the same subjects might be variously distributed, and there are also other spring flowers of equal value. Among those we may indicate Pansies and Violas, double Primroses, Arabis, Aubrietia, Anemones, Cheiranthus alpinus, &c. There is far more of an enduring character, as well as a pleasure-yielding quality, about such flowers as these than about the ordinary forced flowers so much employed. The idea of a garden can be maintained when the former are used; in the case of the latter, scarcely ever.

The soil needs to be pressed firmly about the roots. Then over the surface can be laid a layer of moss or cocoa-nut fibre, which greatly assists the Polyanthus family. In early mornings sprinklings overhead should be afforded, and at the same time decayed leaves picked off. Such an arrangement would last in effectiveness quite to the end of May, if carefully attended to.

Fig. 86.—Polypodium vulgare cornubiense. (see also p. 469.)

THE CORNISH POLYPODY.

We have to thank Mr. Tyerman for the grand specimens from which the accompanying representations (figs. 86, 87) of the Cornish Polypody have been made. As will be seen from the latter figure, it is a most remarkable form, far more closely resembling in its general aspect some exotic Davallia than the wild Polypody of our hedgerows and pollard trunks. Fortunately, however, it furnishes conclusive proof of its specific relationship, for the plants, from the young seedling stages up to mature size, are prone to throw out fronds in which the normal character of its parent and its own peculiar development are combined. The same thing occurs in the equally abnormal variety of

the Lady Fern, which is called Athyrium Filix-fœmina Frizelliæ, only in that the abnormal variation is a reduction of the highly compound type to a pinnate form, while here the normal growth is pinnatifid, and the abnormal so excessively divided as to become decompound.

The variety was found many years since in Cornwall, and has received more than one name. That to which we give the preference—Polypodium vulgare cornubiense—points definitely to the land of its nativity, and, moreover, corresponds with that of P. vulgare cambricum, given to the Welsh Polypody, another form in which the fronds are more divided than in the type of the species. It has also been called P. vulgare Whytei, from its having been gathered by the Rev. Mr. Whyte. A batch of small seedling plants, only a few inches high, shown by Mr. Ivery, of Dorking, a few years since, showed the dimorphous development most distinctly, the greater portion of the fronds in some cases being nearly pinnatifid, while one or two of the segments themselves become bi- or tri-pinnatifid. Mr. Tyerman's specimens—for the possession of which we have to thank the Hon. and Rev. J. T. Boscawen—are very much the finest we have seen. *M.*

Foreign Correspondence.

Hurricane in the Mauritius.—Another of those destructive hurricanes which have made the Mauritius famous by the frequency of their occurrence, swept over the island on March 17 and 18, causing great damage to the Sugar-cane crops, the more advanced canes having suffered most, as is usually the case. From the suddenness with which the storm set in little preparation could be made, in consequence of which whole villages have been unroofed, in some instances completely blown away. Of the large number of ships in the harbour not one escaped injury, from coming into collision with each other; many are dismasted, others have been driven ashore, and everywhere the hand of destruction is visible. Trees lie uprooted everywhere: I noticed one at the B tanic Gardens which merits special notice—it is a species of Spondias and would seem to have gone over suddenly. The roots have lifted from the ground a ball of earth of at least 30 tons; some of the roots project into the air a height of from 25 to 30 feet. Here also the fine avenues of Stevensonia grandifolia and Verschaffeltia splendida have been all but destroyed; very few seed-bearing plants are left standing. Several fine specimens of Dammara, Araucaria, and Podocarpus have been snapped in the middle. A beautiful avenue of Caryota urens has been entirely destroyed. The Oreodoxa avenue has suffered but little beyond the loss of all the leaves; the naked white stems of the plants, which are about 40 feet in height and about 4 feet in circumference, present for the moment a very curious appearance, reminding one of the pillars of an ancient Grecian temple. Fallen plants of Artocarpus integrifolia, Latania rotundifolia, Sagus Ruffia, Urania speciosa, &c., have blocked the walks everywhere.

A large band of natives are busily at work clearing away the *débris*, and it is expected the gardens will be cleared in about a month hence. The pestilential stench which rose from the fermenting leaves, &c., was very annoying for some time, and has no doubt contributed greatly to the widespread sickness at present prevailing among all classes in the island. Great activity in house-building is going on, and the demand for timber, Bamboos, midribs of Raffia leaves, in short anything that can be used for running up houses quickly, is very great. It is estimated that the cane crops have been reduced by £1,500,000 in value by the effect of the storm. *S. S., Mauritius, Feb.* 26.

Notices of Books.

Beiträge zur Biologie der Pflanzen. Herausgegeben von Dr. Ferdinand Cohn. Drittes heft, mit sechs zum theil farbigen tafeln. (Contributions to Vegetable Biology.) Williams & Norgate, London.

The table of the contents of this volume of 224 pages, coupled with the fact that most of the contributors are men whose observations carry some recognised weight with them, will give an idea of its interest for the student of vegetable biology, as exemplified by the lower organisms. It is not our intention to attempt to criticise the work done; indeed, in most cases it would involve a repetition of the experiments and observations described. We glean a few of the results believed to have been obtained by the writers. Dr. Schroeter's examination of, and experiments with, some of the rust fungi have led him to the presumed discovery that Æcidium Urticæ is the fruiting condition of Puccinia Caricis. A very common fungus on different grasses, Epitea Poæ and Epitea Dactylidis, is now connected with Uromyces gramineum (syn. Puccinella graminis, &c.), under the collective name of Uromyces Dactylidis. Schroeter could distinguish no difference between the forms growing on Poa and Dactylis, either of the Epitea or the Uromyces. The writer also believes there is no doubt that Æcidium Ranunculacearum, DC., or at least the form occurring on Ranunculus bulbosus and R. repens, is one of the stages of Uromyces Dactylidis. And probably the Æcidia found on R. acris, R. polyanthemos, R. auricomus, and R. lanuginosus should also be referred here.

Dr. Just's experiments on the resistance to evaporation offered by the epidermal growths were instituted with Apples, and furnished some remarkable results. Two series of experiments were carried out simultaneously, one with pared, and the other with unpared fruit. For the purposes of the experiment the Apples were suspended in broad-necked bottles, in the bottom of which was a certain quantity of chloride of calcium. The bottles were stopped with good corks, and placed in one of Horstmann's thermostats, which was kept at a regular temperature by means of one of Reichert's thermo-regulators. Eleven Apples were used in each series of experiments, each pair (one pared and one unpared) being subjected to different temperatures. The weights and surface of each Apple were taken immediately before operating upon them; and they were under experiment four days. The weights were taken every twenty-four hours. The first experiment was at a temperature of 21° C. (69°.8, Fahr.); and under these conditions the unpared Apple, whose original weight was 103.1 grammes (about 1592.3 grains), lost 4,14 grammes (about sixty-four grains) in the ninety-six hours, or at the rate of 3.322 grammes (51.3 grains) per square decimetre (14.5 square inches); the unpared Apple, weighing 86 5 grammes (about 1335.9 grains), lost 50.72 grammes (783 3 grains) in the ninety-six hours, or at the rate of 44.24 grammes (683.2 grains) per square decimetre. Passing by the experiments at the intermediate temperatures, we will give the results of the pair at the highest temperature, 97° C. (206°.6 Fahr.) The unpared Apple, which weighed at the beginning 119.4 grammes, lost 102.36 grammes in the ninety-six hours, or at the rate of 73.89 grammes per square decimetre, whilst the pared one, weighing 112.57 grammes at first, lost only 97.75 grammes, or at the rate of 73.67 grammes per square decimetre. The experiments at intermediate temperatures between 21° and 97° C. gave some interesting results. The maximum evaporation per square decimetre in the ninety-six hours from the unpared Apple was at 83° C. (181°.4 Fahr.) at the rate of 78.11 grammes per square decimetre. The maximum evaporation from the pared Apple was at 46° C. (114°.8 Fahr.), when it was at the rate of 85.5 grammes per square decimetre.

Dr. Schroeter's trials of the principal disinfecting substances commonly employed were made, chiefly in the direction of testing their killing powers on such organisms as Bacterium Termo, Mucor, and Penicillium. The first disinfecting agent considered is heat. From the earliest times fire has been regarded as an efficacious disinfectant, both in its combustive and heating powers. Of course, if the contagious germs were inorganic poisons there is no reason why they should not be able to withstand the heat as well as the iron to which they may be clinging.

Respecting the lower organisms, Dr. Schroeter refers to the labours of Cohn and others published in previous parts of the *Beiträge*, and states that there is now no doubt that a temperature of 212° Fahr. will kill any of them. Although it has often been asserted that boiling heat will not kill Bacteria, there is little doubt that such assertions are erroneous, and founded upon delusive experiments. In boiling a liquid containing Bacteria in an open vessel, and then awaiting its cooling and the subsequent development of Bacteria, there is always the possibility of some of the germs escaping in some way the full action of the heat. Cohn has proved beyond dispute that Bacteria subjected to a temperature of 212° Fahr. for twenty minutes in a closely soldered alembic, lose the power of propagation. Dr. Schroeter states that even so high a temperature as the boiling is not necessary to kill Bacteria. Infusoria die at a relatively low temperature. At 107°.7 their movements are already perceptibly slower, and at 132°.8 they almost invariably cease altogether. The Bacteria will bear a greater degree of heat, but at 136°.4 all motion ceased, and, the experiments being extended, it was found that they were quite dead. This Dr. Schroeter considers eminently satisfactory, inasmuch as steaming might do the work of burning, and in many large towns there is much unused steam set free which might do good service in the way indicated.

Respecting the value of chloride of lime as a disinfectant, much difference of opinion prevails even among scientific men, hence records of its effects on the lower organisms are of some importance. Braconnot found that a certain proportion added to a fermenting liquid would arrest fermentation. From Dr. Schroeter's experiments it appears that chlorine gas has no effect whatever on dry objects, such as the spores of Mucor and Penicillium, but if placed on a moist glass plate, and exposed to the fumes of chlorine, they change in the space of a minute from their normal grey-green to a dirty yellow, and spores treated in this manner will not germinate. Various other experiments confirmed the opinion that chlorine gas without moisture is absolutely inert, and useless as a disinfectant. In practice, therefore, its value is very limited. Fumigations with it avail nothing, and are even hurtful, because dependence is placed in its power to disinfect clothes, furniture, and apartments. Carbolic acid was another of the disinfectants tried. It has rather the power of arresting growth and further development than that of killing. Spores of various organisms will germinate under its influence, but they do not get beyond this stage. Carbolic acid in solutions is a very active agent in the destruction of the lower organisms, even when employed in exceedingly small quantities, and it is doubtless one of the best agents for purifying drains, &c.

Dr. Frank's communication on the unequal or one-sided development of the flowers of a catkin is of present interest, because the season is at hand when his statements can be tested. He asserts that the flowers on the south side of the pendulous catkins of Willows, &c., are always considerably in advance of those on the north side. This phenomenon is especially marked in the male catkins, and it is also quite evident in the females. We have not sufficient space to give details of his observations and experiments. Let it suffice to quote a few examples indicating the length of the filaments on the north and south sides of two or three catkins:—

South Side.	*North Side.*
I. Filaments 8 millimetres (about .315 of an inch) long; anthers quite empty.	I. Filaments, 3 to 3.5 millimetres (about .12 to .14 of an inch) long; anthers unopened.
II. Filaments 5.5 millimetres (about .22 of an inch) long; anthers just opened.	II. Filaments 1 to 1.5 millimetre (about .04 to .06 of an inch) long; anthers still in a very young state; partition not completely formed.
III. Filaments 6.5 millimetres (about .26 of an inch) long; anthers quite empty.	III. Filaments 1.5 millimetre (about .06 of an inch) long; anthers still in a very young state.

To compare with these measurements of the stamens in their normal position a number of branches were reversed and fixed in that position just as the catkins were emerging from the buds; and the flowers showed the same differences in their relative degrees of development on the north and south aspects. From a number of experiments at different dates it appears that the periods during which the light produces this effect is between the ninth and the fourth days before the flowers begin to expand. But what is very singular in this phenomenon is that light affects only the relatively earlier expansion of the flowers. The secretion are contemporaneous on both sides. In allied amentaceous genera and families, in which the catkins are less dense, no difference in the time of expansion could be distinguished.

Dr. Cohn's researches on the function of the bladders of Aldrovanda and Utricularia reveal little that is not known in this country respecting insecticidal plants, beyond being fresh subjects of investigation in this direction. The writer enters fully into the wonderful structure and adaptation of these organs to the purpose of entrapping animals, and enumerates a great variety of rotiferæ, infusoria, crustaceæ, &c., found in the bladders of the plants named.

Dr. Cohn found that these organisms sooner or later succumbed, and all except their indestructible skeletons disappeared. Nevertheless, he is not prepared with any decisive evidence either for or against the theory that these plants extract nourishment from the insects and other organisms captured. But although the writer does not commit himself to any positive statement on this point, he fully acknowledges the possibility, and even probability, of such being the case. Indeed he seems to favour the view that the plants absorb the soft parts of the animals, observing that both Aldrovanda and the large genus Utricularia are rootless plants.

The remaining papers are too lengthy and involved to be intelligibly summarised in the space we have at our disposal.

Law Notes.

Disputed Salesman's Account. — *Howe* v. *Hampton.*—This was an action brought in the Westminster County Court on Tuesday last, in which the plaintiff, carrying on business as a salesman in Covent Garden Market and King's Cross, sought to recover £3 1s. on an account stated. The plaintiff, having proved the purchase and delivery of the goods, the defendant said he only objected to two items in the account—one for two sacks of blighted Victorias which were sent instead of two sacks of Lincoln Regents, and which were unfit for human food; the other item objected to was a sack of kidneys, which were as bad as the Regents, and most of which the plaintiff could have had by sending for them.

In cross examination by the plaintiff the defendant admitted ordering the goods in January, and that he did not make any objection to the quality until the present action was brought. In answer to the learned Judge the defendant admitted selling a part of the best of the kidneys, and also trying to sell some of the Victorias, but one of his customers threw them at his face. He also admitted receiving the bill for the goods in January last, and added that he had asked the plaintiff to make an allowance for the bad Potatos, but the plaintiff declined, as he had bought them with his eyes open.

At this stage of the proceedings the learned Judge told the plaintiff he must pay the whole amount, as, if he had any fault to find with the Potatos he should have returned them at once, and not have waited to complain about them till brought into Court.

Garden Operations.

PLANT HOUSES.

Plant Stove.—Achimenes that were started some time back, and have now made 2 or 3 inches of growth, should at once be moved into the pots and baskets in which they are to flower. There are few plants wherein the difference in appearance between well managed as compared with drawn up weakly growth is so apparent as in these and Gloxinias. From the time the shoots appear above the soil they should be kept well up to the glass in a light position. Achimenes make such excellent basket plants that it is somewhat singular they are not oftener seen so used; ordinary galvanised wire baskets are the best, lined with a couple of inches of sphagnum, over which place an inch of drainage, and fill up with light soil. A portion of the plants may be put in so as to grow out through the sides of the basket, as well as upwards from the surface, with a small stick to each shoot as soon as it is required; for this support there is nothing better than small shoots, selected from Apple and Pear prunings, or the straight shoots from a Thorn hedge. If the best of these are picked out at the time the pruning and clipping is done, they come in for tying such plants as the above, Pelargoniums, and anything of a similar description; for these they are equally as good as painted deal sticks, look better, and save a good deal of labour in making. For conservatories hanging baskets are rarely used so much as they might be with advantage, as by a little forethought in providing things that will flower at different times through the summer, a succession of bloom in this position can be secured with quite as good an effect, and affording more change than when there is nothing to relieve the monotony of the roof climbers.

Where basket plants are grown in sufficient numbers there is less necessity for allowing the climbers to get so large as they generally do, to the serious injury of the other plants. Of course the baskets should be confined to overhanging the paths, as if suspended over other plants injury will occur from drip in watering. The different species of Æschynanthus, from their drooping habit, are particularly adapted for baskets, and will come into flower during the advanced summer, and keep on through the autumn. For this purpose Æ. grandiflorus, Æ. Lobbianus, and Æ. Boschianus will be found well adapted. For large baskets Columnea splendens is a good plant. Torenia asiatica is another free-growing and almost continuous flowering subject of the easiest management. The drooping varieties of Hoya, H. bella and H. Paxtoni, are perfectly suited for this kind of work, as they have a nice appearance even when not in bloom, and the only position in which their flowers can be seen to advantage is when they are suspended in baskets. The blue-shaded Selaginella, S. cæsia, is one of the most effective drooping basket plants that can be grown, requiring little attention except a plentiful supply of water through the growing season.

Place Gloxinias near the glass, so as to keep the growth of both leaves and flowers close and compact, without which their blossoms they have a shabby flaccid appearance, and are so soft as to be useless in a cut state, for which purpose they are particularly adapted if grown in a way to fit them for it. The summer flowering Gesneras, of which G. Cooperi and G. Donkelaari may be taken as representatives, should also now be accommodated with a light position in a moderate heat. If these are well managed they will bloom twice in the season, allowing them a slight rest for two or three weeks after the first flowering is over, but they must not be kept dry during the time, or the roots will get a check that will prevent their moving freely afterwards; simply keep the soil a little drier and the plants a little cooler, after which the tops may be removed, and the plants pushed on again in brisk heat, when they will throw up a second lot of shoots which will flower through the autumn. Unless the pots are small they will not need shifting after the first blooming, as they can be better kept going with manure water. All twining or climbing plants, whether grown as trained specimens or otherwise, will now require constant attention every week to keep the shoots from getting entangled, for if this is once allowed to take place, especially with trained plants, it is impossible to afterwards regulate them without injuring the incipient flowers; in all cases the points of the shoots must not be bent down, but should be allowed a position higher than the other parts of the plants, or they will either cease extension altogether or grow so meagrely as to seriously interfere with the development of the flowers. I allude to this especially, as young growers of these subjects, even in the case of Allamandas, often for appearance sake keep the shoots regularly trained round the trellises with their points closely tied down, after which they generally make little progress, the plants at once setting about to re-establish the equilibrium of the sap by breaking the back eyes that occupy a higher position on the trellis. Blinds if not already in their places should at once be got on, the sunless weather we have had through the preceding month has not necessitated their use, but the growth made under such conditions of weather is particularly liable to suffer from scorching. Whatever material is used it should be such as to break the rays of the sun, rather than to exclude light by being too thick, and should also be movable that it can be drawn up when not required. However thin it may be, if fixed on the roof it is impossible for light-loving flowering plants to succeed well under it. *T. Baines.*

Orchids.—By damping the paths, walls, &c., and syringing between the pots, with the fire-heat carefully regulated, a nice growing temperature must now be maintained in the various divisions. The plants, as they individually start into active growth, must have more water applied to the roots, but caution must be exercised, for in many cases the roots do not appear till the breaks are well away from the previous growths, so that at present, if the soil is just moderately moist, it will be found to be sufficient. When the weather is bright and clear a slight dewing with the syringe, not exactly overhead, but well up among the foliage, may be given early in the afternoon, and the blinds run up, so as to raise the temperature 5° to 8°. The syringing of the plants must be done very carefully, for the broad smooth leaves catch a good deal of the water, which is apt to collect in the axils, and thus cause the spikes to be injured, or in other cases to run down the bulbs, and cause the shoots to turn black and decay. Whether for watering or syringing, the water should always be several degrees warmer than the temperature of the houses, and that this might be always obtained tanks for holding water in the houses should be built of good size, and always have a hot-water pipe running through them. The stages of the houses should be constructed so as to add considerably to the moisture of the atmosphere. If these are made of open laths they should be covered with roofing slates, and a narrow strip of wood nailed along the back and front so as to allow of about 1 inch of open loose material to be spread upon it. The ordinary furnace coke broken into pieces about three-quarters to an inch square will be found to be some of the best that can be obtained, for it has the property of retaining moisture a long time, and, being of a dark colour, is far to be preferred to the white spar or limestone chippings that are used in many establishments. It is very doubtful whether there are any places where naturally white soil is the rule, or where limestone rocks are bare, and no particle of decayed vegetable matter covering the surface which otherwise would be so trying and wearying to the sight. This white surface below the plants I hold to be very objectionable, not only to the eye, but the reflected light below the plants is, as far as my observation of Nature goes, quite unnatural and undesirable and altogether an artificial arrangement. Not only so, but the plants themselves never appear so green and healthy on a white surface as when a dark colour is below and around them. Vanda teres, which in habit and growth is so very different from the majority of its class, should now be showing flower; when well grown there are few plants that are so beautiful and attractive as this, and since it is only occasionally that we see it managed successfully it has the reputation of being a shy bloomer. This as regards small plants is doubtless true, but it should be remembered that in its native habitat it is found growing up the stems of trees, sometimes attaining a height of 8 or 10 feet. It will thus be seen that plants of only 2 or 3 feet of stem can scarcely be expected to flower freely, for it is so often cut down, to hide the loss of the lower leaves, as well also as to be more handy in moving and lifting it about, that it is very rare to see what we may term a well-established plant. During the growing season in the summer months this plant will stand a good share of heat and moisture, with occasional syringings overhead; this will cause it to root and grow freely, and if exposed to a strong light the growth will be stout and plump, and give good hope of flower in its proper season. When the growth is completed, and the roots closed up again in the autumn, water must be withheld and the plant stood in a cooler and drier house, where the night temperature may be allowed to fall as low as 50°; here it should remain for three months, then brought back to the East India house, where it will gradually plump up and remove any shrivelled appearance it may have acquired, and show its spikes of bloom near the top of the new growth. *W. Swan, Fallowfield.*

HARDY FRUIT GARDEN.

The season for disbudding the earliest varieties of fruit trees on walls is close at hand, and should have early attention, as it is not desirable to remove too much at once; and the first disbudding should generally be confined to the removal of all foreright shoots, leaving all the side shoots until later on in the season, as they contribute greatly to the protection of the young and tender fruit. Apricots will be the first to require this attention, and during the process a good look-out should be kept for the signs of the "worm i' the bud," which is generally indicated by the young leaves being drawn together in a cluster. On opening this a very active little grub will appear, which, if not smashed, will very speedily make its escape by falling to the ground. These are very destructive to the young fruits, and every means should be used for their extermination, one of the most effective of which is that of dressing over both shoots and bricks with the composition before recommended at the proper time, as the moths deposit their eggs in clusters, which they glue on to the smooth and shining surfaces of the young wood or any of the glazed surfaces of the bricks, and the colour is so similar that it requires very sharp eyes to find them out. Grafting new varieties of Pears and Apples on old trees should now be finished off as soon as possible. The easiest and most certain method is to graft in the rind by making one splitting of the bark in the direction the graft is to be inserted, and then, gently raising the two sides, insert the scion, and bind and clay in the usual manner, and cover the clay with moss, to prevent cracking. All newly-planted fruit trees should now be headed back, the ground pressed firm about the roots, and such as require it properly secured against the effects of high winds. Also let the mulching be attended to, and if it is laid in the form of a basin round the stem, and a few gallons of water poured in now and then, it will be of great benefit, especially in light soils with a dry bottom. Go once again over the Strawberry beds, and disturb the soil, breaking down all lumps, and otherwise preparing them for the necessary mulching with short litter or any approved material for keeping the fruit from the dirt. Bear in mind, likewise, that they must have one thorough good soaking of water as soon as they are fairly well started into growth, and other copious applications as the season advances, more or less, according to the state of the weather. *John Cox, Redleaf.*

FRUIT HOUSES.

Orchard-houses.—Since April has come in the weather has been more favourable, the days being sunny, with slight frosts in the mornings. All the trees in flower will now have plenty of air and heat to set their fruit well, for close, muggy weather is the worst possible for orchard-house trees when in flower. It is a tedious process to go over many trees to set the bloom with a feather or camel-hair pencil, for shaking the trees with the hand will now distribute the pollen enough to cause the bearing of an abundant crop. Pear, Cherry, and Plum trees, will be the latest in flowering, that is, if they have been left out-of-doors until lately, and their management will now be easy as regards setting their fruit indoors in such weather. The early forced trees in heated houses will now be getting to the stoning processs, and it is better to let the thinning of the fruit (if not too thickly placed) alone to see what are likely to drop off. Still keep syringing the trees daily to keep red-spider down, and if the aphis appears on the foliage fumigation must be resorted to before they get too numerous to curl the young leaves. Some weak manure-water applied once a-week will greatly assist the trees in swelling their fruit after the stoning is over. Whilst the present bright sunshiny weather lasts, early shutting up, instead of leaving air on at night, will cause the atmosphere of the house to be warmer, and so require less heating from the pipes or flues. *William Tillery.*

HORTICULTURAL EXHIBITIONS, 1876.

APRIL.

19.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
25.—Manchester Botanical and Horticultural Society. Exhibition of Auriculas, &c., at the Town Hall.
26.—Royal Botanic Society. Second Spring Show.
27.—Royal Horticultural Society of Ireland. Spring Show.
30.—Opening of the International Horticultural Exhibition at Brussels.

MAY.

3.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
5 and 6.—Alexandra Palace. Flower Show.
10.—Royal Agricultural and Horticultural Society of Jersey. Spring Show.
10.—Glasgow and West of Scotland Horticultural Society. Summer Show.
10 and 11.—Royal Aquarium and Summer and Winter Garden. Flower Show.
17.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
18.—Royal Horticultural Society of Ireland. Second Spring Show.
18.—Reading Horticultural Society. Spring Show.
19 and 20.—Crystal Palace. Flower Show.
24.—Royal Botanic Society. Summer Exhibition.
24 and 25.—Tiverton Horticultural Society's Show.
30 and 31.—Royal Aquarium and Summer and Winter Garden. Flower and Fruit Show.

THE

Gardeners' Chronicle.

SATURDAY, APRIL 8, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, April 10 { Sale of Orchids, Lilies, &c., at Stevens' Rooms.
TUESDAY, April 11 { Sale of Plants at Castle Nursery, Lower Norwood, by Messrs. Stevens.
WEDNESDAY, April 12 { Royal Aquarium, Westminster, Flower Show (two days). Sale of Mr. Rucker's Collection of Orchids, at Stevens' Rooms.
THURSDAY, April 13—Sale of Orchids, at Stevens' Rooms.

REVERTING to the proposed CLASSIFICATION OF APPLES, to which allusion has been previously made, a detailed analysis of the scheme, together with further experience from such Apples as we could get, show us not only the imperfections of the proposed plan but also the great difficulties that lie in the way of any feasible method, and therefore induce us to judge the more leniently of the gallant attempt which has been made. That it is no more than an attempt we have the assurance of the author, and when we say that, of the 300 sorts classified, nearly a third come under the head of exceptions, or if not of exceptions, yet that the same Apple may be found under three or more main groups, we may well say this is a case where the exception proves the rule—using the word "prove" in its proper sense of "testing."

The primary characters, as we have said, are based upon the appearance of the "eye" and on that of the seed-cells, not taken singly but conjointly. It is desirable, however, to discuss these characteristics singly. As to the appearance of the eye, "open" or "closed," this is in our opinion a most disappointing and fallacious character. It seems at first sight as if it would be so readily observed and conspicuous—it depends upon the form and size of the aperture of the flower-tube, and upon the infolding or turning back of the calyx-segments. The latter characteristic is especially variable, according to age and season, and is in practice difficult to ascertain, owing to the frequency with which the tips are broken off. So fallacious is this character, indeed, as tested by experience, that we feel no little surprise that a character so relatively unimportant should have been put in the front rank. Expediency alone could defend the placing it thus prominent, and if it fail, as we believe it will do, what then is its value? To be sure it must be taken, not separately, but in conjunction with the open or closed condition of the seed-cells, and the combination certainly adds strength to it, though not to any very great extent.

The open or closed condition of the seed-cells appears to us to depend on two quite distinct circumstances, first as to whether the seed-cells, cells of the core, carpels, or by whatever name they are to be called, meet closely in the centre of the fruit, or whether there is a central cellular prolongation of the fruit-stalk, which, by its thick or thin state, separates the seed-cells, or enables them to meet in the centre. The other point is what is technically called "dehiscence." In some Apples the seed-cells open along their inner edge, as a Pea-pod, or the follicle of a Pæony does; in others the seed-cells do not open, but remain closed or indehiscent. Now, although both these characteristics—the presence of a central cellular axis, and the opening or not of the cells—depend, in some measure, on the age of the fruit, yet experience has shown us that these characteristics are even more dependent on the particular variety of Apples. Winter Greening is an instance—it is a fleshy green Apple, retaining, so to speak, its herbaceous character, and not opening its seed-cells. Blenheim Orange, on the contrary, soon loses its herbaceous character, becomes more or less mealy, and its seed-cells gape open widely. So far as we have been able to test the matter, however, the character of the open or closed seed-cells is vastly better than that furnished by the eye.

Next in order comes the form of the so-called calyx-tube, by which is here intended the tube between the orifice of the eye and the top of the fruit. The characters afforded by conical, funnel-shaped, or cup-shaped forms are in practice most difficult of discrimination; no doubt good type-forms may be found, but, so far as we have seen, the intermediate forms are so numerous that it is very difficult, when a large series of Apples is before us, to discriminate between them, or to determine to which form some Apples belong.

Subordinate to the form of the "calyx-tube" is placed the position of the stamens—marginal, median, or basal—according as they emerge from the margin, middle, or base of the flower-tube. On botanical grounds we should have expected this to be at least as good a character, if not better, than those which are placed superior to it. Actual experience confirms this impression, and, so far as we can judge from the examination of a limited number of specimens at the fag-end of the season—not more than a third in number of the varieties enumerated by Dr. HOGG—this character is really superior in point of constancy to the others enumerated, and has the advantage of being less liable to alterations in point of growth, and to variation by reason of age. If this be confirmed by future observations on a more extended scale, then it is obvious that instead of being made a secondary character it should have higher rank. It has the disadvantage, however, of being a character not easily observed by gardeners.

The third main group—that characterised by the possession of "eye closed—cells open"—is that which presents the largest number of exceptions, and is altogether the weakest class of the whole. Again, it is a significant circumstance that the best known Apples, those of which the author has had the most specimens before him, are precisely those which fit into so many of his groups; while rare Apples, of which only a few specimens probably have been met with, are apparently more constant in their character. We say apparently, because we have little doubt when more specimens come to be examined they will be found as variable as the others.

The characters we have mentioned are the principal ones upon which the new classification is founded, and having stated our experience with regard to them it is hardly necessary to express any opinion upon the minor and presumably less important characteristics. If we are correct in what we have advanced, we have said sufficient to justify us in our regret that the classification has not been allowed to remain some time longer in the author's cabinet, in order to receive those final adjustments which every one who has undertaken a similar task, especially those who have had large practice in similar classifications, know are so very important to the success of the work.

When we find that such a large number of Apples registered in one class make their appearance in one, two, or even three other main classes, and when we further find that in some groups as many as ten, fifteen, even twenty-five varieties are all lumped together—and this not in a solitary, but in several cases—without any attempt at discrimination, we have said enough to show that this classification, however useful as an aid to the memory of a professed pomologist, and especially to its author, is not likely to be of much service to an amateur, or a young gardener with only a limited knowledge of the varieties of Apples, that its publication was premature, and that its official recognition by the Royal Horticultural Society yet more so. Still, although we have not shrunk from this free expression of our opinion, it would be ungracious not to express our sense of the obligation Dr. HOGG has conferred on pomologists by this gallant attempt, nor would we be oblivious that in this matter it is far easier to offer objections than to substitute a better scheme. Still it is no necessary part of the duty of a critic, in such a case, to assume the function of a classificator.

Another season will enable pomologists to test the value of the proposed scheme more fully than is possible now, and till then final judgment on its merits should be deferred. In the mean time something may be done, by those who have the requisite leisure and inclination, by contrasting the descriptive characters given in the *Fruit Manual*, and which, from having necessarily used it much in compiling these notes, we are enabled to say are admirable in their accuracy and expressiveness.

WE are in the habit of associating Christmas with beef, and with that so-called Rose which botanists called Hellebore, but we are not aware that any one has suggested any direct association between beef and Christmas Roses. Nevertheless, that the connection is not so far-fetched as may at first be imagined the following remarks may testify.

It is only recently, comparatively speaking, that, thanks to Mr. DARWIN, who has done so much to promote both directly and indirectly a knowledge of the manners and customs of plants, and thereby to extend the basis on which the culture of plants depends—it is only recently that we have come to accept the doctrine that plants may and do dissolve, absorb, and digest animal food in the shape of insects. But already the idea has lost its strangeness, and we hear of "carnivorous plants" as a familiar expression, exciting no surprise, but only the expectation that, as time goes on, many other instances will be added to those already recorded.

Actuated by such impressions, we lately made proof of the flesh-dissolving properties of Helleborus orientalis. Unfortunately our experiments were made somewhat too late in the year, and they were interfered with by the sharp frost which occurred on March 23, and which injured the younger flowers and the growing leaves of this noble species. Nevertheless, in spite of all their imperfections and incompleteness, we can affirm that the results, so far, accord in the main with what has been recorded in the case of other plants, and we mention the matter now in order that those who have the requisite leisure and oppor-

Fig. 87.—Polypodium vulgare cornubiense, the Cornish Polypody. (see also p. 465.)

tunities may follow up the matter in the case of other likely plants, such as the Columbine, Crown Imperial, or indeed in any plant whose flowers secrete in sufficient quantities and in sufficiently accessible manner a honeyed juice. The true petals, formerly called nectaries, of the Hellebore, are those peculiar green horns or tubes met with in one or two rows surrounding the stamens, and which secrete a honeyed juice. We suppose that the main object of this secretion is to serve as an attraction to insects to visit the flowers, and so transfer the pollen from one flower to another. We infer this from the fact that the maturity of the anthers and of the stigma is not simultaneous in the same flower, and hence transfer of the pollen to another flower whose stigma is mature, is a necessity.

If this be correct it would of course be of no advantage to the plant to immolate its insect visitor, as what it would gain in one way it would lose in another. Indeed, we have not found any dead bodies of insects in the tubes of the Hellebore such as one may find so frequently in the pitchers of Nepenthes or Sarracenia. Hence then as a rule it would be of no advantage to the plant to indulge in animal food. But it does not necessarily follow that the plant in question has therefore no such power, or that it does not exert it on occasion.

In the case of the Hellebore the tubular petals were filled with very finely chopped cooked meat, leaving some of the tubes in the same flower unfilled for contrast sake. The microscopic appearance of the normal petals was noticed and the reaction of the juice with litmus paper tried.

In the normal tube there are certain cells filled with yellow juice, which is diffused throughout the whole interior of the cell. But, after the insertion of the meat and its retention for some days, the yellow cell-contents were found to be compacted together into a globose ball; at least, in the case of those cells nearest to the meat; those at a distance showed the contents diffused. Moreover, the fibre of the meat may be seen reduced to a pulp, and under the microscope its constituent fibres may be seen disintegrated, and the peculiar striations characteristic of striped muscular fibre even more conspicuous than ordinary. Granular matter and oil globules exist in abundance, and give evidence of partial solution. Some of the same meat kept moist under a bell-glass side by side with the flowers that formed the subject of the experiment, showed little or no trace of disorganisation or putrefaction.

The action of litmus-paper is rather puzzling; at first, the juice of the tubes was neutral or only faintly acid, but after the meat had been allowed to remain for some days, an alkaline reaction was evidenced by the appearance of a blue tinge on previously reddened litmus. For the present, then, we state merely that the muscular fibre was partially dissolved, and that certain changes in the appearances of the cell-contents took place. More than this it would be rash to affirm.

—— From Brussels we learn that the committee of the International Horticultural Exhibition have decided to extend the time of application for space until April 10, in consideration of the unpropitious character of the weather during the spring and winter. We strongly advise those exhibitors who have not hitherto done so to apply at once for the necessary space. The order of proceedings is arranged as follows:—Friday, April 29, at 9 P.M., official reception of the members of the jury and of the Botanical Congress in the hall of the Hôtel de Ville, when the "*vin d'honneur*" will be offered by the Burgomaster. Saturday, April 30, 9·30 A.M., meeting of the jury at the exhibition in the "Plan du petit Sablon." In the evening, meeting at the "Cercle Artistique." Sunday, at noon, formal opening of the exhibition; spectacle at the Théâtre de la Monnaie. Monday, May 1, at 10 A.M., opening of the Congress; at 6 P.M., grand banquet offered by the Flora Society to the members of the jury and the congress. Tuesday, continuation of the congress. There is little doubt but that the exhibition will be of a brilliant character. Several of our British exhibitors, including Messrs. Veitch, Williams, W. Paul, Bull, are likely to be represented.

—— We learn that it is proposed to raise by subscription a fund for the purpose of establishing a memorial in honour of the late Daniel Hanbury. The form suggested for the memorial is that of a medal to be called the "Hanbury" Medal, to be awarded for original research in the chemistry and natural history of drugs by investigators in any part of the world. Dr. Hooker, C.B., President of the Royal Society; Sir George Burrows, Bart., F.R.S., President of the Royal College of Physicians of London; Sir James Paget, Bart., F.R.S., President of the Royal College of Surgeons of England; Sir Robert Christison, Bart., F.R.S., President elect of the British Association for the Advancement of Science; Dr. Allman, F.R.S., President of the Linnean Society of London; Warren de la Rue, D.C.L., F.R.S., President of the London Institution; Professor Abel, F.R.S., President of the Chemical Society of London; and T. Hyde Hills, F.C.S., F.L.S., President of the Pharmaceutical Society of Great Britain, have already expressed their cordial approval of the movement. Dr. Attfield, 17, Bloomsbury Square, acts as one of the secretaries to the fund.

—— In the old-fashioned flower garden at Wimbledon House there is a fine old plant of Cydonia japonica, 60 feet in circumference and from 8 to 10 feet high. The whole of the plant is now covered with flowers, and is quite a picture.

—— The thirteenth and last meeting of the season of the Wimbledon Gardeners' Improvement Society was held on Monday evening, March 27, when Mr. Edwards read a paper on the "Cultivation of Herbaceous Calceolarias," after which a sharp and spirited debate ensued. This being the last meeting of the season, several members rose and expressed the great pleasure they had felt in attending these meetings, and in taking part in the discussions, which throughout the whole season had been very interesting and instructive. A hearty vote of thanks from one and all was accorded to Sir Henry W. Peek, Bart., M.P., for his generosity in providing the Society with refreshments, and a suitable room for holding the meetings. A vote of thanks was also accorded to the Chairman, Mr. Ollerhead, for the warm and hearty manner in which he receives the members and carries out Sir Henry's wishes. These proceedings brought a series of very enjoyable meetings to a close. They will commence again in October next.

—— In the *Transactions of the Scottish Arboricultural Society* Mr. Hutton, speaking of Planting Sand Hills, remarks that the pulling of the Bent (Ammophila arundinacea), condemned by some as injurious to the growth of the plant, is on the contrary beneficial. An Act of Parliament, he tell us, was passed to prohibit the people from pulling the Bent, but it was soon seen that many knolls which before had been covered with luxuriant Bent where it had been pulled, became bare from want of pulling, and were broken and carried away by the prevailing winds in spring and autumn. This led Mr. Hutton to make direct experiments, which amply confirmed his previous observations. The best time to pull it is about the end of March.

—— The French Society for Acclimatisation is fast recovering from the check given to it by the war, and now numbers 1990 members, or within sixty of the figure reached in 1870. In 1875, 250 additional members joined. This Society, like many of the French horticultural societies, regularly publishes its *Bulletin*, from which we frequently extract an interesting note. As we have before explained, the object of this Society is not acclimatisation in the true sense of the term, but rather the introduction and dispersion of plants and animals that will succeed in any part of France and its possessions.

—— Many choice hardy plants are now in flower in Mr. Parker's nursery at Tooting, and amongst them we noted a few days ago the true old Double Crimson Primrose, a very scarce plant, differing from the spurious so-called double crimson now generally cultivated in its deeper colour and greater substance, the flower being altogether of a deeper build, and with less yellow in the eye than the commoner one. The so-called Blue Polyanthus is now going out of flower, but it has been a pretty object for nearly two months. Several Aubrietias have come into bloom, and the best of them is a seedling raised by Mr. Brown, and named A. purpurea grandiflora. It has a dwarf compact habit, is very free-flowering, with larger blossom than A. purpurea, and of a very bright colour—a very distinct and desirable novelty. Iberis semperflorens is one of the finest of the genus, having pure white flowers, and a free-growing and floriferous habit. It seems to be tolerably hardy, too, though generally treated as a tender plant. One of the earliest, and perhaps the finest, of the Doronicums to flower is D. austriacum. It has a nice dwarf compact habit, glaucous leaves, and fine yellow flowers. A batch in flower now makes a striking object from wherever seen. Caltha palustris minor is the earliest to flower, and has beautiful double yellow flowers. The richly coloured Iris reticulata has been in flower for months, taking the weather bad and good alike, and always pleasing. Erythronium album majus is also a desirable acquisition, the white petals being both broader and longer than in the typical plants. E. dens canis purpureum majus is a large, showy, and very fine variety. A rare Liliaceous plant, also in flower, is the Siberian Puschkinia scilloides, whose delicate pale blue flowers are very pretty. The scarce Primula Nelsoni is flowering very nicely, and producing large trusses of pure white flowers. Many of the Scillas are flowering beautifully, but the most interesting is perhaps S. sicula, a very rare species, with flowers white on the surface, porcelain-blue underneath. Of the Muscaris, one of the finest is M. Szovitzianum, which throws up strong spikes of very deep blue flowers; and of Iris, in addition to the one above mentioned, must be noted the distinct rosy-tinted I. albida rosea. The deliciously Hawthorn scented Aponogeton distachyon flowers here all the year round, and is quite at home in a ditch specially made for it.

—— We hear that Mr. J. T. Peacock, Sudbury House, Hammersmith, has organised a concert at the Royal Albert Hall, for the 17th inst., in aid of the Cheesemongers' Benevolent Society, he himself undertaking to pay all the expenses. We are glad to hear that the charity will be benefited to the extent of upwards of £1000 by the tickets already sold.

—— The recent spring-like weather has so far advanced the swelling of the flower-buds on hardy fruit trees that it is not difficult to predict the nature of and extent of the Fruit Bloom in the Market Orchards around London. In spite of the enormous crops borne last year there are few trees that have not an average of fruit-buds, but in most cases there is evidence of a most abundant blossom. Even Victoria Plum trees, that were last year almost borne to the ground with the weight of fruit, have promise of a fair crop if the weather fates are but propitious. Bush fruits are literally full of bloom, and a large crop of these may be looked for; indeed, as far as hardy market fruits are concerned, there is all present appearance of crops far in excess of what could reasonably have been expected. One cause of this is without doubt the heavy rainfall of last July, and by which the trees were materially assisted in performing the double work of swelling their last year's crops, and maturing the buds necessary for the production of that of this year. Another cause may be found in the fact that a large crop of fruit on young, healthy and robust trees acts as an absorbent of much of the superabundant sap that otherwise would have gone to the formation of rank and useless wood; and the check thus given to luxuriance is as equally calculated as root-pruning to promote fruitfulness. In any case the look-out for the present year, so far, is hopeful.

—— Mr. B. S. Williams' nursery, at Holloway, is well worth a visit just now. The show-house is very attractive, and though the Camellias are past their best, there is still a good show of blooms on some of the plants. In the Orchid-houses many good

plants are in bloom, and the Vandas will shortly be very fine. Many New Holland plants are also coming into flower, and promise well for a fine display. The curious and beautiful Echmea Mariæ Reginæ is now opening its flowers—a very interesting plant. Another good plant sent out by Mr. Williams—Toxicophlæa spectabilis—is also flowering very freely. It is a plant which deserves to be largely grown for cutting, its large bunches of small white flowers coming in most useful for filling vases and such-like ornaments.

—— Director Stole of the Pomological Institute of Proskau, writing in the *Monatsschrift* for March of this year strongly recommends the practice of Grafting Pears on Apple Stocks. Such trees are short-lived, but they come into bearing very early, usually producing some good fruit the second year. He says that he saw quite an orchard of these miniature trees in a garden near Posen, and the trees were all well furnished with handsome fruit. The principal condition leading to success is a healthy, vigorous stock.

—— Not long since a query appeared in our correspondence columns as to the plant yielding the "Pelotas Berry," used for mixing with coffee. The following extract from the last number of *Land and Water* will throw some light on this question :—

"From the report of the laboratory attached to the Inland Revenue Department, we learn that roasted acorns have been largely used for adulterating the chicory employed to adulterate coffee. A great seizure of these roasted acorns was made in the East-end of London about twelve months ago; and samples of coffee were then taken which contained about 10 per cent. of coffee, the remainder being roasted acorns. Originally these roasted acorns were placed before the public as 'Pelotas coffee,' but the manufacture being illegal was forbidden. They were next introduced to consumers under the name of 'Coffee Surrogate.' This practice was also stopped, and perhaps, since a severe Adulteration Act has come into force, we may now hope to hear the last of roasted acorns under any style or title. It is often said that Cocculus indicus is generally used as a beer adulterant, and therefore a close inquiry was made into this question by the Government officials, yet not one of the latter ever succeeded in detecting Cocculus indicus on a brewer's premises; nor has it been discovered for many years past in any of the samples of beer submitted to public analysis. But if the drug were not used in the way suggested, what becomes of the large quantity of it which is annually imported? Careful investigation discloses that nearly all the Cocculus indicus brought into England is sent abroad again to Germany, that retained for home consumption by wholesale chemists and drug grinders being sold by them to be used either for poisoning fish, or for mixing with fat into an ointment for killing lice on cattle."

—— So far as we know Mr. B. S. Williams will be the only English exhibitor of exotic plants at the forthcoming Centennial Exhibition at Philadelphia. He will send over about eight large boxes of valuable plants in charge of his son, Mr. Henry Williams, who starts next Tuesday, and we heartily wish him success, for the journey is a long one for such perishable subjects as plants, and the risk proportionately great. Messrs. Veitch & Sons will, we believe, exhibit some hardy ornamental plants.

—— From Mr. Albert Müller, the author, we have received a reprint of his paper on the appearance of the true locust (Pachytylus migratorius) on the shore of Lake Bienne in 1875. He was induced to go thither and investigate the matter from accounts which appeared in the newspapers, to the effect that large areas of Oats, Vines, and other crops had been completely devoured by swarms of this insect. He found that these reports were by no means exaggerated, as he had imagined, but rather inadequately described the real extent of the damage done by them. In about five days 15 jucharts of fine standing Oats were totally eaten up. The whole population, including school children, turned out to drive away or annihilate the enemy, working towards the lake. Of course large numbers were caught and killed, but the main body took to flight when driven to the water's edge, and disappeared from sight. Individuals were found in every stage of development, and it is, therefore, assumed that the bulk of the swarm were bred on the spot. The writer is of opinion that the primary cause of the extraordinary multiplication of this scourge in the district in question was the lowering of the level of the lake, thereby exposing a large extent of sandy uncultivated soil, affording the most favourable conditions for a breeding ground. Subsequently this reclaimed land has been brought under cultivation in detached spots, thus affording food for the growing colony of insects. Burning or scalding is regarded as the only effectual means of extirpating the locusts. Not only such cultivated plants as Oats, Barley, Peas, Beans, Potato-haulm, Hemp, Maize, and Vines suffered from their ravages, but also the wild vegetation, giving the district a most desolate appearance.

—— The stately growth and broad massive leaves of some of the fine varieties of Canna indica mark them out as peculiarly adapted for outdoor culture during the summer in favourable positions, yet they are only unfrequently met with. Their tall growth, perhaps, unfits them for small gardens, and in the ordinary flower garden they are apt to be thought out of place because not associated with other plants of a like character. A group of Cannas on a sloping bank by a piece of ornamental water forms a striking feature, especially when associated with similar clumps of Castor-oil plants, the large leaved Solanums, Wigandia, Aralia, Caladium, &c. Such gardens need to be within the line of friendly shelter from rude winds, or the beds suffer in consequence. At Heckfield Place Mr. Wildsmith works out surprising effects in this way, and annually increases the space so planted. Among the newer Cannas suitable for garden decoration the following possess a fine character of leaf foliage :—Chatei grandis, the narrow oval green leaves being margined with red; discolor; Bihorelli, a variety that produces numerous flowers of a dark red colour; erecta, Jean Sisley, large green leaves; Maréchal Vaillant, dark bronzy purple leaves broadly banded with violet-purple; nigricans, Oriflamme, Rendatleri, rubra superbissima, violet stems, purple leaves, and orange-red flowers of a showy character; and Warscewiczii major. It is generally considered that Cannas do best when left in the ground all the winter, but the roots require to be thoroughly protected from frost.

—— We venture to call attention to the extremely curious observations of Mr. W. G. Smith relating to the Potato Fungus before the Scientific Committee of the Royal Horticultural Society at its last meeting (see p. 474). Mr. Smith's remarks were based on the examination of over 300 preparations, made by Mr. Alfred Smee in 1845; and not only are they curious, but they are very suggestive, and suffice to show that the mystery of the Potato fungus is by no means fully traced out yet.

—— We understand that the second part of the second volume of Bentham and Hooker's *Genera Plantarum* is on the eve of publication. It will form a large instalment of this the most important modern publication on systematic botany, founded entirely as it is on the personal observations of the authors. The work in question has now advanced to the end of the Gamopetaleæ.

—— The *Florist* for the month opens with a coloured plate of the glorious Tropæolum polyphyllum, a hardy trailing plant bearing a profusion of bright canary-yellow flowers. It is of the easiest cultivation, but in our experience is difficult to propagate. Florists' flowers are reviving in public interest, if we may judge from the articles on the subject in this periodical. We trust that with the advance in knowledge of plant form, and the adaptations of that form to special ends, modern florists may expand their notions of what constitutes beauty in a florists' flower.

—— When we figured the new Poinsettia pulcherrima plenissima in our issue for January 1 we knew comparatively little about the character of the plant, beyond the fact that it produced very large heads of rich scarlet bracts, grew vigorously, and had good bold foliage. It now appears, however, as if the plant was going to be an all-the-year-round sort of subject, for several of the strongest plants in Messrs. Veitch & Sons' possession, the fine heads of which were cut off when fresh some time ago for exhibition, have thrown up short, thick shoots which are developing another series of bracts, though the plants have not a leaf upon them. Even small store plants, from 3 to 6 inches high, are developing their bracts in the same way. We shall be anxious to see how much longer this will go on; and in the meantime may state that Messrs. Veitch & Sons are preparing to send it out in May.

—— We saw at Messrs. Rollisson & Son's Nursery, at Tooting, lately, a perfectly Weeping Form of the showy Australian Acacia armata. It resembles A. armata in every particular except its graceful weeping habit, and should become a popular greenhouse plant in the form of standards.

—— The Chayotte, or fruit of Sechium edule, figured in our columns, 1865, p. 51, is highly esteemed as a vegetable in Algeria, and the supply is unequal to the demand. The fruit is cut in slices and cooked in the same manner as Cardoons. Prepared in this way and served with sauce it forms a very palatable dish, possessing a flavour similar to that of the Cauliflower. This Cucurbitaceous plant is a perennial with a large tuberous rootstock, and the fruit is remarkable in containing only one large seed. It is the Chocho of the West Indies, where it is extensively cultivated. The fruit is occasionally offered for sale in Covent Garden Market.

—— According to the reports in French horticultural journals, the fruit of the different varieties of Diospyros cultivated in the south of France and in Algeria is not held in very high estimation. It is stated that it is not good to eat until it is quite shrivelled, when it has something of the flavour of the Apricot, without being so good. Still it appears there is a marked improvement in the quality of the fruit since the cultivation of different varieties of Diospyros was first begun. A variety called D. Mazelii is even more fleshy than D. costata, and contains no stone at all.

—— Messrs. Veitch & Sons' Orchid-houses now present a fine display, so many good plants being in full bloom. Those to whom rare Orchids are of interest, may care to know that a plant of Cypripedium Druryii is coming into flower. This has flowered we believe on the Continent, but not before in this country.

—— The beautiful little white Dendrobium barbatulum is in flower just now with Mr. Bull. This is a little gem for cutting, it flowers so freely, and the blossoms are so chaste for bouquets. Growers would do well to look after this.

—— M. Buchetet has been very successful in Modelling Fruits, as we learn from *La Science pour Tous*. The fruits are modelled in some plastic material of the size and average weight of Nature, and are coloured in imitation of the natural tints. They are not injured by ordinary heat or damp, and may be cleaned readily. Altogether 1674 varieties of fruits have been modelled, including fifteen Apricots, fifty Cherries, thirty-eight Figs, fifty-five Strawberries, sixty-five Gooseberries, fifty-six Peaches, 668 Pears, eighteen cider Pears, 243 Apples, 362 cider Apples, sixty Plums, and eighty miscellaneous fruits, such as Filberts, Chestnuts, Quinces, Oranges, &c. In addition, numerous models of vegetables have been constructed, including seventy varieties of Potatos, fifteen Beetroots, fifteen Carrots, twenty-five Marrows, twenty-two Turnips, sixteen Radishes. One of these collections may be seen at the Conservatoire des Arts et Métiers, Paris. A similar set should be at the Royal Horticultural Society, but we shall have to wait a long while for it, we fear.

—— Mr. Bull had a splendid new Hibiscus, from the South Sea Islands, in flower in the early part of the week. The flower is quite double, from 2½ to 3 inches deep, and about the same measurement through, of a soft primrose-yellow colour, with a light shade of orange, the base of the petaloid bodies being of the rich crimson colour so frequently met with in the genus.

Home Correspondence.

Phylloxera at Elvaston.—Mr. Goodacre says there is no doubt whatever of this pest having been at Elvaston, and his information, no doubt, comes from the same source whence I got mine. You will have observed that I never took credit for getting it stamped-out there, when I was in doubt till I began this correspondence whether it ever had been at Elvaston. Mr. Brown, my predecessor, knew more about it than

I did as a matter of course, and, if he had stated his experience of it, it might have been of public service. I certainly don't wish to teach Mr. Goodacre, but one thing I may now state which may interest others. Since this correspondence began I have learned from different sources that the Phylloxera was where the young Vines (which were destroyed at Elvaston) were bought. This is the secret that satisfies me, and which I believe is as true as that the insect was at Elvaston. This accounts for it not being in the other houses. I was led to believe it was there too, but, as I wrote before, I never could see it. If the Vines did not improve as I stated in a former letter, the crop of Grapes in each permanent house was better, which is about the same thing. The pot Vines mentioned by Mr. Goodacre were not so good as those which were fruited the previous year, neither as a lot nor as individual Vines, just about twelve months before Mr. Goodacre went to Elvaston. I may here just mention that the Phylloxera being bought with the Vines is not the only instance of which I am cognisant. Mr. David Thomson wrote me when at Elvaston that he got it with a Vine from London. *R. Mackellar.*

Earth-Closet Manure.—Your correspondent Mr. Bernard Dyer, in his frank admission "that of the sanitary value of the earth-closet system there can be no shadow of doubt," plainly proves that of the history of the progress of that system he can know but little. Science has stood opposed to it not only as an economical but as a sanitary system. Witness as to the latter the attacks of Professor Pettenkoffer in Germany, and of Professor Rolleston in England: the latter may be found in the *Lancet*. I should not, however, have cared to notice Mr. Bernard Dyer's remarks, but that while it matters little to myself in any way, it is of importance to your readers and to the public that in the present advanced state of the dry-earth system they should be better informed than this gentleman appears to be of the nature of the manure which may be produced from house refuse. My pamphlet entitled "Town Refuse the Remedy for Local Taxation," is out of print, and I doubt whether I shall ever be able to reprint it. It is in substance a reply to Professor Voelcker's paper on earth-closet manure in the *Journal of the Royal Agricultural Society* for 1872. I enclose a copy, of which you may make whatever use you please. *Henry Moule.*

Lime or Chalk as Fuel.—I am sorry to put myself forward again in this matter of chalk-burning or limestone burning, especially after Mr. Kinnear's candid admission of his belief that "by mixing my coal with chalk I get the required heat with less fuel." But with reference to the remarks which follow this admission, it will be well for him and for your readers to know that in each of the three furnaces mentioned in my last letter the form is the same for two-thirds chalk and one-third coal as for coal alone; the stoking is the same, and the chimneys (first a horizontal flue) one 80 feet, two 54 feet, then a perpendicular flue (from 20 feet to 30 feet) are all unchanged. Then the fire in their furnaces is not constructed in the manner of a limekiln, but the chalk is laid at the bottom of the furnace, and the coal is laid upon it. In the mode of heating my church and schoolroom, to which these furnaces belong, I take advantage of the four-fifths of heat which ordinarily passes up the chimney. The larger the escape into the horizontal flue the better. And of this I assert again that I get as large an amount from two-thirds chalk beneath and one-third coal above as from all coal. I must add a remark on your correspondent Mr. C. W. Strickland's reply to the enquiry of a lady about the use of limestone in smelting iron. I should like to know if he and Mr. Kinnear are quite agreed as to the chemical theory of a flux in the smelting of iron. Whether that given by the former gentleman be correct or not, there is a large amount of carbonic oxide generated in the process of smelting; and I have been informed by one of the principals in some of the largest smelting works in England, that so much of this oxide thus generated is in those works saved, and conveyed in pipes to their several engines as is sufficient to work most of them, if not all. The name of these works and of the gentleman who gave me this information I cannot give you, but I recollect his stating that they had in these works the loftiest chimney in England. The object of this gentleman's visit to me was to see the result of a process by which (as I had asserted in a letter to the Editor of the *Times*) from chalk external to the fire of a furnace carbonic oxide can be generated, and with vast increase of heat thrown into that fire. *Henry Moule, Fordington Vicarage, April* 1.

Artotrogus and Peronospora.—Professor Dyer, in referring in your last number (p. 438) to my diagram of Artotrogus and Peronospora, repeats what he unfortunately said at the last meeting of the Linnean Society, viz., that an oogonium inserted in a thread of mycelium "cannot have anything to do with the oospore of Peronospora infestans, because that is produced by a rounded cell or oogonium, which always terminates the mycelial filament which bears it." This statement is incorrect; and as the true habit of the resting-spore of the fungus which causes the Potato disease is one of the points on which I base my opinion that Artotrogus and Peronospora are the same, perhaps you will allow me to say in your columns that the oogonium in Peronospora is not always terminal. It frequently occurs as a sessile body in different parts of the thread, and it is sometimes within the middle of the thread. This fact is perfectly well known, and has always been acknowledged by De Bary. In Cystopus the intercalation of the oogonium is much more frequent, and the habit of the oogonium is identical in Cystopus, Peronospora, and Artotrogus. It is true Sachs' *Text Book* (p. 245) says under Peronospora that "spherically dilated ends of branches of mycelium shape themselves into oogonia," but this statement is incomplete. Sachs also terms the mycelium of Peronospora unicellular," which it is not. *W. G. Smith.*

Hardy Primroses and Polyanthus.—With this I send you a box of Primrose flowers gathered from my garden this morning, which I thought might interest you, and the following notes some of your readers. There are few plants more sportive than Primroses, and when out of their normal condition display more novelty and beauty, even the grotesque forms locally called "Jack in the Green" are interesting, and many of them beautiful. It has recently been said in a contemporary that coloured Primroses are escapes from gardens. I think had the intelligent writer of that article the experience of but one season, in this land of Primroses, he would alter his opinion on this matter. I have no doubt had the coloured and white varieties been allowed to remain and seed, that coloured ones would be as common as the typical Primrose, but many people, myself along with others, make it a practice to collect all abnormal colours and forms, and transfer them to the garden, when, strange to say, they almost invariably reproduce the same or similar colours from seed. From several dozen seedlings from the white varieties I have examined every plant came true to colour, or if varying at all, it is in the extent or form of the yellow eye. There is one other feature that has greatly added to their interest and which would, I think, puzzle a scientific botanist to say what is a Primrose, or what a Polyanthus, as a very large proportion of the Primula type of flowers, when strongly grown, produce many flowered stems, and the Polyanthus of what I call the intermediate forms to distinguish them from the gold-edged varieties, as frequently produce single or Primrose-like flowers. The gold-edged kinds are an exception, so far as my observation goes, neither have I seen one of the double varieties of Primrose produce more than one flower on a single stem, yet I think it quite as possible as the double Polyanthus which is in cultivation, because those varieties (as you will see by enclosed flowers) in their single and normal state produce many flowered stems, and I hope ere long we shall have the pleasure of this additional beauty to this already charming tribe of plants. The royal and imperial of the Primulas are undoubtedly Golden Prince and the old Blue Polyanthus (so-called), which I am pleased to say still exists in this county and should be in every garden. It is a free grower and abundant bloomer, but I have never seen it produce seeds. This, and its novel and unique colour, would indicate its being a hybrid between two distinct types, but I cannot think this is the case. Golden Prince was raised by Mr. Nelson, of Aldborough Rectory. It is a golden beauty, producing large well-formed and prettily fringed flowers of a rich golden-yellow or orange; sometimes the flowers are on single stems, very large, at other times in noble trusses. I do not know which to admire most. A bed containing a few dozens (which I hope to see some day) would be very beautiful. I understand from Mr. Nelson that seedlings raised from this produce much inferior varieties, and the only way to increase those varieties is from division of the roots—rather a slow process in the hands of an amateur. *J. Tyerman.*

Two Thousand Pounds of American Potatos from One Pound of Seed.—A great many of our exchanges consider the yield of 1666 lb. of Potatos from 1 lb. of seed a marvellous production, but such a yield is nothing wonderful. One pound of seed may be so managed as to yield 2000 lb. of tubers, simply by the expenditure of a little patient care and prudent management. If one can have access to some place where he can avail himself of the advantage of bottom-heat, he can take a pound of seed Potatos, cut them economically, deposit them about 3 inches deep in rich leaf-mould, sand and ashes, and then keep the seed-bed warm day and night so long as the seed Potatos will send up any sprouts, and thus produce plants sufficient to yield 2000 lb. from a single 1 lb. of tubers. As soon as the little sprouts have small roots, let them be removed from the seed-tubers, and transplant each one in a flower-pot. The soil in the flower-pots should consist of fine leaf-mould and sand, with a liberal addition of sifted ashes. Coal-ashes are better than nothing, but wood-ashes are preferable. Such flower-pots should be kept in a warm apartment, like a green-house. If the pots can have the benefit of bottom-heat, all the better. After the first crop of sprouts or plants have been removed from the seed-tubers, another crop will shortly appear, which should be removed and transplanted in pots. As often as plants appear, let them be removed to flower-pots until the seed-tubers are so completely exhausted that there is not sufficient plant-food left to produce another sprout. The last sprouts need not be broken from the seed-tubers. As soon as the plants in the flower-pots are thoroughly rooted, let the contents of each pot be turned into a recess in the open ground where the Potatos are to be cultivated. By managing the seed-tubers with care and patience, plants sufficient for a long row may be produced. Then, if the soil is right—if it has been rendered fertile by generous applications of manure in which there was an abundance of inorganic elements; and if the cultivation is thorough, and the season at all favourable, a skilful gardener will be able to produce a much larger yield than any hitherto reported. The soil must be rich and mellow; and the hills or plants must not be placed so near each other that their full development will be hindered. *Philadelphia Practical Farmer.*

Limestone as Fuel.—In last week's issue, p. 441, the symbols of carbonic acid should have been H_2CO_3, not HO_2CO_3, as rendered. *W. D. Cochrane, Bingley.*

Otiorhynchus sulcatus.—Having observed that milk of sulphur was often applied to the foliage of plants, it occurred to me that possibly it might be useful for the extermination of the larva of the above-named beetle. Two plants of Primula japonica were selected, in the root of each five large grubs were found; without disturbing them the soil was carefully removed, when the roots were well dusted with sulphur and fresh soil supplied. The larvæ have disappeared from one of the pots, and as delicate fibres were uninjured, though in close contact with the sulphur, and the plant that has not been examined appears to be in perfect health, it is to be hoped that a remedy has been found to check the ravages of this tiresome pest, at all events further experiments may lead to certain results. *A. Clapham, Ramsdale Bank, Scarborough.*

Marechal Niel Rose.—There still appears some doubt respecting the growth of Maréchal Niel Rose. I am not in the least surprised at the account given by Mr. Harrison. I have three plants in a span-roofed house; they are now three years old, and have not been planted two years. They now thickly cover a trellis of 370 square feet, and are growing very rapidly, and showing many hundreds of flower-buds. Should you wish to lay it before your readers, I will give you an account of the treatment the plants have received. Had they more room, I think they would have filled double the space. *Robert Debron, West End, Ely.* [We should be much obliged for further details. EDS.]

Peaches, Nectarines, and Gooseberries.—I have eighteen Peach and Nectarine trees under glass, and 124 of them on walls—on S.E.W. aspect, out-of-doors. They are all in most beautiful condition. I am, both under glass (I can heat, but I usually trust to solar influence) and outside, a short pruner, as ably stated in Mr. Bréhaut's most able work—the best guide for long or short pruners and the best guide for England. I am in no position to dispute with two of our best gardeners in respect of setting Peach or Nectarine blossoms under glass with a syringe where artificial heat is used. I hope they will both forgive me if I err—I think that they are both mistaken as to the setting of such fruits by the syringe. I believe the fruits were set before the application of the water, and that water cherished the set fruit, and stopped destructive evaporation. I neither shake my trees out-of-doors nor indoors; neither do I syringe them till a sufficient number of blooms show a green centre. Previously, as my friend and correspondent, Mr. Bréhaut, advises, instead of syringing the blossoms, I apply copious potations of water to the roots, to supply exhaustion by evaporation. I also do the same out-of-doors, when frosty nights are followed by hot sun and cutting easterly winds. Hence I have very little blister, which is chiefly the effect of frost and desiccating winds, at a time when the sap from the roots does not keep up with the evaporation. Mr. Bréhaut is right in advising copious root-waterings, especially for trees "fried and steamed under glass." Mr. Simpson and Mr. Miller suppose that syringing caused the trees to set: in my judgment they make a mistake. The pollen in the anthers cannot be too dry; if it is pasty, it cannot reach the pistil. In their cases the syringing aided the fruit

already set, and saved it from being killed by exceeding evaporation. As regards Gooseberries, mine and my neighbours' look

"Naked as lances;"

but the buds were killed, not by sparrows or bullfinches, but by the severe winter frost before Christmas. I have only three sorts of Gooseberries here, Mr. Rivers' election, namely, Walnut Green, the finest-flavoured of all; Whitesmith, admirable; and Red Warrington, the best finisher. Now, I want to know, if "confounded sparrers" did all this mischief, how it came to pass that they did not hurt Red Warrington and skinned the twigs of the other two. The fact is, the severe pre-Christmas weather did the mischief. Cut back hard, and hope for a better time. *W. F. Raddyffe, Okeford Fitzpaine, April* 1.

Young Growth of Cupressus funebris, &c.—You had occasion lately to say something about the various arrangements of leaves, and in the *Gardeners' Chronicle* for April 1 is a brief notice of a paper by the Rev. George Henslow "on the origin of the prevailing system of Phyllotaxis, in which he endeavours to show that the spiral arrangement of leaves is deduced from the opposite and decussate arrangement by the lengthening of the internodes." Enclosed is a branch of Cupressus funebris, the arrangement of the leaves of which seems to speak to the truth of the reverend gentleman's position. I consider it the best instance I have ever seen of the conversion of leaves in whorls of four into an almost continuous spiral. How slight and easily broken are the natural barriers between one arrangement of leaves and another; it is a mere matter of suppressed or accelerated vigour. The inherent plasticity of the vegetable kingdom is evidently commensurate with at least its existing and varied forms. According to the principles on which the sectional or generic characters of Conifers are based there seems to be slight evidence, that, at least, some of the species present in their individual constitution the essential characters of distinct genera. This impression was forced on me a day or two ago on examining the male catkins of certain species of Retinospora. On a large plant of R. ericoides now in bloom—the first I ever saw in bloom—I found the majority of the catkins to be composed of from twelve to sixteen scales in opposite cross pairs, while at least one-fourth of the whole were of a very different construction, the scales being in whorls of three alternately arranged, forming six vertical rows on the axis. These invariably terminated branchlets clothed with leaves in whorls of three, while the others terminated branchlets on which the leaves were in opposite pairs. I have found the same ternate-scaled catkins on R. leptoclada and R. tetragona of Barron, but not many; indeed I have only seen two catkins on the latter species, and, strange to say, they were both of the exceptional character. Ternate scaled flowers, both male and female, are not infrequent in the species composing the Cupressineous section of Junipers; but as yet I have only found one six-rowed scaled female flower on R. leptoclada. However, as four-rowed scaled cones and male catkins are the rule, and six-rowed scaled male catkins the exception, it is not improbable that the plant may occasionally bear cones of the same construction; and if so, and were they to take the place of the four-rowed cones in point of number, then surely no one would doubt its claims to be elected into a very distinct genus from that of which it is at present a member. I am not certain, but it seems to me that they speak to a constitutional plasticity equal to the formation, under favourable conditions, of very distinct genera; and it would appear to be merely a matter of suppressed or accelerated vigour as to which of the two kinds of catkins will be the normal or dominant one. The ternate-scaled catkins are invariably on the strong branches and branchlets. *G. S.*

Signs of Spring.—How early some of the insect and reptile heralds of spring-tide made their appearance this year. I saw butterflies—the large white, the brimstone, the peacock, the tortoiseshell—out early in March. A wasp came to the window on March 27, and bees were very busy amongst the Crocus beds at the end of the first week in that month. A pretty slow-worm, too, came out to show itself near some Primrose bloom on the 27th. I nearly put my hand on it when picking some, but finding that it was noticed, it quickly glided away. *Helen E. Watney.*

Lilies of the Valley.—That there are two varieties of Lily of the Valley imported from the Continent I have had ocular demonstration, and their distinctive characters are pretty well portrayed in the *Gardeners' Chronicle*, March 25, but I find the difference in size and general appearance much more marked than shown in the engraving. "Lamorran" (p. 430), in last week's issue, is evidently in possession of a wrinkle worth knowing to those who like myself have plenty of glass room: how does he manage his Lily of the Valley in pots for ten or twelve years, so that they shall flower better than imported roots? If he does not wish to hide his light under a bushel, I would like to avail myself of his experience in the matter. *Old Subscriber.*

Nurseryman's English.—The following extract from a circular largely distributed in a London suburb may afford some amusement to your readers, as a curious evidence that while so much learning has been lately bestowed on the niceties of Latin pronunciation, it is possible for ignorance to exist as to the meanings of common English words. The proprietor and "contractor" has evidently grafted his own circular on that of some local tailor, and probably is proud of the hybrid produced:—

"——, nurseryman, seedsman, florist, and contractor, landscape gardener and horticultural builder, &c., having taken the above premises, where he purposes to carry on the business of a first-class nursery and florist, whereas he feels assured that families entrusting him with orders may depend upon having first-class articles at moderate prices, and being a man of experience in every branch of his business, enables him to compete with any house in the United Kingdom. The bespoke establishment is superintended by the proprietor, and any gentleman favouring him with an inspection will find all the most fashionable and newest materials for every season in the year, and may fully depend upon having their garden well fitted with suitable shrubs and graceful elegance, at prices that will ensure their future orders."

M. et C.

Pot Vines at Elvaston.—Permit me to ask Mr. Goodacre to give your readers the name of the variety of Grape, age of the Vine, and if more than one rod to a Vine, that produced him 37 lb. of Grapes. I do not ask this from any idle curiosity, but having grown a quantity of pot-Vines in my time, and thinking from 10 lb. to 12 lb. to a rod a good crop, I shall be glad of any information that will assist me in increasing the results beyond this point. *H. J. C., Grimston, Tadcaster.*

Natural History.

Squirrels.—The squirrel must always be a favourite where it can be admitted without danger to neighbouring woods, and in autumn and winter where evergreen Oaks are plentiful, it is often attracted by the fallen Acorns in such numbers as to afford a great deal of amusement, and a good opportunity also of in some degree observing its habits.

The nest for the accommodation of the young family (usually three or four in number) is to be found in June, commonly placed in the forked stem of a tree or in the tree itself, and from its resemblance to a mere mass of leafy rubbish, it does not at once catch the eye. On closer inspection it shows us a large ball formed of leaves, moss, and fibres, and in the only specimen I have seen near enough for minute examination the Birch leaves and moss were so tied together by the fibres (apparently of root or tough bark drawn into shreds) as to make it almost impossible to tear the nest to pieces.

The entrance is on one side, and how far the idea is correct that the squirrel shifts the position of the opening according to the direction of the wind may be uncertain, but the cleverness of the animal in adapting all matters round to its own convenience, and especially in guarding against uncomfortable chills, make it not improbable. In the wild state the squirrel's food is of vegetable matter, such as shoots and tender bark, nuts, acorns, or Beech-mast, and the winter stores of the more durable portions of its fare are very commonly to be met with in holes in trees and similar convenient hiding-places.

Where circumstances permit, a ripe Plum or a Peach, so large that the little creature can scarcely grasp it with both arms, are perfectly irresistible, and a prettier sight can hardly be imagined than the depredator sitting upright, tail recurved in proper squirrel fashion, rocking to and fro on some perch from the weight of the dainty he can hardly hold up, and enjoying it with his whole heart.

Though far from being entirely arboreal, the length of the hind legs adapted to the power requisite in its leaps, gives the squirrel a peculiar springing gait when on the ground, and each step (or rather movement in advance) is accompanied, when on a hard surface, by a noise (a beat or thump, so to say) clearly audible at a few yards' distance.

Where not molested the squirrel will play fearlessly on the lawn close to the windows, usually passing to and fro with the tail floating behind (well arched if the grass is wet, to preserve it from injury), but sometimes pausing for a minute's rapid burrowing with both paws, like a rabbit. The prize held up in both hands to the mouth is as quickly gone, but though it appeared to be some kind of root, I could never make out what it was with certainty.

When alarmed on the ground the squirrel appears to have an instinctive knowledge which tree should be chosen as the way to safety, and will turn back at times (apparently for no other reason) from one too much isolated to be in leaping reach of its neighbours; but if threatened with any very sudden danger the excitability of its constitution will completely paralyse it.

In some cases the complete absence of movement, uniting the animal seemingly with whatever it may be on, acts as a protection, but often very much the reverse. Whether from fascination, or a feeling it is most concealed whilst motionless, it will remain if surprised in some exposed position (on a long bare Larch bough in winter, for example) perfectly still as long as the eye is on it. One may walk too and fro beneath, but the shapeless dark mass seen against the sky will remain so immovable that it is only when, on withdrawal of observation, it is found in that minute to have vanished, that one can be sure it is a living animal.

The sudden appearance of a cat will similarly remove all power of flight, and unless some passing circumstance breaks the spell of terror the squirrel's next appearance will probably be as a trophy, dragged in triumphantly by the throat, but apparently killed almost entirely by terror, as in those I have seen neither party in the matter showed a wound of any consequence.

Even in the wild state the squirrel seems to have a kind of feeling when it is a friend that is near, and will hide over-head and send little bits of stick on a harmless intruder below, as if enjoying the fun till a sudden glance upwards sends Scug in the most rapid retreat through the branches, but an imitation of its cry will put it at times into an ungovernable fury. The sharp note when excited is easily counterfeited, and in this way I have drawn a squirrel down the stem of a tree to look for the enemy, and kept it screaming in answer to each call, and stamping with passion on a bough overhead, as long as the cry was continued. When unprovoked the squirrel is the gentlest of animals, but the ease with which its temper is ruffled makes its long incisors very unpleasant weapons, and when driven to defend itself it will hold on till, as far as my own experience goes, I believe nothing but fairly throttling will induce it to let go, and the drag meanwhile of the teeth as if endeavouring to remove the piece, makes the bite both painful at the time and lasting in its consequences.

With regard to the squirrel as an article of food there is no doubt it is edible, and from the delicacy of its own diet it might be supposed palatable. Olaus Magnus (in his *Hist. de Gentibus Septentrionalibus*, p. 691) writing about 1550, mentions roast squirrel as being found "delightful food by the hunters," but in the present day, whatever it may be in out-of-door life, the attractiveness of it as a dish at table must be doubtful, especially if "served up" *au naturel* with heads and tails; and (from residence in the neighbourbourhood) I can say with certainty it is not, as sometimes supposed, the custom in the Forest of Dean to present it to guests as a second-course dish, when game is scarce.

Indoors the squirrel is a safe and amusing pet, unless irritated or handled beyond what it thinks fit to bear; and its perfect tameness gives an opportunity of studying many minutiæ of its habits, especially its methods of feeding and carrying its food. When a nut was to be opened the specimen chiefly observed invariably held it in both paws and rapidly made a little furrow about a third of its length towards the extremity with his incisors, then turning the nut with the opposite side towards him a corresponding furrow was almost in an instant made to meet the first; the shell of the nut thus weakened was cracked off with the utmost ease as far as the furrows went, and the contents readily extracted.

If several nuts were offered at once the animal was delighted, and would store as many as possible in his mouth, four I think being about the extent of his capabilities in this respect, I presume (though without the special conveniences of the squirrels with cheek-pouches for carrying stores to their hiding place), yet following the same method of proceedure.

In drinking the squirrel thrust its mouth into the fluid, and position seemed perfect matter of indifference during the operation, as it would vanish down

a water jug, and if looked after would be found wrong way up, holding on by its heels to the edge of the jug, evidently completely at its ease, unembarrassed either by its long tail or by the inversion of its general arrangement.

As pets, these animals need little care beyond attention to their having enough to drink, and not too much to eat, for they should have access to water, and are apt, unless limited in matters of diet, to eat enormously; also some exercise beyond the turning-box the poor creatures are frequently confined in (till the tips of their noses are rubbed sore by the friction) is desirable, and the other chief matter to be attended to is warmth.

The squirrel is a chilly creature, and will curl itself up for hours in a fold of the dress, or the pocket of a known friend, or if shut out from its own sleeping-box at night, will think nothing of gnawing a road through the side, and dragging a handkerchief or anything it may like to appropriate in as a bed, which, after being well bitten, is doubtless extremely comfortable for its new uses, but in a less satisfactory state to the owner. The acuteness of sight needed for estimating the position and distance of the objects to be reached in the flying leaps, seems to remain uninjured in captivity, it will come down from any perch it has chosen on its owner's head with an aim far more correct than agreeable, and so far appreciate even an indifferent fruit drawing as to stop in running over it, and endeavour to burrow the counterfeit Peaches from the uncoloured paper round.

The squirrel is a truly amusing pet, and with some liberty beyond its box, which may easily be allowed in a room with closed doors and windows, will thrive and enjoy its life; but if by any chance left at night where it has access to a store of fruit, it may probably be found (like the specimen from which many of these observations were taken) dead by the side of the too well-loved dainties. *O.*

Reports of Societies.

Royal Horticultural: *April* 5.—G. F. Wilson, Esq., F.R.S., in the chair. The Rev. M. J. Berkeley announced the few awards made by the committees to-day, and called the attention of those present to several interesting subjects exhibited, and which are more fully alluded to below.

Scientific Committee.—Maxwell T. Masters, M.D., F.R.S., in the chair.

Fasciated Jasminum revolutum, &c.—Rev. M. J. Berkeley showed on behalf of Mr. Kinghorn a very singular instance of fasciation taken from the "collar" of Jasminum revolutum, and partially blanched. The same gentleman showed specimens of diseased Vine-roots (see *ante*, p. 401); of double Ranunculus Ficaria, in which the central petals were replaced by green leaves; also specimens of galls on Oak from Sowerby's collection, and of a curious Polyp on a Water-Lily leaf, Blepharophora nymphææ. In the absence of any zoological member of the committee, some of these specimens were reserved for future consideration.

Change of Colour in the Purple Birch.—Mr. Berkeley showed on behalf of Mr. George Paul a small plant of a Purple Birch, interesting on the following grounds. A scion of the Purple Birch was winter-grafted on the common Birch stock, and from the scion were produced several buds of the Purple Birch, one of which was allowed to remain, while the others were removed for purposes of propagation. An exposed surface or wound was consequently left by the removal of the buds, and from these wounds new or adventitious buds were produced, with this peculiarity, that their leaves were all green, although produced upon a purple scion. It was an interesting point to ascertain from whence the colour was obtained, and why the green buds were destitute of it, but this could hardly be satisfactorily determined without destroying the specimen, though the inference is that the colour was derived from the bark.

Potato Disease.—This subject was again brought forward by Mr. Berkeley, who said that in justice to Mr. Smith he felt bound to say that he had examined a series of microscopic preparations forwarded to him by that gentleman, and had found the bodies on the slides to perfectly agree with the illustrations as published in the *Gardeners' Chronicle.* Mr. Berkeley also exhibited sketches made by himself from Mr. Smith's materials of the Potato oogonia both intercalated, terminal and free. Also of an oogonium containing within its walls one of the echinulate bodies as originally found and figured by Montagne. The antheridia in Mr. Berkeley's sketches were also shown on threads distinct in size and free from the oogonia threads. In illustration of the same subject Mr. W. G. Smith exhibited a number of new drawings and referred to a recent examination made by him of 360 slides prepared by Mr. Alfred Smee in the first year of the Potato murrain, 1845. These slides included slices of diseased Potato stems, tubers and leaves, and aphides taken from infected plants. In these tubers and stems, and also within and upon the bodies of the aphides, Mr. Smith had found a large number of the bodies recently referred by him to the secondary condition of the Potato fungus.

"During the last fortnight," continued Mr. Smith, "Mr. Alfred Smee has placed in my hands for microscopic examination no fewer than 360 slides having reference to the Potato disease. These slides were all prepared by Mr. Smee in the first year of the great Potato murrain, viz., 1845, and the preparations include Potato leaves, slices of stem and tuber, and aphides taken from diseased Potato plants in that year.

"Out of 104 slides illustrative of the structure of the Potato plant, twenty-seven distinctly show the oogonia and antheridia, as illustrated by me in the *Gardeners' Chronicle*: these bodies mostly occur in the stems and tubers of the 1845 Potatos, just where they principally occurred in the Chiswick Potatos last year.

Fig. 88.—Leg of aphis permeated by spawn-thread of peronospora—Oogonium and antheridium in conjugation external to the leg (mag. 400 diam.).

"Of the remaining slides of insects, principally aphides, about one-half show traces of the same bodies. The threads are growing both inside and outside the aphides; sometimes the oogonia are deeply buried in the body whilst the whole insect is traversed by mycelial threads; many of the oogonia are inside the legs, sometimes inside the feelers. These oogonia and antheridia are presumedly the same with those I found last year upon and within the diseased Chiswick Potatos, and they are exactly the same as the bodies now to be seen in Mr. Smee's 1845 Potato preparations.

"On two special slides of aphides the insects are densely covered externally with a fungus in fruit. So dense is the covering, that very little of the insect's body can be seen. This fruit is almost identical in size and form with the fruit of Peronospora infestans, and, like the latter, it shows a marked differentiation of its contents, and apparently produces zoospores. By careful searching amongst this dense mass of fruit, the oogonia and antheridia above-mentioned can also be detected.

"Without wishing to speculate on the meaning of these new facts, it must be confessed that this new association of these fungoid bodies on diseased Potatos and aphides is new and suggestive. As my last year's Chiswick resting-spores are apparently still alive, though latent, I hope to try some experiments with them as soon as they start into life in the early summer.

"The accompanying figure (fig. 88) represents a leg of one of the aphides here referred to enlarged 400 diameters. Within the leg may be seen the thicker mycelial or spawn-threads which commonly bear the oogonia (at length resting-spores). Just outside the leg at A is an oogonium detached from its thread, B, and the antheridium is seen at C with its beak fixed in the oogonium; through this beak the antheridium discharges its contents into, and so fertilises the oogonium. It will be seen that the mycelial threads are of two thicknesses, and that they are 'anatomically separate,' just as Dr. Sadebeck figures a very similar (if not the same) parasite, *Untersuchungen über Pythium Equiseti*, plate iv., fig 12 and 13."

Mr. Renny considered that the relationship to Pythium was strengthened by Mr. Smee's preparations. In Saprolegnia the antherid was always borne on finer threads than the oogonium.

Taxodium sempervirens.—A gentleman present showed a specimen of the red-wood of California, Taxodium sempervirens, grown near Reading, with a view of illustrating its rapid growth after cutting—a fact which led him to think that the tree would be useful for coppicing, and also that it would be valuable for hop-poles, scaffold-poles, &c.

Carnivorous Hellebores. — Dr. Masters showed flowers of Helleborus orientalis in the nectaries or petals of which he had inserted morsels of chopped meat, which he found, after some days, to be disorganised and reduced to pulp, while meat placed in damp air, side by side, was unchanged. Drawings of the microscopical appearances of the petal before and after feeding, and of the disintegrated muscle, were also shown. (See *ante*, p. 468.)

Grevillea rosmarinifolia.—Dr. Masters commented on a specimen of this which he had received from Mr. W. Thomson, of Tonbridge, and which was found to be quite hardy in that situation. Mr. Thomson had remarked that many of the flowers had two ovaries and styles, of which Dr. Masters showed illustrations, and pointed out that the second carpel was a development of the scale, which is found in so many species of Grevillea at the base of the solitary carpel.

Unusual Arrangement of Buds.—Several illustrations of various unusual dispositions of buds were shown by Dr. Masters, the most singular being one from a Maple, in which, owing to shortening of the intervening internodes, eight buds were brought into close proximity. These buds were axillary to four leaves, arranged in a crossed or decussate manner, each leaf having a pair of buds in its axil. The buds in the case of the lower pair of leaves were arranged one above another, thus :— (o o × o o), the younger bud above—the (representing the leaves, oo the buds, and × the position of the branch on which they were borne. In the upper pair of leaves the buds were placed side by side, thus :— (oo × oo), the two buds in this case being of like age. No arrangement of this kind is mentioned in the papers of MM. Guillard or Damaskinos and Bourgeois on bud arrangement.

Floral Committee.—W. B. Kellock, Esq., in the chair. The most interesting plant shown on this occasion was Odontoglossum cirrhosum, a plant which must, we think, become as popular in its way as O. Alexandræ. It is as free-growing and free-flowering as that species, the plant before the meeting having three spikes, one of which, in full bloom, had twelve flowers on it. The flowers are white, beautifully blotched with dark brown, with the labellum in the form of a fringed crest, striped with brown at the sides, and lemon-yellow in the centre. It was shown by Spencer Brunton, Esq., Beckenham (Mr. Henley, gr.), and was unanimously awarded a First-class Certificate. A large number of plants was imported from Ecuador last year by Mr. Bull, and the one shown, which is perhaps the largest single plant in the country, was purchased at one of Stevens' sales last autumn. First-class Certificates were also awarded to Mr. Charles Noble for Clematis The President, a seedling of the patens type, with large dark bluish plum-coloured flowers, an early-flowering plant that must become useful; to Messrs. Veitch & Sons for Adiantum digitatum, a very handsome deciduous Peruvian species; and for Rhododendron Princess of Wales, a hybrid between R. Princess Royal and R. Lobbii, a fine bright salmon-red white-tubed flower, and very showy. Messrs. Fisher, Holmes & Co., Handsworth Nurseries, Sheffield, showed Rhododendron Fisher Holmes, a very large, pure white flower, sweetly scented. The committee considered it a very good plant, but too much like others in cultivation, and notably R. Sesterianum, to gain a First-class Certificate: consequently it was only Highly Commended. From G. F. Wilson, Esq., came a small group of hardy Primulas, including P. intermedia, bright purple, with a shade of blue; P. ciliata, bright magenta, shaded with crimson; P. purpurea, one of the P. denticulata type, with a fine umbel of mauve

flowers and a powdered flower-stalk; and a large crimson Primrose, with a bold star-shaped yellow eye, a coarse flower remarkable only for its size. From Sir Henry Peek, Wimbledon House (Mr. Ollerhead, gr.), came some well-furnished hanging baskets of Lachenalia luteola; a variety of Anthurium Scherzerianum, with short, very broad spathes; several nice Orchids in flower, and a fruiting plant of the singular and rare Erica-like Lycopodium Phlegmaria. A vote of thanks was accorded. Col. Trevor Clarke also received a vote of thanks for a seedling double pale lavender-coloured Primrose, which he believed was the only umbellate form yet raised with double flowers, but of which some others were referred to by members present. Messrs. Sander & Co., St. Alban's, showed Primula Roezlii, a new introduction from Japan, in the way of P. mollis, with pale green pubescent leaves, and flowers of a bright rosy pink hue, shaded with purple round the eye. Myosotis Weirleigh Surprise, a very pretty hybrid, with small grey-blue flowers bordered with white, came from Harrison Weir, Esq. Votes of thanks were awarded to Mr. B. S. Williams for a choice group of fine-foliaged and flowering plants, and for a small collection of Amaryllis; to Messrs. Paul & Son, Cheshunt, for a fine lot of cut blooms of Roses; and to Messrs. James Veitch & Sons for a plant of Dendrobium Wardianum with three good spikes. Messrs. Paul & Son also received a Cultural Commendation for a box containing two dozen exceedingly fine blooms of the Maréchal Niel Rose. Messrs. Barr & Sugden staged a large and most interesting collection of cut blooms of Narcissus, which included the true Narcissus minor figured by Sweet—a different plant to that now grown as N. minor, which is really N. minimus. Cut blooms of several new Roses came from Mr. Bennett, of Stapleford.

Fruit Committee.—H. Webb, Esq., in the chair. The Hon. and Rev. J. T. Boscawen sent fruits of a white-spined form of the old-fashioned type of Cucumber, which, on account of its excellent flavour, rather than for its appearance, he had propagated from cuttings for the last thirteen years. Messrs. Rivers & Sons, Sawbridgeworth, sent about twenty sorts of late Apples and Pears; and from Mr. Parsons, Danesbury, came examples of a well-selected strain of Brown Globe Onion, under the name of Magnum Bonum.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, For the Week ending Wednesday, April 5, 1876.

Month and Day	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Average of 18 years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition: Dew Point.	Degree of Humidity; Sat. = 100.	Wind: Average Direction.	Rainfall.
Mar. 30	In. 29 43	In. −0.32	° 57.6	° 39.8	° 17.8	° 46.5	+ ° 2.8	° 40.6	81	S.W.: S.S.W.	In. 0.00
31	29 38	−0.37	65.0	43.4	22 5	52 6	+ 8 6	41.0	66	S.	0.00
April 1	29 56	−0.19	53.7	41.2	12.5	46.4	+ 2 2	43.0	89	N.W.: NNW	0.02
2	29 80	+0.06	59.5	35 0	24.5	46.5	+ 2.1	39 0	76	NNW.: N.N.E.	0.00
3	30.08	+0.33	63.3	33 9	29 4	47.2	+ 2.6	41.1	80	E.S.E.: S.E.	0.00
4	30.26	+0.52	68.1	39 4	28.7	52.0	+ 7.2	47.0	83	S.W.	0 00
5	30.28	+0.54	60.1	47 3	12.8	53.2	+ 8.3	48 8	85	S.W.	0.00
Mean	29 83	+0.08	61.2	40 0	21.2	49.2	+ 4 8	42.9	80	variable	sum 0.02

March 30.—A fine day, cloudy and mild. Lightning seen at night.
— 31.—A very fine warm day; light clouds.
April 1.—A dull gloomy day. Slight rain and fog in early morning.
— 2.—A very fine clear day.
— 3.—A fine clear day. Slight fog in early morning.
— 4.—A brilliantly fine warm day.
— 5.—A very dull cloudy day. Warm. Fine and clear in evening.

—— During the week ending Saturday, April 1, in the vicinity of the metropolis, the reading of the barometer at the level of the sea decreased from 29 69 inches at the beginning of the week to 29.21 inches by the afternoon of March 28, increased to 29.65 inches by noon on the 30th, decreased to 29 56 inches by noon on the 31st, and increased to 29.84 inches by the end of the week. The mean reading for the week was 29.50 inches, being 0 36 inch below that of the preceding week, and 0.45 inch below the average.

The highest temperatures of the air observed by day ranged from 66° on March 31 to 39½° on the 26th. The mean for the week was 53½°. The lowest temperatures of the air observed by night ranged from 32½° on the 27th to 43½° on the 31st. The mean value for the week was 39°. The mean daily range of temperature in the week was 14¼°, the greatest range in the day was 22½° on the 31st, and the least 4° on the 26th. The mean daily temperatures of the air and the departures from their respective averages were :—26th, 36°.4, — 6°.1; 27th, 37°.7, — 5°; 28th, 47°.4, + 4°.4; 29th, 47°.2, + 4°; 30th, 46°.5, + 2°.8; 31st, 52°.6, + 8°.6; April 1, 46°.4, + 2°.2. The mean temperature of the air for the week was 44°.9, being 1°.6 above the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo placed in sun's rays, were 117° on the 31st; on the 26th the reading did not rise above 46°. The lowest reading of a thermometer on grass, with its bulb exposed to the sky, was 33° on April 1; the mean for the seven low readings was 36½°. The direction of the wind was variable, and gentle in motion. The weather during the week was tolerably fine, somewhat mild, but the sky was generally cloudy. Lightning was seen during the evening of March 30.

Rain fell on four days; the amount measured was 0 45 inch.

In England the highest temperature of the air observed by day was 66° at about London, at Plymouth and Liverpool 52° was the highest temperature in the week; the mean from all stations was 58°. The lowest temperatures of the air observed by night were 29° at Truro and 29½° at Eccles. At Brighton and Norwich 34½° was the lowest temperature in the week; the mean from all stations was 32½°. The range of temperature in the week was the greatest at about London, 33½°, and the least at Plymouth, 19½°; the mean range from all stations was 25½°. The mean of the seven high day temperatures was the largest at about London, 53½°, and the smallest at Bradford, 46¾°; the general mean from all stations was 50°. The mean of the seven low night temperatures was the smallest at Newcastle-on-Tyne, 35¼°, and the largest at Brighton, 40°; the mean value from all stations was 37½°. The mean daily range of temperature in the week from all stations was 12¾°; the greatest range was 15½° at Truro, and the least 9½° at Bradford.

The mean temperature of the air for the week from all stations was 42½°, being 2½° lower than the value for the corresponding week in 1875. The highest for the week occurred at about London, 45°, and the lowest at Sunderland, 40¼°.

Rain fell on five or six days in the week: the amounts varied from 2¼ inches at Hull to one-tenth of an inch at Liverpool; the general average fall over the country was 1 inch.

The weather during the week was somewhat finer and milder, though the sky was generally cloudy.

A thunderstorm occurred at Sunderland on March 31, and lightning was seen at about London during the evening of March 30.

In Scotland the highest temperatures of the air ranged from 55° at Dundee to 50° at Glasgow and Greenock; the mean value from all stations was 52½°. The lowest temperatures of the air varied from 30½° at Glasgow to 33° at Dundee; the mean value from the several stations was 31¾°. The mean range of temperature in the week was 20¾°. The mean temperature of the air for the week, was 39½°, being 7° lower than the value for the corresponding week in 1875. The highest was 40½°, at Dundee and Aberdeen, and the lowest, 39°, at Paisley.

The fall of rain at Aberdeen was 1¼ inch; at Glasgow, Greenock, and Paisley half an inch fell; the average fall over the country was seven-tenths of an inch.

At Dublin the highest temperature was 57½°, the lowest 27°, the range 30½°, the mean 41½°, and the rainfall 0.35 inch.

JAMES GLAISHER.

Variorum.

Gum Trees. — The country is richly wooded, though, except in gardens and orchards, there is little variety of foliage; the Gum-trees, white, red, and blue, and the kind called Stringy-bark, being almost universal. The former take their names from the colour of their timber inside the bark; externally there is little to distinguish them. The Blue Gum is the most valuable for building or manufacturing purposes, and, as it is now believed, for its anti-febrile qualities; but it is not yet abundant in South Australia, whither it has been brought from Tasmania. The red makes good fuel, but the white, which prevails in this colony, is almost useless; it will burn, but gives little heat. The Stringy-bark is so called from the peculiarly fibrous nature of its outer covering. Each variety sheds its skin annually, and when we reached Australia the turfless ground, wherever the trees grew, even in sections where they stood far apart, was thickly strewn with the lately dropped bark, and this remained an unsightly litter for many weeks. When the grass had grown again not a vestige of it could be found. But although the native trees in this neighbourhood are almost limited to the Eucalyptus tribe, these vary so much at different periods of growth in different seasons and positions, and under different lights, as to produce almost the effect in the landscape of the Stone Pines, Firs, Elms, Oaks, and Willows, to which, in individuals or groups, a strong resemblance may be traced. While young, or if growing closely together—when their slender stems run up to a height of 100, 200, or even 300 feet, almost destitute of branches—they possess no beauty; but isolated trees send out branches on all sides, and, attaining to a great size, they are often as handsome in form as our finest Elms and Oaks, which would look sadly dwarfed by their sides. We saw one on the estate of Dr. Everard, near Adelaide, the trunk of which measures 40 feet in circumference 4 feet from the ground. It has become completely hollow from age, as is usual with Gum-trees, a characteristic owing chiefly to Nature, but partly to the practice the natives have of lighting a fire against them to obtain shelter from the wind, which burns away the internal part. Although the Gum-tree is not long-lived, and soon reaches its prime, it seems to linger quite disproportionately to the rapidity of its growth when it has passed its maturity, and nothing of the trunk but the bark remains to convey sustenance from its root to its widely-spreading branches. In this state it is often extremely picturesque, though some times it assumes a weird and almost awful appearance. *From "What We Saw in Australia," by Rosamond and Florence Hill, 1875, pp. 54, 55.*

The Principal Vegetable Products of Mount Lebanon and of the plains belonging to it near Tripoli, Beyrout, and Sidon, are said to be olive-oil, tobacco (of a superior quality), the several kinds of grain, such as Wheat, Barley, Indian-corn, Millet, Peas, Beans, two kinds of Vetches, as well as a great variety of vegetables. Almost every kind of fruit abounds in the district, such as Apples, Apricots, Mulberries, Almonds, Oranges, Lemons, Citrons, Bananas, Peaches, Quinces, Pears, Plums, and Prickly Pears. In the lower and middle ranges silk forms the principal article of produce, and in the higher the Vine and corn, the line of cultivation extending to the height of 6000 feet. Owing to the rainless summer, the Vine and Fig are cultivated at a considerable elevation. The Sugar-cane is also produced to a limited extent near Djormi, but no sugar is made. The White Mulberry (Morus alba) is the tree which has most interest to the cultivator, the manufacturer, and the merchant :—

"The wealthy proprietor attends to its culture, assisted by his own people, while the more humble landowner looks after it himself, without being constrained thereby to abandon his other means of livelihood, requiring, as it does, only two or three months of the year. The tree begins at the age of four years to supply leaves fit for the nourishment of the silkworm. Land destined for its cultivation requires to be manured and ploughed for two consecutive years. Trees, where irrigation is impracticable, are never allowed to grow high, but their height, even when water is procurable, never exceeds 9 to 12 feet, in order to increase the strength of the leaves, and to prevent the tree from going to wood."

Of tobacco, the best qualities are produced in the districts of Koura, near Tripoli and Jebail, from whence the names Jebely and Kourani tobaccos. Sheep and goat grazing lands are generally preferred for its cultivation. Sowing is in May, and harvesting in July. Each plant gives three qualities of tobacco. During the harvest the leaves are gathered, tied together, and placed in shady spots, exposed to air and dew, turned frequently, and then pressed into small bales. These tobaccos have a fine aroma, and possess, in common with other Syrian varieties, the merit of not leaving an unpleasant taste in the mouth after smoking. The superior quality is ascribed to goat manure, and to the abundant irrigation practicable. It is almost all consumed in the country, but what remains goes to Egypt. The Olive tree is cultivated throughout the lower and middle regions of the mountain, notably in the numerous glens and on the protected slopes of the ravines. The oil is compressed by the European system, but with primitive apparatus. The now extensive use of American petroleum for burning has caused a reduction in value of olive-oil of late years. Soap-making consumes half the crop, domestic uses barely a fourth, the remainder is exported when prices in Europe and the Levant admit. The production of breadstuffs or cereals in the Lebanon is immeasurably disproportionate to the wants of its inhabitants, and even that which exists is, with a few rare exceptions, of the most meagre quality, partly owing to the poverty of the land, and partly to the more remunerative return offered by the cultivation of more valuable products. There is but very little forest land. In the North, above the Lebanon seaports of Jebail and Batroun, Oak of a diminutive growth is found, and is

used chiefly for feeding goats, fuel, and roofing houses. The most extensive forest of Oaks is that called the Shâara, near the foot of Lebanon, behind Sunnûr. No timber is available for ship-building. The groves of the country are the private property of the adjacent villages, which hold them in common. In some spots the forests have been divided among the villagers, who either sell or cultivate them with Vine or Mulberry trees. They are subject to the same taxes as the other property of the Lebanon, and pay in proportion to value. Small forests of Pine abound in different parts of the sandstone ridges. Pitch is extracted for local consumption.

SELECTING TIMBER.—In selecting timber, the surveyor's attention will naturally be given to an examination of the butt or root end, which should be close, solid, and sound; and if satisfied in this respect, the top should next be inspected, to see that it corresponds with the butt-end. Afterwards he will glance over the exposed sides in search of defects, carefully examining the knots, if any, to see that they are solid. He will, of course, avoid any piece that has either heart, cup, or star shake, or sponginess near the pith at the butt, discoloured wood at the top, splits along the sides, rind-gall, worm holes, or hollow or decayed knots. In dealing with spar-timber, he will select the straightest pieces; they should be free from all the defects before mentioned, upsets, *i.e.*, fibres crippled by compression, large knots, and even those of moderate size if they are numerous or situate ring-like round the stick. Spar-timber should be straight-grained. As planks, deals, &c., depend for their usefulness upon both quality and manufacture, the surveyor will not only see that they are free from excess of sap, knots, shakes, and shelliness upon their sides, but also that they are evenly cut and fit for use of their thickness. Bright looking timber is better in quality than dull, and that which is smooth in the working better than the rough or woolly-surfaced. The heart of trees having the most sap-wood is generally stronger and better in quality than the heart of trees of the same species that has little sap-wood. *Laslett's Timber and Timber Trees.*

Enquiries.

He that questioneth much shall learn much.—BACON.

110. TOUGHENED GLASS.—Can you inform me if the toughened glass is yet in use for horticultural purposes, and, if so, where it can be obtained? *A. C. C. H.*

111. PLANT LABELS.—I shall feel obliged if you, or any of your readers, can inform me where I can procure glass-fronted labels for shrubberies, &c. I mean those which have a sliding plate of glass in front, under which the name of the shrub or plant, written on paper, is inserted. *Frutex.*

112. NARCISSUS EYSTETTENSIS.—The Editors would be greatly obliged if any correspondent could furnish them with a bloom of this six-rayed double Narcissus.

Answers to Correspondents.

CABBAGE STUMPS: *North Durham.* The only way you can convert these into manure is by burying them in hot dung and lime; but it is a slow process. If you have any road-making going on, use them as a basis, for which purpose they answer admirably.

CAMELLIAS: *A. W.* You will find directions for their treatment in our number for March 18, p. 367.

CITRONELLE: *A. L. G.* What you refer to is probably Dracocephalum canariense, or Cedronella triphylla, commonly called Balm of Gilead. You should be able to get them at such nurseries as Mr. Parker's, at Tooting.

GREEN-FLY: *Rob.* You had better syringe with tobacco-water. We have no experience with the material you mention, but you would ascertain by experiment. Sow the Pea 1½ to 2 inches apart.

HOLLIES: *Reader.* These not unfrequently shed some of the older leaves after transplantation, and it is by no means a bad sign if the loss is not excessive. It is, like the renewed growth in spring, occasioned by the free flow of the sap.

MISLEADING ADVERTISEMENT: *W. H. B.* It is clear, from the documents before us, that there was a misapprehension on both sides, but we think it is a case that should be settled between the parties themselves, or by some umpire by whose award both would agree to abide.

NAMES OF PLANTS: *J. Cocker & Sons.* Asplenium flaccidum, from Australia and New Zealand.—*J. G. P.* Nothochlæna nivea, Erica carnea.—*J. G. N.* Lachenalia tricolor, var. aurea.—*G. V.* 1, Halleria lucida; 2, Staphylea pinnata; 3, Rubus trifidus; 4, Embothrium coccineum.—*T. A. N., Cuckfield.* Rivina lævis. Your other question next week.—*Mrs. R.* The Acacia is A. armata, a native of New Holland. Nat. ord. Fabaceæ, sub-order Mimoseæ. The Fern is Pteris serrulata, order Polypodiaceæ, native of China.—*Maj. D.* Scilla (or Urginea) maritima, the officinal Squill.

NAME OF REPTILE: *A. B.* The newt sent is the common small species, Lissotriton punctatus, Bell (Lacerta aquatica, Linn., Fleming). It, as well as the larger species, is often found under damp stones, roots of plants, and in cellars. *I. O. W.*

PHYLLOXERA: *H. J. C.* Both inside and outside. This answers both your questions.

STRING: *W. T. T.* The string is composed evidently of China-grass (Boehmeria nivea) covered with silk. The animal and vegetable substances can be detected by separating the two and burning a piece of each separately. It is most probably of Chinese or Japanese manufacture, for these people, particularly the latter, make much of their string in this way, notably from the bark of Broussonetia, which they roll very tightly and then cover with silk similar to the specimen.

VINE FOR OUT-OF-DOORS: *H. J.* Espiran (black), or Royal Muscadine (white). Plant at once.

VINES: *T. P.* They are probably suffering from defective root-action—either from damaged roots or a cold border—so that the flow of sap does not meet the requirements of the young growth.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "Editors," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. *Letters relating to Advertisements, or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

☞ FOREIGN SUBSCRIBERS sending Post Office Orders, payable at the post-office, King Street, Covent Garden, London, are requested to be good enough to write to the Publisher, at the office of this paper, 41, Wellington Street, Covent Garden, at the same time, to inform him of the fact.

CATALOGUES RECEIVED.—Dicksons & Co. (1, Waterloo Place, Edinburgh), Descriptive Catalogue of Florists' Flowers. — Mr. John Matthews (Royal Pottery, Weston-super-Mare), Illustrated Catalogue of Earthenware Manufactures.

COMMUNICATIONS RECEIVED.—J. B.—N. C. (many thanks).—J. L.—G. S. B. (next week).—C. Y. M.—W. G. C.—F. C.—B. D.—R. B.—H. A.

*** IMPORTANT NOTICE.—*The* AGRICULTURAL GAZETTE *is now* PUBLISHED *on* MONDAYS, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, April 6.

Some good samples of new Grapes are now making their appearance, and the market is well supplied with Strawberries and early vegetables. Two cargoes of St. Michael Pines have been sold during the week, arriving in good condition, and selling at lower prices. An improved demand for Cucumbers has made a better clearance than has been effected for the past fortnight. We shall have to look forward to a dull trade in all best goods during the next week. *Jas. Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1 0	2 6	Oranges, per 100	6 0	12 0
Cobs and Filbts., lb.	0 9	1 0	Pears, per doz.	3 0	10 0
Grapes, per lb.	8 0	20 0	Pine-apples, p. lb.	1 6	4 0
Lemons, per 100	6 0	10 0	Strawberries, per oz.	0 6	1 6
Melons, each	0 0	0 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz.	4 0	..	Leeks, per bunch	0 2	0 4
— Jerusalem, p. lb.	0 3	..	Lettuces, per score	2 0	..
Asparagus (English), per bundle	7 0	12 0	Mint, green, bunch	0 6	1 0
— French	3 6	..	Mushrooms, per pott.	1 0	2 0
— Algerian	4 0	..	Onions, young, bun.	0 4	0 6
Beans, French, p. 100	1 3	2 6	Parsley, per bunch	0 4	..
— Longpod, basket	5 0	..	Peas, green, per lb.	1 0	..
Beet, per doz.	1 0	2 0	Potatos (new), baskt.	1 0	..
Brussels Sprouts, lb.	0 4	..	— new Jersey, p. lb.	0 6	1 6
Cabbages, per doz.	1 0	2 0	— Sweet, per lb.	0 6	..
Carrots, per bunch	0 6	..	Radishes, per bunch.	0 1	0 3
— new, do.	2 6	..	— Spanish, doz.	1 0	..
Cauliflowers, p. doz.	2 0	4 0	— French	0 6	..
Celery, per bundle	1 6	2 0	Rhubarb, per bundle	0 6	1 0
Cucumbers, each	0 6	2 0	Salsafy, per bundle	0 9	..
Endive, per doz.	1 0	2 0	Seakale, per punnet	2 0	3 0
— Batavian, p. doz.	2 0	3 0	Shallots, per lb.	0 3	..
Herbs, per bunch	0 2	0 4	Spinach, per bushel	4 0	..
Horse Radish, p. bun.	3 0	5 0	Turnips, per bundle	0 4	..

Potatos — Rocks, 105*s.* to 110*s.*; Regents, 120*s.* to 170*s.*; Flukes, 130*s.* to 160*s.*; Victorias, 120*s.* to 160*s.* per ton.

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per doz.	24 0	60 0	Genista, do.	9 0	24 0
Begonias, per doz.	6 0	12 0	Heaths, in var., doz.	12 0	30 0
Bouvardias, do.	12 0	18 0	Hyacinths, per doz.	9 0	18 0
Cineraria, per doz.	6 0	18 0	Lily of Valley, doz.	12 0	30 0
Crocus, do.	4 0	9 0	Mignonette, do.	6 0	9 0
Cyclamen, do.	9 0	18 0	Myrtles, do.	3 0	9 0
Cyperus, do.	6 0	12 0	Pelargoniums, scarlet, per doz.	4 0	9 0
Deutzia, do.	6 0	18 0	— in variety, doz.	18 0	36 0
Dielytra, do.	12 0	24 0	Primula sinensis, do.	6 0	12 0
Dracæna terminalis	30 0	60 0	Roses, Fairy, do.	9 0	15 0
— viridis, per doz.	18 0	24 0	— various, do.	18 0	30 0
Epacris, do.	12 0	18 0	Solanums, do.	6 0	24 0
Euphorbia jacquinifolia, per doz.	9 0	18 0	Tulips, do.	8 0	12 0
Ficus elastica	2 6	15 0	Veronica, do.	4 0	12 0
Fuchsia, per doz.	9 0	18 0			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	4 0	12 0	Narcissus, per dozen	1 0	3 0
Azaleas, 12 sprays	0 6	2 0	Nemophila, 12 bun.	4 0	6 0
Camellias	3 0	12 0	Pelargoniums, 12 spr.	1 0	3 0
Carnations, 12 blooms	2 0	4 0	— Zonal do.	0 6	1 6
Cineraria, per bunch	1 0	2 0	Pinks, white, p. doz.	2 0	4 0
Cyclamen, 12 blooms	0 3	0 6	Primula, dbl., p. bun.	1 0	1 6
Epiphyllum, p. doz.	1 0	3 0	Rhododend., 12 hds.	3 0	6 0
Eucharis, per doz.	6 0	12 0	Hyacinths, 12 sprays	1 0	3 0
Euphorbia, 12 spr.	4 0	9 0	Roses, indoor, p. doz.	1 6	10 0
Gardenia, per doz.	4 0	12 0	Spiræa, 12 sprays	1 0	4 0
Heliotropes, 12 spr.	0 6	1 0	Stephanotis, 12 sprays	9 0	18 0
Lily of Valley, 12 spr.	1 0	4 0	Violets, 12 bunches	0 6	2 0
Mignonette, 12 bun.	6 0	9 0			

SEEDS.

LONDON: *April 6.*—The recent favourable weather has caused a brisk demand for Clover and other seeds, in consequence of which the trade generally is marked by extreme firmness. Stocks of all kinds, as previously noted, are now reduced to quite narrow limits, so that prices all round are well supported. In red seed a good steady business is doing at late rates. For the very little White Clover remaining unsold exorbitant figures are demanded, £125 per ton and upwards having been paid for choice parcels. Alsike is in fair request at last week's currencies. For Trefoils there is a lively sale at values which, if not quotably higher, are tending upwards. Grass seeds move off on former terms. Good samples of Mustard and Rape seed being in very short supply, are firmly held in the anticipation of an advance sooner or later. In spring Tares a moderate business is passing at prices in favour of buyers. Canary seed is cheaper; Hemp steady. Other articles show no alteration. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Trade at Mark Lane on Monday was quiet, and no important change occurred in prices. In Wheat, both English and foreign, the fine brilliant weather had some influence in buyers' favour. Barley was difficult to move, and only choice produce may be reported really firm. Malt was dull and somewhat easier in tone. For Oats, prices as a rule were maintained. Maize was steady, and previous quotations prevailed for Beans and Peas. Flour was purchased sparingly on former terms.—On Wednesday the supply of English Wheat was small, but there were moderate importations of foreign, and rates were with some difficulty upheld. Choice Barley made the prices of Monday, and the better qualities of spring corn generally were reported as dear as previously, but inferior produce was very slow of sale, and in some cases less money was not refused. Flour had a drooping tendency.—Average prices of corn for the week ending April 1:—Wheat, 44*s.* 4*d.*; Barley, 33*s.* 7*d.*; Oats, 25*s.* 2*d.* For the corresponding week last year:—Wheat, 42*s.* 5*d.*; Barley, 41*s.* 3*d.*; and Oats, 30*s.* 3*d.*

CATTLE.

At the Metropolitan Market on Monday trade in beasts was very dull and prices lower. In sheep the demand was limited, and we cannot quote higher rates. There are very few now sent in the wool, and those few are very unsaleable; we therefore cease to quote them. Choice calves and lambs were very dear. Quotations:—Beasts, 4*s.* 4*d.* to 4*s.* 10*d.*, and 5*s.* 4*d.* to 5*s.* 8*d.*; sheep, 4*s.* 6*d.* to 5*s.*, and 5*s.* 6*d.* to 6*s.*; calves, 5*s.* 6*d.* to 6*s.* 8*d.*; pigs, 4*s.* 4*d.* to 5*s.* 6*d.*—On Thursday the beast market was dull, and prices ruled occasionally in favour of buyers. There was about an average supply of sheep, and a quiet trade. Lambs sold well at from 8*s.* to 9*s.* per stone. Prime calves in demand, and dearer; inferior sorts dull.

HAY.

The Whitechapel report of Tuesday states that with a small supply and steady trade prices remained firm. Prime Clover realised from 100*s.* to 150*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 133*s.*; inferior, 55*s.* to 75*s.*; and straw, 35*s.* to 48*s.* per load.—On Thursday supplies were fair and trade steady. Quotations:—Clover, best, 120*s.* to 150*s.*; inferior, 85*s.* to 95*s.* Hay, best, 112*s.* to 132*s.*; inferior, 55*s.* to 75*s.*; straw, 36*s.* to 48*s.* per load.—Cumberland market quotations:—Superior meadow hay, 135*s.* to 143*s.*; inferior, 100*s.* to 126*s.*; superior Clover, 147*s.* to 155*s.*; inferior, 110*s.* to 130*s.*; and straw, 48*s.* to 53*s.* per load.

POTATOS.

From the Borough and Spitalfields markets trade is reported as steady, with a good demand for sound Potatos, the supplies of which were rather limited. Regents, 100*s.* to 150*s.* per ton; rocks, 90*s.* to 110*s.*; flukes, 140*s.* to 170*s.*; Victorias, 140*s.* to 160*s.*—The arrivals of foreign Potatos into London last week included 11,122 bags and 177 boxes from Antwerp, 8958 bags Hamburg, 345 bags Bremen, 222 tons Groningen, 1839 bags Stettin, 633 sacks Boulogne, 612 tons and 5397 sacks Dunkirk, 928 bags Malta, 925 bags Rotterdam, 4348 bags Ghent, 216 tons 246 bags and 250 sacks Rouen, 99 tons Harburg, and 2116 bags Terneuzen.

COALS.

The market was quiet on Monday without any alteration in prices. Wednesday's market was steady at previous rates. Quotations:—Bebside West Hartley, 17*s.* 3*d.*; West Hartley, 17*s.* 3*d.*; Walls End—Haswell, 20*s.*; Hawthorn, 17*s.* 3*d.*; Lambton, 19*s.* 6*d.*; South Hetton, 20*s.*; East Hartlepool, 19*s.* 9*d.*

The Grandest Quilled Asters.

BETTERIDGE'S

EXHIBITION PRIZE ASTERS,

New Varieties of 1876, now being sent out by

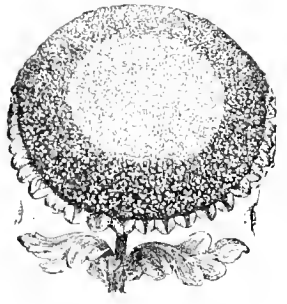
Carter's

IMPORTANT.

Mr. BETTERIDGE has placed in our hands for distribution the ENTIRE STOCK of these Superb Novelties.

Substantial evidence is shown of the superior excellence of Betteridge's Asters by the following extraordinary list of First-class Awards, &c., for stands of these strains during the past summer :—

First-class Certificate, Alexandra Palace,	First Prize, Witney,
Four First-class Certificates, Banbury,	First Prize, Alexandra Palace,
First-class Certificate, Brighton	First Prize, Chipping Norton,
First Prize, Worcester,	First Prize, Oxford,
First Prize, Bath,	First Prize, Stamford,
	First Prize, Banbury,
	First Prize, Woodstock.



SNOWFLAKE or SNOWBALL.
Pure snow-white.

PURPLE PRINCE.
Rich velvety purple.

PRINCE of NOVELTIES.
Bright crimson-lake, centre pure white.

PRINCESS ALEXANDRA.
A greatly improved form of "Duchess of Edinburgh." Bright crimson-rose, pure white centre.

Price per packet (each variety), as above .. 2s. 6d.
Price the Collection of four varieties .. 6s. 6d.

CELOSIA PYRAMIDALIS,

"Reid's Perfection."

The following is the Raiser's description :—

"A most effective ornamental plant, especially so by gaslight, and if properly managed will flower continuously for four or five months. After an active experience of upwards of half-a-century I am in a position to say that no such highly-selected variety can be produced on the Continent. Colour, the purest magenta."

Price per packet, 1s.

Carter's

The Queen's Seedsmen,

237 & 238, HIGH HOLBORN, LONDON, W.C.

NEW VERBENAS (ECKFORD'S)
The finest ever yet offered. See
JOHN KEYNES' CATALOGUE, 1876.

NEW ROSES, 1876.
Selected varieties. See
JOHN KEYNES' CATALOGUE, 1876.

LETTY COLES (KEYNES')—
the ROSE of the season—
Will be sent into commerce the first week in May.
All particulars, consult
JOHN KEYNES' CATALOGUE.

NEW DAHLIAS for 1876.
Keynes' grand flowers. See
JOHN KEYNES' CATALOGUE for 1876.
Castle Street Nursery, Salisbury.

Conifers, New and Rare.

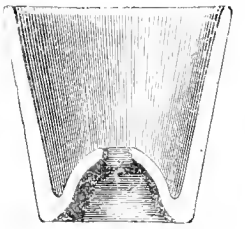
MORRISON BROTHERS, NURSERYMEN, Aberdeen, will be happy to send, carriage paid, to any address, SIX Seedling Plants of each of the following fine CONIFERS for £4, twelve of each for £7 10s., or twenty of each for £12. Most of the varieties can be offered by the 1000. Liberal offers made to large buyers :—

Abies communtata.	Picea magnifica.
,, Douglasii.	,, nobilis.
,, ,, glauca.	,, Nordmanniana.
,, Hookeriana.	,, Pinsapo.
,, Menziesii.	Pinus aristata.
,, orientalis.	,, californica.
,, obovata.	,, contorta.
,, Schrenkiana.	,, deflexa.
,, Wilhimsoni.	,, flexilis.
Cedrus atlantica.	,, Lambertiana.
,, Deodara.	,, Monticola.
Cupressus Lawsoniana.	,, muricata
,, macrocarpa.	,, pyrenaica.
Picea amabilis.	,, taurica.
,, bifolia.	Thuja gigantea.
,, concolor.	,, Lobbii.
,, ,, violacea	Thujopsis dolabrata.
,, grandis.	,, laevirens.
,, lasiocarpa.	,, Standishii.

NEW PATENT.

THE "SUTTON" RESERVOIR FLOWER POT.

SECTIONAL VIEW.



SECTIONAL VIEW.

Messrs. Wheeler Brothers,

STEAM POTTERY WORKS, READING,

Are now prepared to receive applications for Licenses from Potters desirous of making and selling the above in various parts of the United Kingdom.

Opinion of Shirley Hibberd, Esq.,

Editor of the *Gardeners' Magazine*, Author of "Rustic Adornments," &c.

"Amongst the many attempts made to improve the common Flower Pot this alone, as far as my experience goes, is worthy of general adoption."

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per truck.
BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, New Holland Plants, 17s. per ton. [ton.
BROWN and BLACK PEAT, for general purposes, 17s. per
Delivered on rail at Blackwater (South-Eastern Railway), or Farnborough (South-Western Railway), by the truck-load.
Sample bags, 5s. 6d. each; 5 bags, 25s; 12 bags, 50s.
FRESH SPHAGNUM, 10s. 6d. per sack.
WALKER AND CO., Farnborough Station, Hants.

COCOA-NUT FIBRE, as supplied to H.R.H. the Prince of Wales, the Emperor of Germany, Messrs. Veitch & Co., and thousands of Nurserymen, Gardeners, and others, is INVALUABLE for Forcing and Plunging, a wonderful incentive to growth of Flowers, Vegetables, &c. 20 bushels, 6s. 8d.; 50 for 12s. 6d.; truck, 45s.; sample bag, 2s. 6d.; delivered free on to rail or within 5 miles.
ABBOTT AND CO., 80, Bishopgate Street Without, E.C., Manufacturers of Cocoa-nut Fibre, Mats, and Matting, at Eagle Steam Works, Hatcham Road, Old Kent Road, S.E.
Importers of Russia Mats, Raffia Fibre, &c.
Price LISTS on application.

ODAMS' MANURES, FOR ALL CROPS.
Manufactured by the NITRO-PHOSPHATE and ODAMS' CHEMICAL MANURE COMPANY (LIMITED), consisting of Tenant-Farmers occupying upwards of 150,000 Acres of Land.
Chairman—ROBERT LEEDS, Keswick Old Hall, Norwich.
Managing Director—JAMES ODAMS.
Sub-Manager and Secretary—C. T. MACADAM.
CHIEF OFFICE—109, Fenchurch Street, London, E.C.
WESTERN COUNTIES BRANCH—Queen Street, Exeter.
Particulars will be forwarded on application to the Secretary, or may be had of the Local Agents.

MILLER AND JOHNSON (ESTABLISHED 1855)
Manufacture the highest quality of
ARTIFICIAL MANURES
For ROOT, CORN, and GRASS CROPS.
36, Mark Lane, London, E.C.

MILDEW: EWING'S INFALLIBLE CURE.—"The finest of all antidotes."—WM. EARLEY. Retail of principal Seedsmen, 1s. 6d. and 3s., or, packed, 1s. 9d. and 3s. 4d. per bottle. EWING AND CO., Nurseries, Norwich.

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1850, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.
Sold Retail by Seedsmen, in boxes, 1s., 2s., and 10s. 6d. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

SIMPSON'S RED SPIDER, THRIPS, &c., ANTIDOTE. Testimonials of the highest order on application. Per quart, condensed, 6s.; per pint, 3s. 6d. Supplied to Seedsmen and Chemists.
Prepared by JOHN KILINER, Wortley, near Sheffield.

BELL'S MILDEW COMPOSITION, as used by them for the last twenty-five years at their "HORTICULTURAL ESTABLISHMENT, BRACONDALE," their "NURSERIES, LAKENHAM," and "VINERIES, THORPE HAMLET," consisting of over 30,000 feet of glass. Retail, 1s. 6d. and 2s. 6d. per bottle, of the Sole Manufacturers,
BELL AND SON, 10 and 11, Exchange Street, Norwich.

BEST AND CHEAPEST INSECTICIDES.

Duty Free, under permission of the Hon. Board of Customs.

THE "LONDON" TOBACCO POWDER.
"HORTICULTURAL" TOBACCO JUICE.
TOBACCO PAPER, CLOTH, and CORD.

Particulars on application,

CORRY & SOPER,
BONDED TOBACCO STORES, SHAD THAMES, LONDON, S.E.

Patronised by the principal Nurserymen,
And used in the Gardens of the Nobility and Gentry throughout the United Kingdom.

BRIDGFORD'S

ANTISEPTIC LIQUID,

For the removal of all
PARASITES, LICHENS, and INSECTS injurious to PLANTS, TREES, and VINES.
Sold in Bottles at 1s. 6d. and 3s. each,
By all Seedsmen and Nurserymen, and wholesale by the sole agents for England.
TRADE PRICE ON APPLICATION.

JAMES CARTER & CO.,
237 and 238, High Holborn, London, W.C.
List of Testimonials on application.

For Fumigating Greenhouses, &c.

TOBACCO PAPER and CLOTH. — The cheapest and best can be had of
POOLEY AND CO., Horticultural Sundriesmen, 23, Bush Lane, Cannon Street, E.C.

JOHN MATTHEWS, The Royal Pottery, Weston-super-Mare, Manufacturer of TERRA-COTTA VASES, FOUNTAINS, ITALIAN BASKETS, BORDER TILES, GARDEN POTS, of superior quality, from 1 to 30 inches diameter, stand the frost, and seldom turn green. ORCHID, FERN, SEED, and STRIKING PANS, RHUBARB and SEAKALE POTS, &c. Price Lists post-free.
Sheet of Designs, 6d. Book of Designs, 1s.

Metallic Hothouse Builder to Her Majesty.

HENRY HOPE (late Clark & Hope, formerly Clark), HOTHOUSE BUILDER and HOT-WATER APPARATUS ENGINEER.
59, Lionel Street, Birmingham. Established A.D. 1818.
BOOKS of DESIGNS, 5s. each.
☞ The Extensive Ranges of Metallic Hothouses in the Royal Gardens, Windsor and Osborne, were executed at this Establishment.

Important to Farmers.

DAY, SON AND HEWITT, the Original and Sole Proprietors of the STOCK-BREEDERS' MEDICINE CHEST, for all disorders in Horses, Cattle, Calves, Sheep, and Lambs. These Chests contain the celebrated
"CHEMICAL EXTRACT," for Wounds, Swollen Udders, &c.
"GASEOUS FLUID," for Scour or Diarrhœa, and all Pains.
"RED DRENCH," for Cleansing the Blood, and for Fevers.
"RED PASTE BALLS," for Conditioning Horses.
"BRONCHOLINE," for Husk or Hoose in Sheep and Lambs.
"GASEODYNE," for Heaving and Paiming.
Prices, with "Key to Farriery," £2 16s. 6d. and £6 6s. Each Preparation can be had separately, carriage paid.
Used for forty years throughout the United Kingdom and British Colonies.
DAY, SON, AND HEWITT, 22, Dorset Street, Baker Street, London, W.

The Best, Cheapest, and Most Durable Paint
for all kinds of Work, Internal and External, is
THE GRANITIC PAINT.—Its body is superior to Lead, its durability far greater, and it is more economical. Sold, ground in Oil, in ALL COLOURS, by the GRANITIC PAINT COMPANY, Removed to 45, Fish Street Hill, E.C.

Damp Walls Cured and Decay in Stone Prevented,
at a Trifling Cost, by
THE SILICATE ZOPISSA COMPOSITION.—Manufactured in all Colours, or as a COLOURLESS LIQUID, by the SILICATE ZOPISSA COMPOSITION AND GRANITIC PAINT COMPANY, Removed to 45, Fish Street Hill, E.C.

Oil Paint No Longer Necessary.

HILL AND SMITH'S BLACK VARNISH for Preserving Ironwork, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.

Glangwilly, Llanpumpsant, Carmarthen, Nov. 27, 1873.—"Mr. Lloyd Lloyd encloses cheque for £3 5*s.*, amount due to Messrs. HILL & SMITH, and he considers the Black Varnish one of the most useful things he ever possessed."

Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley; and 118, Queen Victoria Street, London, E.C., from whom only it can be obtained.

CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would specially draw attention to the fact that every cask of their Varnish is legibly marked with their name and address, without which none is genuine.

CARSONS' PAINT,
PATRONISED BY THE QUEEN,
H.R.H. THE PRINCE OF WALES,
The British, Indian and Colonial Governments,
8000 of the Nobility, Gentry, and Clergy,
Railway and Canal Companies, Collieries, Ironmasters, &c., &c.,
Is extensively used for all kinds of
OUTDOOR WORK.
It is especially applicable to
WOOD, IRON, BRICK, STONE & COMPO.
CAN BE LAID ON BY UNSKILLED LABOUR.
Sold in all Colours.
2 cwt. free to all Stations.
Prices, Patterns, and Testimonials sent Post Free.

WALTER CARSON & SONS,
LA BELLE SAUVAGE YARD,
LUDGATE HILL, LONDON, E.C.,
And 21, BACHELOR'S WALK, DUBLIN.
NO AGENTS.

JOHN EDMONDS & CO.,
HORTICULTURAL BUILDERS AND HOT-WATER ENGINEERS,
LILLIE BRIDGE, FULHAM, LONDON, S.W.,
WILL BE HAPPY TO FURNISH
Plans and Estimates for the Erection and Heating complete of Conservatories and Hothouses of every description.
VERANDAHS, PAVILIONS, GLASS APPROACHES, &c.
MANSIONS, CHURCHES, SCHOOLS, PICTURE GALLERIES, HALLS, &c.,
Heated by Hot-water on the best principles.
PATENTEES OF THE TUBULAR SADDLE BOILER.
PRICE LISTS ON APPLICATIONS.

SWEET-SCENTED RHODODENDRONS.
ISAAC DAVIES
Begs to inform the Public that his Sweet-scented and other Free-blooming RHODODENDRONS and AZALEAS, which have been awarded First-class Certificates of Merit, will be in full bloom about the middle of this month. Also the best varieties of AZALEA MOLLIS, of which he holds the largest stock in England. It will give him much pleasure to show these to all who may favour him with a call; they will be extremely beautiful, and verify the description he has given of them.
BROOK LANE NURSERY, ORMSKIRK.

TO THE TRADE.—SEED POTATOS.
H. & F. SHARPE
HAVE STILL TO OFFER
THE FOLLOWING VARIETIES OF SEED POTATOS,
Grown from the finest selected stocks, and free from disease.

RIVERS' ROYAL ASHLEAF KIDNEY,
ALMA KIDNEY,
NEW KING of the FLUKES,
HUNDREDFOLD FLUKE,
EARLY DALMAHOY,
AMERICAN EARLY ROSE,
CLIMAX (very prolific),
BROWNELL'S BEAUTY,
EXTRA EARLY VERMONT,
BRESEE'S KING of the EARLIES,
WALKER'S IMPROVED REGENT,
ALPHA,
MYATT'S PROLIFIC KIDNEY,
FLUKE KIDNEY (old variety),
MODEL (very handsome variety),
DRUMMOND'S EARLY PROLIFIC,
RED-SKIN FLOURBALL,
VERMONT BEAUTY,
COMPTON'S SURPRISE,
EARLY GOODRICH,
AMERICAN WONDER,
PATERSON'S VICTORIA,
YORKSHIRE REGENT,
SNOWFLAKE and EUREKA.

SEED GROWING ESTABLISHMENT, WISBECH.

SIXTY THOUSAND ROSES IN POTS,
From 12s. to 18s. per dozen; £5 per 100.
Roses, extra fine, established in 6-inch pots, for Greenhouse Culture or for Planting out in Conservatory, at 30s. per dozen.
ALL THE BEST NEW ROSES for 1876 at 30s. per dozen.
DESCRIPTIVE CATALOGUES ON APPLICATION.
ADDRESS:—
WM. WOOD & SON,
THE NURSERIES, MARESFIELD, UCKFIELD, SUSSEX.

HOLLIES. HOLLIES. HOLLIES.
This being undoubtedly the best season of the year for Transplanting HOLLIES, we would call the attention of the Public to our Collection of the same.
We possess over 5000 fine plants of the COMMON GREEN HOLLY, fit for immediate removal, from 2 to 10 ft.
Also a very large and choice selection of Green and Variegated Varieties, including fine specimens of "Golden Queen," from 10*s.* 6*d.* to £7 7*s.* each.
PRICES OF ANY OF THE ABOVE WILL BE GIVEN ON STATING HEIGHT REQUIRED.
OSBORN & SONS,
FULHAM NURSERIES, LONDON S.W.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by Her Majesty the Queen for Windsor Castle and Frogmore Gardens, the late Sir Joseph Paxton, and the late Professor Lindley, &c.

MADE of PREPARED HAIR and WOOL.

A perfect non-conductor of heat or cold, keeping a fixed temperature where it is applied. A good covering for Pits and Forcing Frames.

PROTECTION from COLD WINDS and MORNING FROSTS.

"FRIGI DOMO" NETTING, 2 yards wide, 1s. 4d. and 1s. 10d. per yard.

"FRIGI DOMO" CANVAS.

2 yards wide	.. ..	1s. 10d. per yard run.
3 yards wide	.. ..	3s. per yard.
4 yards wide	.. ..	3s. 10d. per yard.

ELISHA T. ARCHER, only Maker of "Frigi Domo," Stanstead and Brockley Roads, Forest Hill, London, S.E.; and of all Florists and Seedsmen. All goods carriage paid to London.

NOTICE.—REMOVED from 3, CANNON STREET, CITY.

Russia Mat Merchants.

MARENDAZ AND FISHER, Importers and Manufacturers, 9, James Street, Covent Garden, W.C., have a large stock of Archangel and Petersburg MATS, for Covering, Tying, and Packing. Tanned and New NETTING, Tarred TWINES, &c.

Importers of RAFFIA FIBRE.

RUSSIA MATS.—A large stock of Archangel and Petersburg, for Covering and Packing. Second sized Archangel, 100s.; Petersburg, 60s. and 80s.; superior close Mat, 45s., 50s., and 55s.; packing Mats, 20s., 30s., and 35s. per 100; and every other description of Mat at equally low prices, at

J. BLACKBURN AND SONS, Russia Mat and Sack Warehouse, 4 and 5, Wormwood Street, E.C.

RUSSIA MATS, for Covering Garden Frames.—ANDERSON'S TAGANROG MATS are the cheapest and most durable. Price List, which gives the size of every class of Mat, forwarded post-free on application.

JAS. T. ANDERSON, 7, Commercial Street, Shoreditch, London, E.C.

Indestructible Terra-Cotta Plant Markers.

MAW AND CO.'S PATENT.—Prices, Printed Patterns, and Specimens, sent post-free on application; also Patterns of Ornamental Tile Pavements for Conservatories, Entrance Halls, &c.

MAW AND CO., Benthall Works, Broseley.

PRUSSIAN WOOD GARDEN STICKS and TALLIES, commended by the Royal Horticultural Society. The above can be had, of all sizes, wholesale, of

CHARLES J. BLACKITH AND CO.,

Cox's Quay, Lower Thames Street, London, E.C.

Retail of the principal Seedsmen. Prices on application.

Under the Patronage of the Queen.

J. SMITH'S IMPERISHABLE STRATFORD LABELS.

The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.

The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."

Samples and Price List free.

Sole Manufacturer: J. SMITH, The Royal Label Factory, Stratford-on-Avon

SHAW'S TIFFANY, ELASTIC NETTING, CANVAS, &c., for Shading, Protecting, and other Horticultural Purposes. For Samples and Prices apply to JOHN SHAW AND CO., 29, Oxford Street, Manchester.

To the Trade.

BOUQUET PAPERS of all descriptions—in paper with scalloped edges, also in real lace, satin, &c. Great reduction in prices. BOUQUET WIRE in every variety. New CATALOGUE sent on receipt of trade card.

HOOPER AND CO., Florist's Sundriesmen, Covent Garden, London, W.C.

SAMPLE BOOK of GARDEN NETTINGS, HORTICULTURAL SHADINGS, &c., free by post for two stamps.

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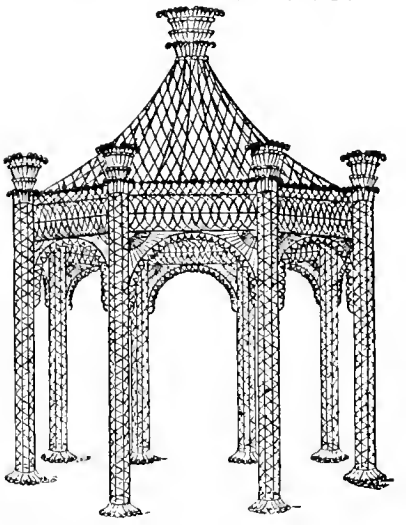

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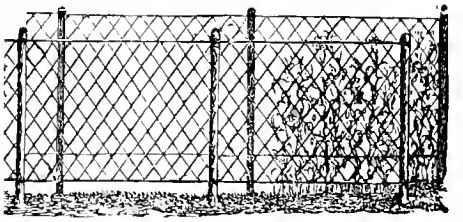

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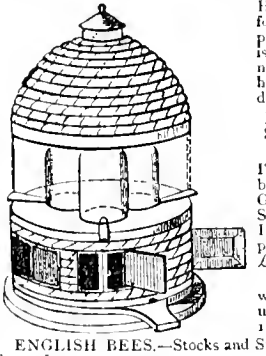

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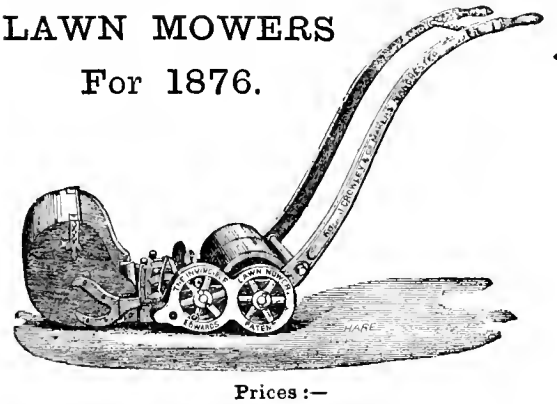

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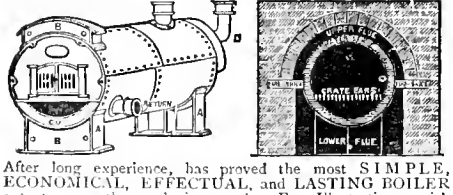

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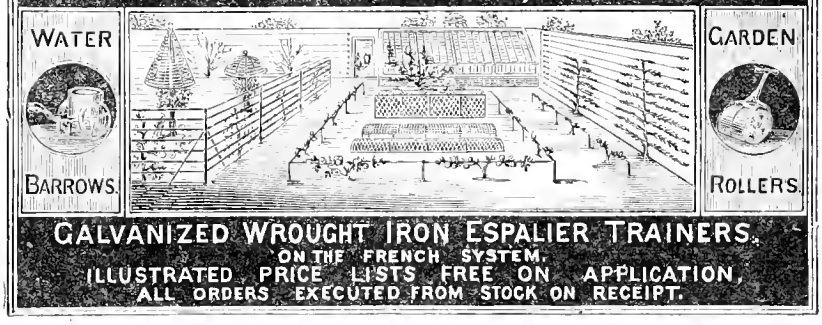

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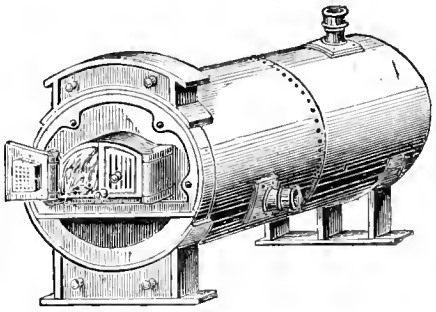

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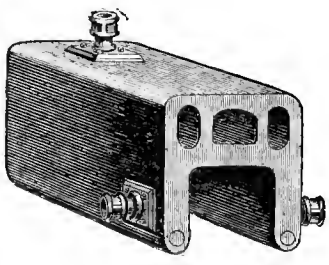

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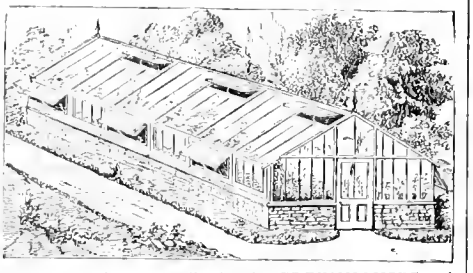

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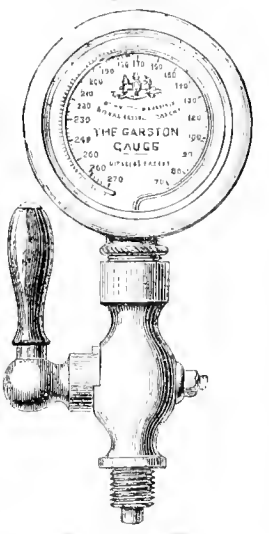
Price 18s. 6d., packed complete. Circulars free.



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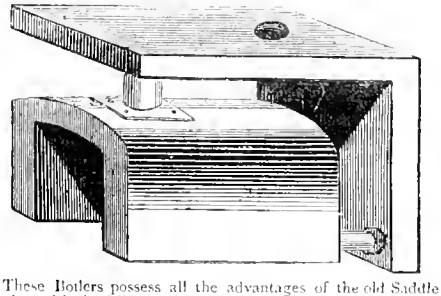
JONES'S PATENT "DOUBLE L" SADDLE BOILER.



These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements—viz., the water space at back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel; the cost of setting is also considerably reduced, and likewise the space occupied; at the same time these Boilers are simple in construction, and being made of wrought iron are not liable to crack. They are made of the following sizes:—

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20 ,,	18 ,,	24 ,,	400	8	0	0
20 ,,	18 ,,	30 ,,	500	9	0	0
24 ,,	24 ,,	24 ,,	700	12	0	0
24 ,,	24 ,,	30 ,,	850	14	0	0
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24 ,,	24 ,,	48 ,,	1,400	20	0	0
28 ,,	28 ,,	60 ,,	1,800	25	0	0

Larger sizes if required.

From Mr. CHARLES YOUNG, *Nurseries, Balham Hill, S.W., May 29, 1873.*

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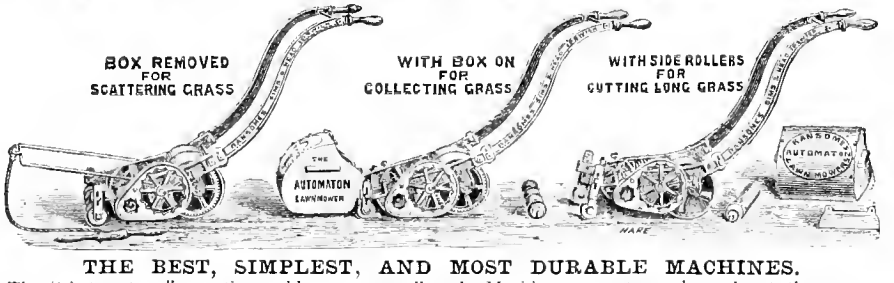

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The "Automatons" are thoroughly strong, well-made Machines, easy to work, and cut the grass perfectly and leave no ribs. They collect the cut grass into a box in front of the Machine, or deliver it on the Lawn behind the Machine as required. They have adjustable handles to suit the height of any person, and are sent out with both front and side rollers, the former for use in general work, and the latter when cutting long grass, or when it is unnecessary to roll the grass in front of the cutters. These Machines have the best wheel gearing, combined steel and iron knives, an automatic silent action, instead of ratchets, and all the parts easily adjustable. Twelve thousand in use.

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For small gardens. These perfect "Little Gems" have a grass-collecting box, and the height of cut can be varied. They have an adjustable ledger blade, and the height of the handle can be adjusted to suit any person. The cutters can be reversed when blunt by driving the Machine in the opposite direction.

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THE AGRICULTURAL GAZETTE, for MONDAY, APRIL 3.

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"Far superior to any of ours."—*The Field.*
"Remarkably easy to work."—*Gardeners' Mag.*

"We feel bound to recommend it to our readers as one of the best Mowers we have as yet made acquaintance with."—*Florald World.*

PATRONIZED BY

HER GRACIOUS MAJESTY THE QUEEN,
HER IMPERIAL MAJESTY THE EMPRESS OF GERMANY,
THE LATE EMPEROR OF THE FRENCH,
HIS ROYAL HIGHNESS THE PRINCE OF WALES,
HIS IMPERIAL MAJESTY THE EMPEROR OF AUSTRIA,
THE VICEROY OF EGYPT,
And many of the Nobility and Gentry of Great Britain.

CHIEF ADVANTAGES.

They are extremely LIGHT IN DRAUGHT, SIMPLE IN CONSTRUCTION, WELL MADE, and NOT LIKELY TO GET OUT OF ORDER.

They Cut LONG or SHORT, WET or DRY Grass, and do not clog.

They have no ROLLERS in FRONT of the Cutters, and therefore Cut the Grass as it GROWS, and do not miss the BENTS.

They work well on SLOPES, STEEP EMBANKMENTS, UNDER SHRUBS, and Close up to Trees, &c.

They can be USED either WITH or WITHOUT GRASS BOX, as may be desired.

TESTIMONIALS.

From A. F. BARRON, Esq., *Royal Horticultural Society, Chiswick Gardens, W.*

"GENTLEMEN,—We have now had your 'Archimedean' Lawn Mower in use for several months, and without hesitation I can truly say it is the *best* and *most efficient* implement of the kind we have ever used."

From SHIRLEY HIBBERD, Esq., F.R.H.S., *Editor of the "Gardeners' Magazine."*

"The 'Archimedean' Lawn Mower has been in constant use in our experimental garden since Midsummer last, and has done its work remarkably well. It is a good sign when the men who have to do the work take to a thing of this sort without any persuading, and my men evidently regard it as a magical means of making mowing an amusement, for they fly through the work and enjoy the perfect shave quite as much as I who look on, and wonder we have so lately attained to real simplicity."

From the Rev. A. MCALLISTER, *Plumstead Vicarage, London.*

"I have the pleasure of forwarding a cheque for the 'Archimedean' Lawn Mower which I had from you, and which does its work admirably."

LIST OF PRICES.

6-inch, Suitable for Small Grass Plots	£1 1 0	14-inch, Suitable for a Man	£5 5 0
8 " " " "	2 2 0	16 " " " on Level Lawns	6 6 0
10 " " a Lady or a Boy	3 3 0	18 " " " and Boy	7 7 0
12 " " " "	4 4 0	20 " " " "	8 8 0

Grass Boxes, 6-inch, 4*s.*; 8-inch, 5*s.*; 10 and 12 inch, 7*s.* 6*d.*; 14, 16, 18, and 20-inch, 10*s.* each.

DELIVERED CARRIAGE FREE AT ANY RAILWAY STATION IN THE UNITED KINGDOM.

NO CHARGE FOR PACKING CASES, which are most convenient for storing the Machine during Winter.

EVERY MOWER IS WARRANTED TO GIVE AMPLE SATISFACTION,
And if not approved of may be returned within a Month, and the amount paid be refunded.

Before purchasing a Lawn Mower send for Catalogue, containing Opinions of the Press and Testimonials from Gentlemen of high position in the Horticultural World, Noblemen, Clergymen, and others.

WILLIAMS & CO. (Limited), Manufacturers and Patentees, 33, King William Street, London, E.C.

Selling Agents: JOHN G. ROLLINS & CO., Old Swan Wharf, Upper Thames Street, London, E.C.
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THE

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Established 1841.

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ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE.—SCIENTIFIC, FRUIT, and FLORAL COMMITTEES' MEETINGS, on WEDNESDAY next, April 19 at 11 o'Clock. GENERAL MEETING at 3 o'Clock. Admission, 1s.

CRYSTAL PALACE.—GREAT FLOWER SHOW, MAY 19 and 20. GREAT ROSE SHOW, JUNE 16 and 17. GOAT SHOW, MAY 5, 6, and 8.

ALEXANDRA PALACE. — The FIRST GREAT FLOWER SHOW of the Season will be held on FRIDAY and SATURDAY, May 5 and 6. LAST DAY of ENTRY, April 28.
The GREAT ROSE SHOW of the Season will be held on FRIDAY and SATURDAY, July 7 and 8. LAST DAY of ENTRY, July 1. Schedules of Prizes and all particulars may be had on application to ALEX. McKENZIE, 1, and 2, Great Winchester Street Buildings, E.C., and at the Alexandra Palace, Muswell Hill, N.

ROYAL FLORA SOCIETY of BRUSSELS.
The GRAND INTERNATIONAL HORTICULTURAL EXHIBITION will be held at Brussels from APRIL 30 to MAY 6.
Accredited Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

ROYAL MANCHESTER BOTANICAL and HORTICULTURAL SOCIETY.
EXHIBITION of AURICULAS and MISCELLANEOUS PLANTS, Town Hall, APRIL 25.
ROYAL NATIONAL TULIP SOCIETY'S SHOW at the Gardens, Old Trafford, MAY 26 and 27.
GRAND NATIONAL HORTICULTURAL EXHIBITION, JUNE 2 to 9.
EXHIBITION of CARNATIONS, FRUITS, &c., AUGUST 11 and 12.
For Schedules, apply to the undersigned,
BRUCE FINDLAY.
Royal Botanic Gardens, Manchester.

SPALDING HORTICULTURAL SHOW will take place on JUNE 21 and 22. The Prize List has been considerably extended Schedules on application to
GEORGE KINGSTON, Secretary.
24, Hall Place, Spalding, March, 1876.

THE TORBAY HORTICULTURAL SOCIETY.—The above Society will hold its SUMMER SHOW at Torquay, on JUNE 28 and 29. Special Prizes for CUT ROSES (amounting to FIFTY POUNDS), open to all England. Prize Lists and Form of Entry ready on the 20th inst.
W. FANE TUCKER, Capt., Hon. Sec.
Braddon Tor, Torquay.—April 10.

BRISTOL, CLIFTON and WEST of ENGLAND ROSE and STRAWBERRY SHOW, to be held in the Zoological Gardens, Clifton, on TUESDAY, July 4.
Schedule of Prizes, with Rules and Regulations, may be obtained of the Gatekeepers at the Gardens, or by letter addressed to the SECRETARY, Zoological Gardens, Clifton, on and after Monday next.

HORTICULTURAL CLUB, 4, Adelphi Terrace, Strand, W.C.
The Committee beg to announce that the Club is now in full working order, and that, in addition to the Reading, Billiard, and Smoking Rooms, Bedrooms are now provided for the use of Members. Entrance Fee, Two Guineas; Annual Subscription, Two Guineas. Prospectuses can be had on application to the Honorary Secretary at the Club House.

RICHARD WALKER, Market Gardens, Biggleswade, can supply Best RED CABBAGE PLANTS till Monday or Tuesday, at 6s. per 1000.

SUTTON'S GRASS SEEDS for PASTURES, 22s. 6d. to 36s. per Acre. Carriage free.

SUTTON'S GRASS SEEDS for PARK GROUNDS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for GARDEN LAWNS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for CROQUET GROUNDS, 20s. per Bushel. Carriage free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

To the Seed Trade.
H. AND F. SHARPE'S special SPRING CATALOGUE of home-grown MANGEL WURZEL, TURNIP, and other AGRICULTURAL and GARDEN SEEDS, is now ready, and will be forwarded on application.
Seed Growing Establishment, Wisbech.

Mangel and Swede.
JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself.
Bardney Manor, Lincoln.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

To the Trade.
ASPARAGUS, 1-yr., 2-yr., and 3-yr. TROPÆOLUM CANARIENSE.
JAMES BIRD, American Nurseries, Downham.

Asparagus.—Plant Now.
CONOVER'S COLOSSAL and GIANT.—Half a million, 1-yr., 2-yr., 3-yr., and 4-yr. plants.
Special prices on application to
JAMES DICKSON & SONS, "NEWTON" Nurseries, Chester.

RHODODENDRONS.
2-yr. seedlings, 4 to 8 inches, transplanted.
3 yr seedlings, 6 to 10 inches, transplanted.
8 to 12 inches, transplanted.
For Prices and Samples apply to
HENRY FARNSWORTH, Matlock Bank, Derbyshire.

Rhododendrons.
W. H. ROGERS, Red Lodge Nursery, Southampton, offers choice named Rhododendrons of all the leading and best sorts, at the low price of £3 per 100, or selected 18s. per dozen.
N.B. This is a fine month for planting them.

FOX and GAME COVERT.
ENGLISH FURZE, 1-yr., 5s.; 2-yr., 10s. per 1000.
ENGLISH BROOM, 1-yr., 5s.; 2-yr., strong, 15s. per 1000.
W. MAULE AND SONS, The Nurseries, Bristol

April the Best Month for Planting Evergreens.
COMMON LAURELS, 100,000, 2 to 4 feet; PORTUGAL LAURELS, and other Evergreens.
CATALOGUES on application. Address
WM. WOOD AND SONS, The Nurseries, Maresfield, Uckfield, Sussex.

Thorns, Thorns, Thorns.
PARKER AND BUSH offer extra strong THORN QUICK, 2 to 3 feet, three times transplanted, Price and samples on application.
St. Michael's Hill Nursery, Bristol.

LARCH.—10,000, 1 to 1½ foot, at 15s. per 1000; 10,000, 1½ to 2 feet, at 25s. per 1000; 8000, 2½ to 3½ feet, at 35s. per 1000.
JAMES SMITH, Darley Dale Nurseries, Matlock.

DICK RADCLYFFE AND CO. supply every requisite for the Seed Trade. Special offers of GARDEN STICKS and LABELS, FLOWERS for Easter Decoration, WHITE CAPES, WREATHS, &c., with Lists, on application.
128 and 129, High Holborn, W.C.

Hothouses, Hot-water Apparatus, &c.
HALLIDAY AND CO., HOTHOUSE BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates and Plans free. Best Construction! Best Materials! Best Workmanship! Catalogues free.
Offices: 22, Barton Arcade, MANCHESTER

Wood Engraving.
MR. W. G. SMITH, ARTIST and ENGRAVER on WOOD, 15, Mildmay Grove, London, N.

WANTED, DAHLIAS (Pot or Ground Roots). State Price,
G. WALKLING, College Park Nursery, Lewisham, S.E.

WANTED, a quantity of EUONYMUS (Green), from 1 to 2 feet high, nice bushy stuff; also large well-grown FICUS ELASTICA, and hardy PALMS and FERNS. Send sizes and prices to
G. REEVES SMITH, Aquarium, Brighton

CONSIGNMENTS wanted of best FRUITS and VEGETABLES by GEO. LAXTON, JUN., Salesman, Covent Garden Market. Unexceptionable references as to cash returns.

CARTER'S GRASS SEEDS for Lawns and Parks, 20s. per bushel.

CARTER'S GRASS SEEDS for Permanent Pastures, 22s. 6d. to 36s. per acre.

CARTER'S GRASS SEEDS. Carriage Free. To suit all Soils.

CARTER'S GRASS SEEDS for Renovating Meadows and Lawns, 18s. to 20s. per bush.

CARTER'S, THE QUEEN'S SEEDSMEN, 237 and 238, High Holborn, W.C.

LILIUM AURATUM.—Unusually large, heavy, and plump Bulbs of this beautiful Lily, at 42s. and 60s. per dozen
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Hardy Florists' Flowers
THOMAS WARE'S (1876) SPRING CATALOGUE of the above, including Chrysanthemums, Delphiniums, Pansies, Pæonies, Phloxes, Pentstemons, Pyrethrums, and others, may be had, post-free, on application.
Hale Farm Nurseries, Tottenham, London.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Notice.—Seeds, Seeds.
WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds.
CATALOGUES now ready, which contain every requisite, at fair prices, post-free on application.
Highgate, London, N.

Plant Catalogue.
CHARLES TURNER'S DESCRIPTIVE LIST of PLANTS for the Season, including several new varieties now offered for the first time, is ready, and may be had on application.
The Royal Nurseries, Slough.

CHOICE SHOW PELARGONIUMS, fine plants, 6s., 9s., and 12s. per dozen.
EDWIN COOLING, Mile Ash Nurseries, Derby.

Special Offer—Vesuvius, Mrs. Pollock.
WILLIAM BADMAN offers good plants of Vesuvius, from single pots, 10s. per 100, 85s. per 1000; Mrs. Pollock, 18s. per 100; Crystal Palace Gem, 15s. per 100. Package included. Terms cash
Cemetery Nursery, Gravesend, S.E.

VERBENAS, VERBENAS, VERBENAS.—White, Purple, Scarlet, and Pink; also twelve extra choice named varieties, strong, healthy-rooted cuttings, perfectly free from disease, 6s. per 100, 50s. per 1000, for cash.
H. BLANDFORD, The Dorset Nurseries, Blandford.

Verbenas, Verbenas, Verbenas.
WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

Verbenas, Verbenas
JOHN SOLOMON offers White, Scarlet, Purple, Pink, Crimson, Rose, and other mixed sorts, good strong spring-struck cuttings, well rooted, at 6s. per 100, 50s. per 1000, package included. Cash to accompany all orders.
Islington Nursery, Park Street, Islington, N.

TEA-SCENTED ROSES.—Strong plants, of best varieties, for Bedding or General Decoration, at 12s. per dozen, 80s. per 100. Immense Stock of GREENHOUSE and BEDDING PLANTS, which are worth growing. See CATALOGUE, free on application.
WILLIAM KNIGHT, Floral Nursery, Hailsham, Sussex.

New Roses for 1876.
H. BENNETT offers a careful selection of the above, in plants not to be equalled; unusually fine this season; ready in March. DESCRIPTIVE LISTS post-free.—Manor Farm Nursery, Stapleford, Salisbury.

SCOTCH FIR.—A large quantity of Scotch Fir to be Sold cheap—1-yr., 1-yr. transplanted, and 2-yr., 2 yr. transplanted, very fine healthy plants. For prices and samples apply to
Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Seed Potatos for Sale.
FORTYFOLDS, FLUKES, REGENTS, and other varieties, at low price.
JOHN BATH, Potato Salesman, 34, Wellington Street, Covent Garden, London, W.C.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.
Mr. WEBB, Calcot, Reading.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

SALES BY AUCTION.

Dendrobium barbatulum: Dendrobium Heyneanum.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, April 19, at half-past 12 o'Clock precisely, an Importation of Plants of DENDROBIUM BARBATULUM, one of the prettiest of Dendrobiums, flowers pure white and sweet-scented like Violets; also an importation of DENDROBIUM HEYNEANUM: the flowers of this are of a light buff colour.

On view the morning of Sale, and Catalogues had.

Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, April 19, at half-past 12 o'Clock precisely, a collection of Established ORCHIDS, including the following:—

Odontoglossum triumphans,
Lælia anceps Barkeriana,
Aerides Lobbii,
Vanda suavis,
Bollea Lalindei,
,, Patinii,
Cypripedium hirsutissimum,
,, Sedeni,
,, Dominianum,
,, Schlimii,
,, pardinum,
,, vittatum,
Pescatorea Roezlii,
Odontoglossum sceptrum,
Ada aurantiaca,
Oncidium macranthum,
Oncidium superbiens,
Cymbidium eburneum,
Cattleya Mendelii,
,, Trianæ splendens,
Utricularia montana,
Phalænopsis leucorrhoda, flowering,
Aerides rubrum,
Cattleya Eldorado splendens,
Lælia Wallisii,
Oncidium Forbesii, in flower,
Batemannia Wallisii,
,, Burtii,
Eulophia guineensis,
Calanthe Veitchii,

Some very fine plants of Saccolabiums, such as guttatum, Blumei majus, Rheedii, giganteum, retusum, and a few plants of the exceedingly rare Odontoglossum blandum, and some very fine plants of Oncidium ampliatum majus, with many other beautiful and rare kinds.

On view the morning of Sale, and Catalogues had.

A Consignment of Plants from Mr W. E. Dixon, of Beverley.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, April 20, at half-past 12 o'Clock precisely, fine specimen PALMS, FERNS, ANTHURIUMS, DRACÆNAS, AZALEAS, and other Stove and Greenhouse Plants; also a collection of ORCHIDS, mostly in flower.

On view the morning of Sale, and Catalogues had.

Pine-apple Nursery, Edgware Road, W.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions from Mr. J. Weeks to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., almost without reserve, on THURSDAY, April 20, at half-past 12 o'Clock precisely, the Valuable PREMISES and GOODWILL of the PINE-APPLE NURSERY, Maida Vale, Edgware Road, W., together with Dwelling-house, Seed Shop, and Offices, and all the extensive ranges of Horticultural Buildings and Sheds.

Held:—As to part, for a term which will expire in 1909, at a Ground-rent of £45; and, as to the remainder, for a term which will expire in 1923, at a Ground-rent of £89. The Nursery has, within the last three or four years, been very greatly enlarged and improved, upwards of £10,000 having been expended in additions, improvements, and repairs; and it is considered in the Trade to be the most important Establishment of the kind in the World. It possesses an extensive connection both in the Nursery and Seed Trade, amongst the Nobility and Gentry and their Gardeners. Part of the purchase-money may remain on Mortgage.

Nurseries in the immediate neighbourhood of London are seldom valued by the acre; but this is an exception, as the Horticultural Buildings and Show-grounds cover about 2½ Acres, and form a most valuable property.

For further particulars apply to Messrs. KEARSEY, SON, AND HAWES, 35, Old Jewry, London, E.C.; and Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

Odontoglossum cirrhosum.

MR. J. C. STEVENS has received instructions from Mr. Wm. Bull to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, April 24, at half-past 12 o'Clock precisely, about 200 plants of the new and marvellously beautiful ODONTOGLOSSUM CIRRHOSUM. A plant of this extremely handsome new introduction has just flowered for the first time, and was exhibited at the Royal Horticultural Society's meeting on Wednesday the 5th inst., when it elicited unusual admiration, and was unanimously awarded the First-class Certificate it so justly merited.

On view the morning of Sale, and Catalogues had.

Odontoglossum Hallii—Dendrobium barbatulum.

MR. J. C. STEVENS will include in his Sale, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, April 24, some good strong plants of Odontoglossum Hallii, Odontoglossum crispum (Alexandræ), and some plants of the pretty white-flowering Dendrobium barbatulum.

On view the morning of Sale, and Catalogues had.

Imported Orchids from Assam.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, April 24, at half-past 12 o'Clock precisely, an importation of ORCHIDS from ASSAM, including quantities of the hitherto rare Pleione humilis and Pleione maculata, Vanda cærulea, Vanda undulata, Dendrobium Hookerianum, Dendrobium marmoratum, Coelogyne corymbosa, probably never before seen in England in a living state; the rare Coelogyne barbata, which was said by Dr. Lindley to be perhaps the finest of the fine genus.

On view the morning of Sale, and Catalogues had.

Important Sale of Rare Plants.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, April 27, at half-past 12 o'Clock precisely, SURPLUS PLANTS from the Collection of the late S. Rucker, Esq., of West Hill, Wandsworth, comprising Specimen Azaleas and Palms, a choice collection of Filmy Ferns, including Trichomanes, Gleichenias, &c.; a very fine collection of Nerines, Ferns, Crotons, Dracænas, and Miscellaneous Stove Plants, &c.

On view the morning of Sale, and Catalogues had.

IMPORTANT SALE of a Choice Collection of CARNATIONS, PICOTEES, and PINKS of fine growth; Hardy CONIFERÆ SHRUBS, AMERICAN PLANTS, Standard and Dwarf ROSES, LILIUMS, GLADIOLUS, SEEDS, &c., with a Collection of GREENHOUSE PLANTS in Flower, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on THURSDAY, April 20, at half-past 12 o'Clock precisely.

On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, &c., 98, Gracechurch Street, E.C., and Leytonstone, E.

Woodford, Essex—For Occupation or Investment.

SIX ACRES of fine, rich MARKET GARDEN or NURSERY LAND, with SEVEN-ROOMED DWELLING-HOUSE and OUTBUILDINGS standing thereon, held for an unexpired term of 45 years at a moderate ground rent.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on MONDAY, April 24, at 2 o'Clock punctually, the valuable LEASEHOLD ESTATE known as Lucas' Farm, situate opposite the old Mill Inn, Woodford, Essex, and in a locality where there is a great demand for produce.

May be viewed prior to the Sale. Particulars of Sale had on the Premises, and of the Auctioneers, 98, Gracechurch Street, City, and Leytonstone, E.

Sale of a very Valuable Collection of Specimen and Half-specimen STOVE and GREENHOUSE PLANTS, the whole of which have been exhibited.

ARTINGSTALL AND HIND (the surviving Partners of the late Firm of CAPES, DUNN & Co) beg to announce that they have received peremptory instructions from Messrs. E. Cole & Sons, owing to their want of space, to SELL by AUCTION, on WEDNESDAY and THURSDAY, April 19 and 20, commencing at 12 o'Clock prompt, at their Nurseries, Withington, near Manchester, the whole of their valuable Collection of EXHIBITION PLANTS.

May be viewed one week prior to the Sale, and Catalogues then had at the Nurseries; or now, together with further information, by applying to the Auctioneers, 51, Princess Street, Manchester.

The Most Beautiful new Regal Pelargonium is

BEAUTY OF OXTON.

Price, 1 guinea each.

A pretty and charming novelty is the new double-flowering IVY-LEAVED PELARGONIUM, "KONIG ALBERT." Price 7s. 6d. each.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to intimate that he has just issued a SUPPLEMENTARY LIST to his General CATALOGUE of New and Rare Plants at considerably reduced prices, and which will be forwarded free to all applicants, either by himself or by his Agents,

Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

VERBENAS for the MILLION.—Purple King, Crimson, Scarlet, White, Pink, and other varieties, spring-struck, 6s. per 100. Strong plants of all the above colours, well hardened, 8s. per 100. Package free for cash. Sample will be sent free by post on receipt of six stamps.

S. BIDE, Alma Nursery, Farnham.

Centaurea candidissima (ragusina).

WHOLESALE PRICE.

WOOD AND INGRAM offer fine summer sown plants of the above, thoroughly established in thumb pots, at 20s. per 100; package, 3s. 6d. per 100, or 2s. for 50, not less than which will be sold at the price.

The Nurseries, Huntingdon.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000; and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.

Wonersh Nursery, Guildford, Surrey.

To the Trade.

TEA-SCENTED ROSES, in Pots.—Magnificent Plants, of best varieties only, at 9s. per dozen, or 60s. per 100. An immense Stock of all other plants worth growing. Catalogue free.

WILLIAM KNIGHT, Floral Nursery, Hailsham, Sussex.

VINES.—Black Hamburgh, Muscat of Alexandria, Black Alicante, and Lady Downe's, can still be supplied in thoroughly ripened Fruiting and Planting Canes.

JAMES DICKSON AND SONS, "Newton" Nurseries, Chester.

ENCEPHALARTOS CAFFRA.—Two large specimens of the above, in fine health, for Sale, with stems from 7 to 9 feet high, and 2½ to 3 feet in circumference, with fourteen leaves each. They are considered to be from 1500 to 2000 years old. Price moderate. Apply to

Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Hardy Perennials Illustrated

THOS. S. WARE'S CATALOGUE of the above for 1876, including New, Rare, and Choice Alpines, Herbaceous Plants, Aquatics, Bog Plants, and a few Bulbs, is now ready, free on application.

Hale Farm Nurseries, Tottenham, London.

GIANT ASPARAGUS PLANTS, the best that money can procure, all certain to grow, 2s. 6d. per 100. This delicious vegetable does not require half the expense usually incurred in planting it. See RICHARD SMITH'S SEED LIST for 1876.

Extra strong SEAKALE, 2s. per dozen.

RICHARD SMITH, Nurseryman, Worcester.

Sow Now.

YOUNG'S NONSUCH PEA.—The most abundant and perpetual bearing of all Marrowfat Peas. Half-pint trial packets free per post for 1s. 6d., per quart, 5s., through all Seedsmen, or of

CHARLES YOUNG, Balham Hill Nursery, S.W.

Important to Farmers.

SAMUEL FINNEY AND CO., SEED MERCHANTS and IMPORTERS, Newcastle-upon-Tyne, beg to inform Agriculturists and others that their FARM SEED LIST for 1876 is now ready, and will be forwarded post-free upon application.

Established more than a century.

To the Trade.

DICKSON, BROWN AND TAIT, SEED MERCHANTS, 43 to 45, Corporation Street, Manchester, can offer the following strong FRUITING VINES, viz:—Muscat of Alexandria, Lady Downe's Seedling, Madresfield Court, Gros Colman, &c. Prices, very low, on application.

CENTAUREA RAGUSINA, fine plants, established in single pots, 20s. per 100, cheaper out of pots. THYMUS CITRIODORUS AUREUS MARGINATUS, established plants from open ground, 3s. per 50; 5s. per 100; 21s. per 500; 40s. per 1000.

J. J. MARRIOTT, Highfield Nurseries, Matlock, Derbyshire.

Cinerarias—Hardy's Champion Strain.

H. J. HARDY has much pleasure in calling special attention to his splendid strain of Cinerarias now in bloom. Specimen flowers may be had free by post. Seed, 1s., 2s. 6d., and 5s. packets.

Stour Valley Seed Grounds, Bures, Essex.

Sarracenia Drummondi.

MR. WILLIAM BULL has lately received a large importation of this hitherto rare and beautiful plant, and in consequence can now offer it by the dozen or hundred at a moderate price. Also SARRACENIA PURPUREA by the dozen or hundred.

Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

The Best Lawn Mixture.

JAMES DICKSON & SONS' FINEST LAWN MIXTURE, for Forming New or Renovating Old Lawns, is VERY SUPERIOR to all others.

108, EASTGATE STREET, CHESTER.

PELARGONIUMS. — 200 dozen choice Show and Fancy varieties, to be cleared out: splendid plants, 13 Show and 12 Fancy for 21s.; 55 plants for 42s., H. W.'s selection, package included.

New Fringed Pelargoniums Queen Victoria, 2s. 6d.; Elegantissima, 2s. 6d.; Duchess of Edinburgh, 3s. 6d.

CATALOGUES free on application to

HENRY WALTON, Edgend Nurseries, Brierfield, near Burnley, Lancashire.

Pelargoniums, Pelargoniums.

JAMES HOLDER'S unrivalled Collection—strong healthy Plants, Show, French, and Fancy varieties, at 35s. per 100, cash, Hamper and Packing included. Extra strong plants, in 48's and 32's, at 9s. and 12s. per dozen, Basket and Packing extra.

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Fruiting and Planting Vines.

THE COWAN PATENTS' COMPANY (late Meredith) have still on hand a good selection of the above. Catalogues and prices on application. They can also offer good Fruiting and Succession PINES.

The Vineyard, Garston, near Liverpool.

This is the Time to Plant.

ASPARAGUS, 1-yr., 2-yr., and 3-yr. old Plants in any quantity. Very cheap. Price per 1000 on application to

E. JONES, Henley-on-Thames.

Trade Notice.

SYMPHYTUM ASPERRIMUM (true stock) is supplied to the Trade, together with Circulars, on very advantageous terms. It is especially adapted for heavy clay lands and deep sands, where hardly any other crop can be produced.

THOMAS CHRISTY AND CO., 155, Fenchurch Street, London, E.C.

Special Offer.

LOBELIA PUMILA MAGNIFICA (New), acknowledged by all to be the finest Lobelia extant, and which for Carpet Bedding, Ribbon Bordering, or for the decoration of the Conservatory is unsurpassed. Colour, fine deep blue, flowers large, of great substance, very free flowering and strong grower.

RICHARD BIGGS has to offer many thousands of the above; small plants, per 100, 5s.; from single pots, with plenty of cuttings, per dozen, 4s. Post-free on receipt of stamps. Post-office Orders payable at the Ladywell Post-office.

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New and Genuine Seeds Only.

Now ready, gratis and post-free,

BRUNNING AND CO.'S New Illustrated and DESCRIPTIVE CATALOGUE of the above for the present season, containing a selection of the choicest novelties, together with the most approved older varieties, profusely Illustrated, and contains a splendid Coloured Plate representing a group of choice Hybrid Gladioli, for the growth of which their Nurseries are noted. Forwarded post-free to all applicants.

ISAAC BRUNNING AND CO., The Yarmouth Seed Establishment, 1, Market Place, Great Yarmouth.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of

WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

SPECIAL OFFER.—12 New FUCHSIAS of 1875, for 4*s.*; 12 choice older sorts, 2*s.* 6 New CHRYSANTHEMUMS of 1875, 2*s.*; 12 Varieties of 1874, 2*s.* 6*d.* 12 New GERANIUMS of 1875 (Pearson's), 9*s.*; 12 new varieties of 1874, 4*s.*; 12 choice older sorts for pot culture, 3*s.*; 12 Bronze Geraniums, 3*s.* COLEUS, all good sorts, 2*s.* per dozen. HELIOTROPES, mixed, rooted cuttings, 1*s.* per dozen. PANSY, Cloth of Gold, 2*s.* 6*d.* per dozen, 16*s.* per 100; Great Eastern, 2*s.* 6*d.* per dozen; 12 choice named varieties, 3*s.* The above are all fine healthy plants, and package free for cash with order.

J. LEIGH, Sandy Lane Nursery, Lowton, near Newton-le-Willows, Lancashire.

CHRYSANTHEMUMS.—Strong young plants of all the leading kinds, including Beverley, Golden Beverley, Mrs. Geo. Rundle, Mr. Geo. Glenny, Empress of India, Jardin des Plantes, Prince and Princess of Wales, Guernsey Nugget, Hero of Stoke Newington, Marchioness of Lorne, Elaine, Fair Maid of Guernsey, Gloire de Toulouse, Emperor Nicholas, Oracle, The Sultan, Apollo, Chang, Bronze and Red Dragon, &c.

Purchaser's selection, 6*s.* per dozen; our own selection, 4*s.* per dozen.

T. JACKSON AND SON, The Nurseries, Kingston-on-Thames.

BEDDING VIOLAS for the MILLION.—Perfectly hardy, easily propagated, flower from April to October. 100 in 12 distinct named sorts for 20*s.*, 50 for 12*s.* 6*d.*, 25 for 7*s.* Also Prize Show and Fancy PANSIES and PHLOXES, own selection, 6*s.* 6*d.* per dozen. Sent free by post to all parts of the United Kingdom on receipt of post-office order.

DICKSONS AND CO., Nurserymen, Seedsmen and Florists, 1, Waterloo Place, Edinburgh. Established 1770. New Nurseries at Pilrig Park.

J. LINDEN'S Horticultural Establishment and Establishment for the Introduction of New and Rare Plants, Ghent, Belgium. The CATALOGUE of STOVE and GREENHOUSE PLANTS is now ready, and may be had gratis and post-free.

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Bulbous or Tuberous Begonia Seed.

L. PAILLET, NURSERYMAN, Chatenay, near Paris, offers for the present season, from his own growth, and cropped on the very best varieties known, seeds of the said BEGONIAS at the following rates:—Per packet containing 1 gramme, 6*s.*; per packet containing 5 grammes, £1 5*s.*

Seeds of CLEMATIS, cropped on the best varieties known, such as Helena, Sophia, Jackmanni, lanuginosa, Lady Bovill, magnifica, and others:—Per packet containing 30 grammes, 8*s.*; per packet containing 100 grammes, £1 4*s.* (One gramme represents 1-28th of an ounce.) CLEMATIS from Seed, fine mixed varieties of all kinds, 3 to 4 years old, £2 per 100.

N.B.—Orders may be addressed directly to L. PAILLET, or his Agents, Messrs. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C., where CATALOGUE and List may be had on application.

To Farmers, Gardeners, and Others.

SEAKALE, for planting out, 4*s.* per 100; RHUBARB ROOTS, Sovereign, best and earliest in cultivation, 6*s.* per dozen; for planting out, 1*s.* per dozen. SAGE and THYME ROOTS, 5*s.* per 100. Best Show POLYANTHUS, 8*s.* per 100. DELPHINIUMS, splendid mixed colours; New PYRETHRUMS, handsome, mixed colours; AURICULAS, not in pots; Double Yellow WALLFLOWERS: all at 2*s.* per dozen. White Spanish ONION SEED, 1*s.* 8*d.* per lb. JACKSON'S WHITE POTATOS (I believe the heaviest cropper in England), 8*s.* p cwt. Terms, cash.

RICHARD WALKER, Market Gardens, Biggleswade.

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CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.

Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following:—

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SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
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AGENTS WANTED.

Cheap Plants.

WILLIAM BADMAN offers the following cheap Plants for present potting:—

VERBENAS, Purple, Scarlet, White, Rose, Crimson, &c., best bedding sorts, healthy, hardy stuff, 6*s.* per 100, 50*s.* per 1000; also 20 fine named varieties, 8*s.* per 100.
CALCEOLARIA, Golden Gem and aurea floribunda, 5*s.* per 100, 40*s.* per 1000.
LOBELIA SPECIOSA (true), from cuttings, sturdy plants, 3*s.* per 100, 20*s.* per 1000.
HELIOTROPE, finest dark sorts, 6*s.* per 100.
PELARGONIUMS, Scarlet, White, Pink, Crimson, best sorts, from single pots, 1*s.* 6*d.* per dozen, 10*s.* per 100.
IRESINE LINDENI, fine crimson-leaved bedding plant, 6*s.* per 100.
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VESUVIUS, the best Scarlet Pelargonium for pots or beds, good plants, 1*s.* 6*d.* per dozen, 10*s.* per 100.

Package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

CHOICEST NEW FLOWER SEEDS. Carriage post-free.

The choicest strains of the following—

CALCEOLARIA, CINERARIA, PRIMULA, CYCLAMEN, POLYANTHUS, AURICULA — All in 1*s.* 6*d.*, 2*s.* 6*d.*, or larger packets.

Choice GERMAN and ENGLISH FLOWER SEEDS, in Collections:—No. 1, 10*s.* 6*d.*; No. 2, 15*s.*; No. 3, 21*s.* No. 4, 30*s.*; No. 5, 42*s.*

Choice Hardy Annuals, Half-Hardy Annuals, Biennials and Perennials, | Choice Ornamental Grasses, Everlasting Flowers, &c. &c.

Descriptive PRICED CATALOGUE post-free on application

JAMES DICKSON & SONS,
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CHOICE FLOWER SEEDS,

FREE BY POST OR RAIL.

Sutton's Collections of Choice Flower Seeds, to produce a beautiful and continuous display during Summer and Autumn.

No. 1 Collection,	Free by Post or Rail	..	£2	2 0
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No. 3 Collection	,,	,, ..	1	1 0
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Small and Useful Collections can also be had, from 2s. 6d. to 7s. 6d. Free by Post.

Complete Instructions as to the Cultivation of Sutton's Choice Flower Seeds will be found in

"SUTTON'S AMATEUR'S GUIDE,"

The most practical work on gardening yet published, beautifully illustrated with 300 engravings.

Price 1*s.*, post-free for 14 stamps. Gratis to Customers.

TO OBTAIN THE

Best Garden Lawns and Croquet Grounds

SOW

SUTTON'S LAWN GRASS MIXTURE,

Which forms a close velvety turf in a very short time. For making New Lawns or Croquet Grounds 3 bushels or 60 pounds is required per acre, or 1 gallon to every 6 rods (or perches) of ground.

For improving those already in turf, 20 pounds should be sown per acre.

March, April, and May are the best months for sowing.

Price 1s per lb.; 20s. per bushel.

From Mr. J. MERRICK, *Gardener to* S. Forster, Esq., *Le Court.*

"The Seed you sent me last year turned out uncommonly well. Several gentlemen who came to Le Court could scarcely credit, from the appearance of the lawn, that it was only sown in May. In August it was as fine and thick as I have seen some lawns that had been laid down for three years."

Instructions on the Formation and Improvement of Garden Lawns and Croquet Grounds Gratis and post-free.

THE QUEEN'S SEEDSMEN, READING.

PLANT NOW.

PORTUGAL LAURELS, 3 feet, 40*s.*; Common ditto, 4 to 5 feet, 30*s.*; Scarlet Flowering CHESTNUT, 10 to 12 feet, Standards, 60*s.*; BIOTA COMPACTA, 4 to 5 feet, 60*s.*; CUPRESSUS LAWSONI, 3 to 4 feet, 50*s.*; THUJA GIGANTEA, 4 feet, 60*s.*; HOLLY, 1½ foot, 20*s.*; YEWS, 1½ foot, 20*s.* per 100; White American SPRUCE, 3 to 4 feet, fine, 30*s.* per 100. All very fine.—J. JACKSON, Nursery, Kidderminster.

CALCEOLARIAS.—Bedding Calceolarias, in six distinct and finest varieties, including the splendid new and choice Princess Louise, Dark Gem, Aurantia, Golden Gem, &c., all correctly named and carefully packed. Free on rail at Belper at 1*s.* per dozen, 8*s.* per 100, 70*s.* per 1000, or post-free for 4*d.* per dozen extra.

S. B. SHEPPERSON, Prospect House, Belper.

SILVER VARIEGATED GERANIUM, "Little Trot." The best Silver Variegated ever offered for Edging or Carpet Bedding. SILVER TRICOLORS, Eva Fish and Lass o' Gowrie.

Price per 100 or 1000 of the above on application

W. POTTEN'S CATALOGUE of BEDDING PLANTS will be sent post-free to all applicants.

Camden Nursery, Sissinghurst, Staplehurst, Kent.

To the Trade and Large Growers.

POTATOS.—Several Tons of Compton's Surprise, just imported, splendid sample and true, 15*s.* per sack of 168 lb.

D. BRINKWORTH AND SONS, Importers, 4, 7, and 58, Oxford Street, Reading, Berks.

Cranston's Nurseries (Established 1785).

TEA-SCENTED ROSES.—20,000 strong, well hardened plants, in 5½-inch pots.

April and May are the best months for Bedding or Planting-out the Tea-scented, China, Noisette, and all Roses on their own roots. Selections, left to us, from 12*s.* to 15*s.* per dozen.

Descriptive Priced LISTS on application to
CRANSTON AND MAYOS, Hereford.

Cedrus Deodara, 10 to 15 and 20 feet high.

WM. MAULE AND SONS now offer at this most favourable season for Planting—April and May—magnificent trees, at 10*s.* 6*d.* each, well-rooted, with good balls, from large pots. For Screens, Blinds, and immediate effect as an Evergreen Tree they are both Ornamental and Useful.

The Nurseries, Bristol.

SEED POTATOS.—The following, to be sold for Cash, are free from disease, true to name, and grown on Light Soil:—

Rivers' Royal Ashleaf Kidney,	Early Coldstream,
Lapstone Kidney,	Early Shaw,
Gloucestershire Kidney,	Early Oxford,
Belgian Kidney,	Myatt's Prolific,
Dean's Improved Ashleaf Kidney,	Fox's Seedling,
	American Early Rose,
Red Maccaroni Kidney,	Headley Nonpareil

Also the leading varieties of the New American kinds.

Price on application to
D. HEFFERMAN, Nurseryman, Egham, Surrey.

Orchids at Unprecedentedly Low Prices.

MR. WILLIAM BULL is constantly receiving Importations from his Collectors and Correspondents abroad, and offers the following at the low prices annexed:—

PLEIONE HUMILIS, good flowering bulbs, 3*s.* 6*d.* each; if a dozen are taken, 3*s.* each; if 50 are taken, 2*s.* 6*d.* each. A dozen would make a good specimen. The usual price of this hitherto rare Orchid has been 2 guineas each.

PLEIONE MACULATA, same prices as the above.

CŒLOGYNE CORYMBOSA.—This is probably the first time this handsome species has ever been seen in England in a living state. 10*s.* 6*d.* each, 4 guineas per dozen.

DENDROBIUM MARMORATUM, 7*s.* 6*d.* each, £3 per dozen.

DENDROBIUM CAMBRIDGEANUM, 7*s.* 6*d.* each, £3 per dozen.

Mr. W. B. has also lately imported some splendid plants of the rare ODONTOGLOSSUM LINDENI, only a few plants of which previously existed in this country, 15*s.* each, 6 guineas per dozen.

For other Orchids at unprecedentedly low prices, *vide Gardeners' Chronicle* for March 25, p. 393.

Establishment for New and Rare Plants, King's Road Chelsea, London, S.W.

NEW VERBENAS (ECKFORD'S). The finest ever yet offered. See
JOHN KEYNES' CATALOGUE, 1876.

NEW ROSES, 1876. Selected varieties. See
JOHN KEYNES' CATALOGUE, 1876.

LETTY COLES (KEYNES')—the ROSE of the season—Will be sent into commerce the first week in May. All particulars, consult
JOHN KEYNES' CATALOGUE.

NEW DAHLIAS for 1876. Keynes' grand flowers. See
JOHN KEYNES' CATALOGUE for 1876.
Castle Street Nursery, Salisbury.

AVENUE TREES.

	Girth 4 ft. from ground.
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10 inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8 ,,
MAPLES, Norway, 12 to 16 feet high ..	5 to 8 ,,
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10 ,,
,, Scarlet, 10 to 14 feet high	8 to 10 ,,
,, Double, 10 to 14 feet high	8 to 10 ,,
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10 ,,
ELMS, 15 to 18 feet	7 to 9 ,,

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.

Knap Hill Nursery, Woking, Surrey.

GRAPE VINES. — Dr. Hogg, Waltham Cross, Ferdinand de Lesseps, Duke of Buccleuch.
H. LANE AND SON can supply strong Canes of the above at 7s. 6d. each; also a few of the older kinds.
The Nurseries, Great Berkhamsted.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham, will be glad to send their CATALOGUE for this season on application. The stock of the undernamed, in best sorts and good plants, is very large and fine —

	Per doz.	P. 100
	s. d.	£ s.
Antirrhinums	3 6 .. 1 5	
Ageratums	2 0 .. 0 12	
Chrysanthemums	3 0 .. 1 0	
Carnations and Picotees, single plants	6 0 .. 2 5	
,, pairs	11 0 .. 3 15	
Clematis	15 0 .. 5 0	
Calceolarias	1 0 .. 0 8	
Coleus	3 0 .. 1 1	
Carpet Bedding Plants	1 6 .. 0 10	
Daisies, various colours	1 0 .. 0 5	
Fuchsias	3 0 .. 1 0	
Geraniums, Tricolor	3 6 .. 1 5	
,, Bicolor	3 6 .. 1 5	
,, Zonal and Nosegay, in sorts for pots	3 0 .. 1 1	
,, autumn struck, for bedding, out of pots	2 0 .. 0 15	
Heliotropes	2 6 .. 0 18	
Iris germanica	3 0 .. 1 0	
Lobelias	1s. to 2 0	6s to 12
Succulents	6 0	
Greenhouse plants	12s. to 18 0	
Stove plants, 12s. to	18 0	
Tree Carnations	12 0	
Echeveria secunda glauca	2 0 .. 12 0	
Delphiniums, seedlings, bloomed last year	3 6	
Spiræa japonica, ditto	9 0	
Rock plants	3 0 .. 1 0	

	Per doz.	P. 100.
	s. d.	£ s.
Pansy Mrs. Felton, the best white	3 0 .. 18 0	
,, Clevedon, Purple and C. Blue	2 0 .. 12 0	
Viola, Golden Perpetual, the best yellow	2 0 .. 12 0	
Pelargoniums, 6s. to	9 0	
Herbaceous plants	3 0 .. 1 0	
Pelargonium Queen Victoria	18 0	
Pansies, show	3 6 .. 1 5	
,, bedding	2 0 .. 0 15	
Pinks	3 6 .. 1 5	
Pæonies	12 0 .. 4 10	
Pentstemons	3 6 .. 1 5	
Pyrethrums	10 0	
Salvias	3 0 .. 1 1	
Sedums	3 0 .. 1 1	
Saxifrages	3 0 .. 1 1	
Violas	1 6 .. 0 10	
Violets	2 6 .. 0 18	
Roses in Pots, H.P.'s	12 0 .. 4 10	
Hardy Climbing plants, in pots	12 0	
Dactylis elegantissima	1 0 .. 4 6	
Begonias	4 0	
Achimenes	2 6	
Dracæna terminalis and Cooperi	18 0	
Caladiums	15 0	
Epiphyllums	12 0	
Phloxes	3 6 .. 1 5	
Sempervivums for edging	2 0 .. 0 12	
Double Sweet Williams	3 0 .. 1 0	

NEW PELARGONIUMS.

PELARGONIUM WONDERFUL.

In offering this remarkable and beautiful Pelargonium, GEORGE SMITH has much confidence in recommending it as in every way adapted to all classes of growers, and must become a favourite with all, on account of its superior qualities, both for bedding, exhibition, and all decorative purposes. The colour is a most intense orange-scarlet; it is semi-double, with large trusses of flowers on a strong footstalk, the pips large, of great substance, and extraordinary for its lasting qualities, as it does not drop its petals when exposed to the weather, as in other varieties, thus supplying a want that has long been felt, making it at once the very best flower for bedding. Retaining, as it does, such a number of flowers, the effect will be very grand; it is also particularly suited for the choicest bouquet, as the flowers do not shake off. Its habit leaves nothing to be desired, being exactly the same as Vesuvius, which is its parent, and retaining all its parent's free-blooming qualities and beautiful foliage. It is the opinion of all practical judges that it must create quite a sensation, and be the most sterling flower offered for 1876.

Was awarded a First-class Certificate by the Royal Horticultural Society, and considered by every member of the Floral Committee present to be a flower of great merit.

The *Gardeners' Chronicle*, July 24, in its report of the meeting, speaks of Wonderful—"As quite the finest thing in its way yet introduced."

The *Gardeners' Chronicle*, Oct 9, in noticing plants exhibited, says:—"Mr. Smith's Pelargonium, Wonderful, must become a grand market plant."

The *Gardeners Magazine*, October 9, says:—"Mr. Smith exhibited a splendid scarlet double Zonal, one of the best of its class at our command."

The *Gardeners' Oracle* for 1876, speaking of new plants, says:—"Wonderful (George Smith's), semi-double, dwarf in habit, and very free flowering; trusses of medium size; colour brilliant scarlet. A sport of Vesuvius, differing only in the doubleness of the flowers, and, therefore, of immense value."

The *Gardeners' Magazine*, Feb. 26, 1876, speaking of new flowers of the past year, says:—"The buyers of George Smith's Wonderful will do well to buy largely and make stock at once, for there is no more proving to be done for the determination of its value as a winter flowering plant—it has proved of greater value than any other double Zonal in the lists; and as a summer bedder it comes nearest to that every practitioner of bedding is for ever in search of than any other plant we know."

For a beautiful coloured drawing, by Mr. W. G. Smith, see the *Floral Magazine* for December, 1875.

10s. 6d. per plant.
Where 6 are ordered 7 will be sent.
,, 12 ,, 15 ,, ,,
,, 24 ,, 30 ,, ,,
The above, a third off to the trade, and where 50 or more taken, at half price.

PELARGONIUM EVENING STAR (SMITH'S). — This new and beautiful flower is most attractive and unique, having a white ground with large pink eye, giving it a very striking appearance. The flower is of great substance, smooth, and a fine truss; the foliage a light zone, and plant of good habit. This is in every way a first-class flower, and no collection will be complete without it. 7s. 6d.

PELARGONIUM DREADNOUGHT (SMITH'S).—A most distinct and beautiful variety; colour rich peach-blossom, with white eye. The colour is particularly rich and fine, the pips are large, with fine truss; a very free bloomer, and good habit. It is in every way first-class, and will prove a great acquisition. 7s. 6d.

The three new Pelargoniums will be sent out on and after May 18.

Cheques or Post-office Orders, made payable at Hornsey Road, to George Smith, to accompany all orders from unknown correspondents.

GEORGE SMITH, Tollington Nursery, Hornsey Road, London, N

SIXTY THOUSAND ROSES IN POTS,

From 12s. to 18s. per dozen; £5 per 100.

Roses, extra fine, established in 6-inch pots, for Greenhouse Culture or for Planting out in Conservatory, at 30s. per dozen.

ALL THE BEST NEW ROSES for 1876 at 30s. per dozen.

DESCRIPTIVE CATALOGUES ON APPLICATION.

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WM. WOOD & SON,

THE NURSERIES, MARESFIELD, UCKFIELD, SUSSEX.

ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, April 19, at half-past 12 o'Clock precisely, a Collection of ESTABLISHED ORCHIDS, including the following:—

ODONTOGLOSSUM TRIUMPHANS,
LÆLIA ANCEPS BARKERIANA,
AERIDES LOBBII,
VANDA SUAVIS,
BOLLEA LALINDEI,
,, PATINII,
CYPRIPEDIUM HARRISIANUM,
,, SEDENI,
,, DOMINIANUM,
,, SCHLIMII,
,, PARDINUM,
,, VITTATUM,
PESCATOREA ROEZLII,
ODONTOGLOSSUM SCEPTRUM,
ADA AURANTIACA,
VANDA CŒRULEA,
ODONTOGLOSSUM CIRRHOSUM,
,, BLANDUM,
ONCIDIUM MACRANTHUM,
,, SUPERBIENS,
CYMBIDIUM EBURNEUM,
CATTLEYA MENDELII,
,, TRIANÆ SPLENDENS,
UTRICULARIA MONTANA,
PHALÆNOPSIS LEUCORRHODA, flowering,
AERIDES RUBRUM,
CATTLEYA ELDORADO SPLENDENS,
LÆLIA WALLISII,
ONCIDIUM FORBESII, in flower.
BATEMANNIA WALLISII,
,, BURTII,
EULOPHIA GUINEENSIS,
CALANTHE VEITCHII,
SOBRALIA FLORIBUNDA,
CATTLEYA DOLOSA,
ONCIDIUM BALDERRAMÆ,

Some very fine plants of SACCOLABIUMS, such as GUTTATUM, BLUMEI MAJUS, RHEEDII, GIGANTEUM, RETUSUM; a few plants of the exceedingly rare ODONTOGLOSSUM BLANDUM, and some fine plants of ONCIDIUM AMPLIATUM MAJUS, with many other beautiful and choice kinds.

At the same time will be Sold an Importation, just received *ex* S.S. *Duke of Sutherland*, from India, of plants of DENDROBIUM BARBATULUM, one of the prettiest of Dendrobiums: flowers pure white and sweet-scented like Violets; also an importation of DENDROBIUM HEYNEANUM: the flowers of this are a light buff colour.

On view the morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

ODONTOGLOSSUM CIRRHOSUM.

MR. J. C. STEVENS has received instructions from Mr. WILLIAM BULL to Offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, April 24, at half-past 12 o'Clock precisely, about 200 plants of the new and marvellously beautiful ODONTOGLOSSUM CIRRHOSUM. A plant of this extremely handsome new introduction has just flowered for the first time, and was exhibited at the Royal Horticultural Society's Meeting on Wednesday, the 5th inst., when it elicited unusual admiration, and was unanimously awarded the First-class Certificate it so justly merited. The flower-spikes are branched, bearing from twenty to thirty pure white, purple-spotted flowers; the sepals and petals have undulated margins, and their apices are drawn into long tapering points. The lip is yellow at the base, boldly streaked with rich dark brown, and the crest is whitish and two-lobed. The flowers may be likened to those of "O. nævium," but are fully three times larger than those of that species.

On view the morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

NOW READY,

NURSERY CATALOGUES FOR 1875-76.

WILL BE SENT POST FREE UPON APPLICATION.

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EDINBURGH,

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BUSINESS ESTABLISHED, 1770.

NEW STRIPED ROSE,

BEAUTY of GLAZENWOOD.

A Hybrid Tea of a most distinct and novel kind, unlike any other variety already known, and may possibly prove to be an entirely new genus. The ground tint is a lovely golden-yellow, darker but after the style of "Madam Falcot," each petal being distinctly striped and flaked with a bright carmine, as often seen in the coloration of some Tulips, the buds before expanding being boldly and beautifully marked with crimson. The foliage is grand, of a beautiful light satiny green, the serrated edges being marked with red. The odour is delicately sweet, as in the generality of Tea Roses. The flower is of good shape and build, with plenty of petals; the flower-buds pointed and very handsome. It is impossible to convey by description the marking and beauty of this charming Rose, but it is without doubt the most striking novelty introduced for years.

"A Rose of golden-yellow, striped and flaked with scarlet or vermilion, sounds like a dream or a fairy tale. It is nevertheless a reality." H. CURTIS, *in the "Garden."*

Figured in the *Floral Magazine*, Plate 174.

Coloured Plates, 1s. each. Strong Plants in Pots, 21s. each. The usual discount to the Trade.

LEWIS WOODTHORPE,

GLAZENWOOD NURSERY, BRAINTREE, ESSEX.

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CHANGE OF SEED.

JAMES CARTER & CO.

ARE PREPARED TO SUPPLY THE FOLLOWING POPULAR AND CHOICE VARIETIES AT GREATLY REDUCED RATES PER HALF-TON OR TON.

English Varieties.

	Per bushel—s. d.
Carter's Main Crop	12 0
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Myatt's Ashleaf	12 0
Walker's Regent	9 6
Paterson's Victoria	10 6
Hundredfold Fluke	14 0
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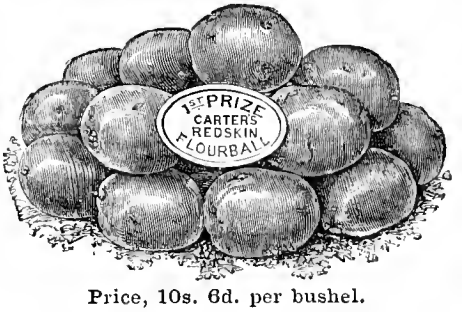

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	Per bushel—s. d.
Early Rose	10 6
Late Rose	14 0
Vermont Beauty	12 6
Compton's Surprise	12 6
Peachblow	14 0
Bresee's Prolific	12 0
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FERNS, Tree and other choice, &c., &c.

The above are all fine Plants and in the most perfect health, and at very moderate prices.

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ORCHIDS, ORCHIDS, ORCHIDS.

W. F. BOFF

Offers Orchids, good sorts, nice plants, at 21s., 30s., and 42s. per dozen.

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FINE NAMED LEADING KINDS, 1½ to 3 feet, from £7 10s. to £10 10s. per 100.
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All the above are very fine bushy, well grown plants, and are offered very cheap to effect a clearance.

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" " MAIDEN'S BLUSH, Double-flowered, 5s.
"LUCY GRIEVE" PEAR, First-class Certificate, see above Catalogue.
VINES and BULBOUS-FLOWERED ROOTS, suitable for this Season's Planting and Bloom: see the Catalogue.

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Having imported and grown largely of this splendid new variety last season we are in a position to offer fine English-grown seed tubers at the following rates:—

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Per pound	0	6
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Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices:—

3 feet high, 2½ feet in circumference, 30s. per doz.
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Superior quality; Carriage free
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CAMELLIAS.—2000 ready in autumn.
CATALOGUES on application to
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Azalea, "Beauty of Surrey."

F. AND A. SMITH'S extensive Collection of Specimen and other AZALEAS is now in bloom, including the above-named variety, which is the finest Single White in cultivation, to which was awarded a First-class Certificate by the Royal Horticultural Society. An inspection is solicited.
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JAMES SMITH, Darley Dale Nurseries, near Matlock, offers the following:—
10,000 CUPRESSUS LAWSONIANA, 15 to 18 inches, 3s. per dozen, 18s. per 100; 2 to 3 feet, 5s. per dozen, 30s. per 100; 2½ to 3½ feet, 6s. per dozen, 40s. per 100; 3 to 4 feet, 9s. per dozen, 65s. per 100, also larger plants.
5,000 CRYPTOMERIA ELEGANS, a fine Conifer from Japan, perfectly hardy—15 to 18 inches, 8s. per dozen; 1½ to 2 feet, 10s. per dozen; 2 to 3 feet, 15s. per dozen; 3 to 4 feet, 22s. per dozen. Also CRYPTOMERIA JAPONICA and LOBBII, of various sizes
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10,000 ARBOR-VITÆ, American, of various sizes, an excellent plant for Hedges; also LOBBII and others.
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BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per truck.
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GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.
Sold Retail by Seedsmen, in boxes, 1s., 3s., and 10s. 6d. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

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Manufacture the highest quality of
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For the removal of all
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By all Seedsmen and Nurserymen, and wholesale by the sole agents for England.
TRADE PRICE ON APPLICATION.
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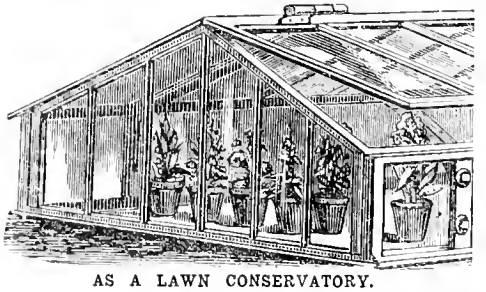

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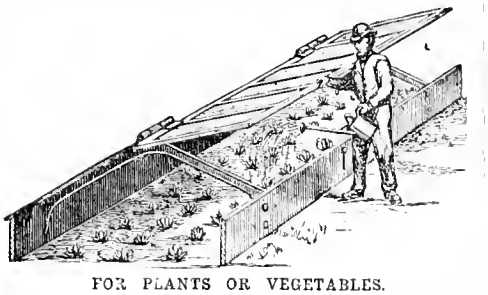

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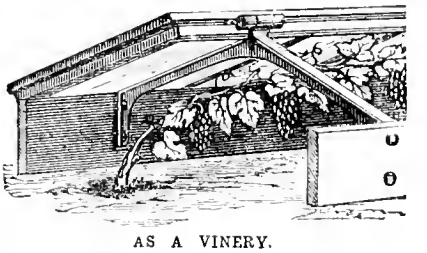

AS A VINERY.

The Judges at the Royal Horticultural Society's Great Meeting lately held at Birmingham, pronounced these Patent Plant Preservers and Ground Vineries to be by far the best and most useful articles of the kind they ever saw, and awarded them the ONLY PRIZE.

Instead of having to remove or slide loose glass every time it is necessary to attend to the plants, we attach the glazed lights (21-oz.) with hinges to the frame of each light, thereby doing away with continual breakage of glass and loss of time. Two men can instantly remove a complete length, 12 ft. by 4 ft. wide; thus proving them to be really portable. They are made in the following sizes. One pair of ends is sufficient for any number of lengths, if set in a continuous row.

Cash Prices carriage paid to any Station in England on Orders amounting to 40s. and upwards.

	Price.	Ends per pair extra.
6 feet long by 2 feet wide	£1 5 0	.. 5s. 0d.
12 feet long by 2 feet wide	2 10 0	.. 5s. 0d.
6 feet long by 3 feet wide	1 15 0	.. 7s. 0d.
12 feet long by 3 feet wide	3 5 0	.. 7s. 0d.
6 feet long by 4 feet wide	£2 6 0	.. 8s. 6d.
12 feet long by 4 feet wide	4 4 0	.. 8s. 6d.
12 feet long by 5 feet wide	5 10 0	.. 10s. 6d.
12 feet long by 6 feet wide	7 0 0	.. 12s. 0d.

Lawn Conservatories, with Glass sides and ends, 12 feet long by 4 feet wide, £7 5s.; 12 feet long by 5 feet wide, £8 15s.; 12 feet long by 6 feet wide, £10.

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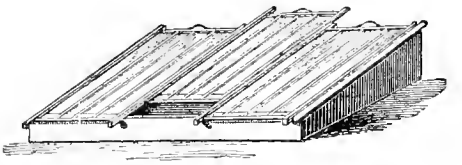

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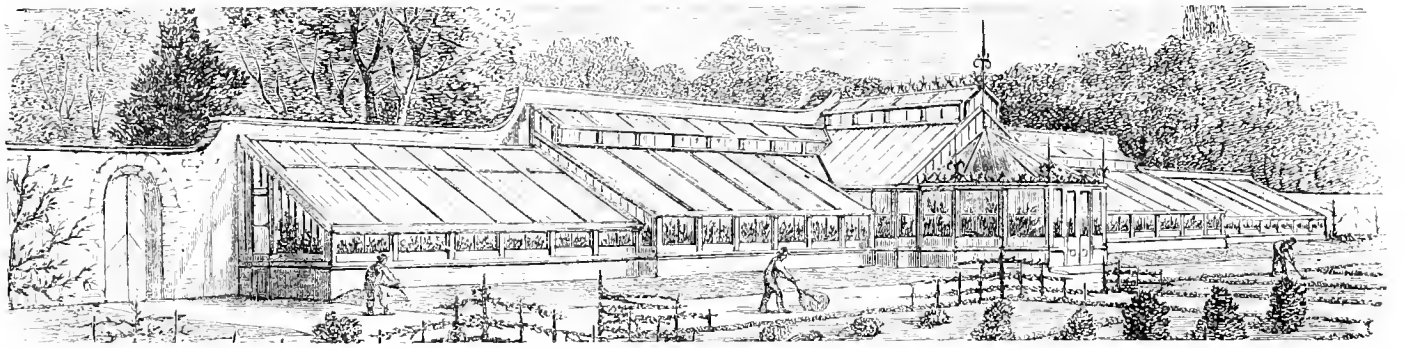

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CARUMBIUM POLYANDRUM,
CHAMÆDOREA FORMOSA,
COPROSMA BAUERIANA PICTURATA,
CRINUM ORNATUM RUBRO-VITTATUM,
CROTON BISMARCKI,
,, CONCINNUS,
,, CONTORTUS,
,, MACAFEEANUS,
,, MORTII,
,, PICTURATUS,
,, ROYAL PRINCE,
,, TRILOBUS ALBERTII,
,, TRILOBUS DISRAELI,
,, TRILOBUS LORD CAIRNS,
,, TRILOBUS TRAVELLER,
DIEFFENBACHIA AMABILIS,
,, FLAVO-VIRENS,
,, ILLUSTRIS,
,, LANCEOLA,
,, MACULOSA,
,, VITTATA,
DRACÆNA AMBOYNENSIS,
,, AMŒNA,
,, COCCINEA,
,, EBURNEA,
,, REX,
,, ROSACEA,
,, STELLA,
,, VIRGINALIS,
ERANTHEMUM TRICOLOR,
GEONOMA CARDERI,
GRIFFINIA ORNATA,
GUSTAVIA GRACILLIMA,
HIBISCUS (ROSA-SINENSIS) BRILLIANTISSIMA,
ISOLOMA MOLLIS,
IXORA REGINA,
MACROPIPER EXCELSUM AUREO-PICTUM,
MECONOPSIS WALLICHII,
ODONTOGLOSSUM CIRRHOSUM,
PESCATOREA ROEZLII,
PHYLLANTHUS ATROPURPUREUS,
PITCAIRNIA PLATYPHYLLA,
POLYGONUM TOMENTOSUM,
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RICHARDIA MELANOLEUCA,
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SATURDAY, APRIL 15, 1876.

EVERLASTING FLOWERS.

THE late period at which Easter has fallen this season has been the theme of some comment and speculation in the columns of our contemporaries, and it was feared by some that the Calendar had got twisted out of its normal state. Whether any advantages accrue from a late or an early Easter is a question which must be left to the fashionable world. On thing is certain, that as it is the floral season *par excellence* of the Romish Church and its imitators, the later it falls the better chance there is of obtaining freshly-cut flowers in greater abundance and at lower prices than would prevail at a much earlier period. All the well-known spring flowers are laid under contribution, and where these fail, or the resources are not equal to the demand, the so-called "everlastings" which are so extensively trafficked in at Christmas, are again brought into requisition. Indeed, many of those used in Germany as everlastings are not sufficiently known in this country, and might be advantageously used at other seasons as well as that of Christmas. It is with this view and for the purpose of pointing out other plants for decorative purposes that we again refer to the subject which was opened at p. 771 of our last volume.

Though much larger quantities of these dried flowers are used in this country than formerly, and an infinitely greater variety is now to be obtained, there seems no reason why a still further variety in species should not be introduced. There are many flowers belonging to widely distinct natural orders quite suitable for drying for this purpose, and there are also many others belonging to the Composite order, besides those seen in commerce, which might be used with advantage. It is to the Compositæ principally that we must look for any new additions to those already known, not so much on account of the ease with which they are dried in the first place as for their durability, owing to the persistence of their involucral bracts, for it is to these more than to the actual florets that the beauty of the everlastings is due. The bulk of those furnishing the flowers usually sold are natives of warm countries, as South Africa and Australia, but many of them are very easily cultivated in this country, and are grown to a very great extent in Southern France and Germany, from whence immense quantities are sent to our large London houses. All over the Continent they are extensively used for bouquets, wreaths, or for general floral decorations, and are grown chiefly in the neighbourhood of Erfurt.

Helichrysum.

Nearly all the species of Helichrysum, which are natives chiefly of South Africa and Australia, are eminently suitable for drying. The French *immortelle* with small yellow flowers is furnished by Helichrysum orientale, a native originally of Crete and Africa, but now introduced and largely cultivated in Continental Europe entirely for the sake of its flower-heads, which are gathered early in the season when they are only half opened, and dried by suspending them head downwards. In the South of France, where it is said that the species is most largely cultivated, the

harvest in these flowers realises from about £30 to £60 per acre. It will, no doubt, have been noticed that these particular yellow flowers are always of a more uniform size than those of other colours, and that the imbricated scales of the involucre are not crumpled or broken, as is mostly the case with the black, red, crimson, orange, or green; this arises from the fact of the yellow being the natural colour, while the colours above enumerated are artificially imparted, in the process of which the flower-heads get injured. For exportation they are made up into bunches, which are finally packed in boxes, containing for the most part one hundred such bunches.

In the species of Helichrysum the imbricated involucre gives the flower-heads a very elegant appearance; even when dry they retain their forms and their colours, which are either yellow, white, crimson, or pink. The genus contains a large number of species, several of which are in cultivation in this country as ornamental plants, notably H. bracteatum, H. apiculatum, and others. These are Australian species, the former producing flower-heads measuring about an inch across, and varying in colour from yellow to white, crimson, pink, &c. The plant is an erect branching perennial, growing from 1 to 2 feet high, occurring all over Australia, and is abundant in marshy situations in Tasmania. H. apiculatum is a perennial or annual, growing to about the same height as the last-named species, and covered with a soft silvery tomentum. The flower-heads are in dense terminal corymbs, and the involucral bracts are small and very numerous, mostly of a bright golden colour, but in some forms they are straw-coloured, red, brown, pink, or pure white. This plant, like the preceding, is widely distributed in Australia, and the flower-heads are quite equal to, or even perhaps more beautiful in appearance than, those of H. orientale. Considering the variety, beauty, and permanence of the flowers of most of the species of this genus, it is surprising that many more of them are not cultivated than is actually the case. Amongst other Australian species suitable for adding to and varying the list of everlastings already known may be mentioned the following:—

Helichrysum Lawrencella (Lawrencella rosea), of which the flower-heads, borne on long peduncles, vary in size, and are either pink or white in colour. H. Baxteri has terminal and solitary flower-heads, with a broadly-hemispherical involucre often more than an inch in diameter; the bracts tinged with brown, passing into straw colour or pure white. In H. scorpioides the involucre is broadly hemispherical, from three-quarters of an inch to an inch in diameter, with numerous spreading bracts of a bright yellow colour, the outer and shorter ones tinged with brown. This, before becoming fully expanded, forms fine globular heads like shining golden balls. H. obtusifolium has a hemispherical involucre, measuring from half an inch to an inch or more in diameter. The outer or shorter bracts are brown, the inner ones white, or tinged with pink. In H. dealbatum the involucre spreads to a diameter of from 1 to 1½ inch, the bracts arranged in many rows, the outer brown or reddish, and the inner of a pure white. A similar description may be given of H. elatum, except that the petal-like bracts are either silvery white or tinged with pink. H. leucopsidium has flower-heads about the same size as the last-named species, also white or tinged with pink, the outer ones often of a pale brown. A very pretty little plant is H. filifolium, the flower-heads of which are borne on long, slender peduncles; they are small, with a campanulate involucre—the outer bracts appressed, the inner ones with radiating laminæ of a bright golden-yellow colour. The flower-heads of all the above mentioned species are suitable for interspersing in large masses of other kinds, their golden or silvery appearance being very effective. They are, however, but a few by way of example out of a number that might be so utilised.

A great variety of forms are also available for decorative purposes amongst the African species, one of which, a most delicate and effective one, has lately been introduced and used principally for light wreaths or floral crosses, chiefly for church decoration. These silvery white flowers seem to be those of Helichrysum vestitum, and would appear to be brought in comparatively small quantities. They are mostly used in conjunction with the leaves of the South African Silver Tree (Leucodendron argenteum), which are likewise a comparatively modern introduction. We have seen some very tastefully arranged designs made almost exclusively from these silvery flowers and leaves.

Other species with showy flower-heads that dry well are H. fœtidum, which are from half an inch to three-quarters of an inch across, the involucral bracts varying in colour from creamy white to bright yellow; H. rutilans, with cylindrical heads and bright yellow bracts; H. umbraculigerum and H. fulgidum, likewise with showy flower-heads composed of glossy imbricated scales; of this last species there are several varieties known.

Helipterum.

In the genus Helipterum, which is closely allied to the last named, and, like it, includes a large number of species, natives also of South Africa and Southern and Western Australia, we have several species in cultivation. Amongst Cape species may be mentioned H. speciosissimum, a very showy plant, with white or orange flower-heads, and H. eximium, with globular crimson flower-heads somewhat resembling those of the Globe Amaranth. From Australia we have H. incanum, a densely tufted perennial species growing from 6 inches to a foot in height, with a hemispherical involucre an inch or more in diameter, composed of rigid petal-like bracts, pure white or tinged with pink or brown, often passing into a bright or pale yellow. In Tasmania the plant is known as the native Amaranth. H. Humboldtianum is an erect annual plant 1 to 2 feet high, with small and numerous flower-heads in dense terminal corymbs; the involucre is cylindrical, with closely imbricating bracts, when fresh of a bright yellow colour, but changing when dry to a metallic green. H. Manglesii, described in most works as Rhodanthe Manglesii, is a very showy species, and is known in cultivation. It is an annual, a native of West Australia, growing to a height of from 1 to 2 feet, with an erect branching stem and flower-heads arranged in a corymbose manner on slender stalks. The involucre is hemispherical, the scales of which are small and silvery at the base, increasing both in size and depth of colour from a pale to a rich pink, and sometimes to a deep purple, as they near the top. This species is a native of West Australia, and it varies very much in the size of its flower-heads.

Of other Australian species suitable for extended cultivation for the production of everlastings we may mention H. roseum (Acroclinium of some authors), a handsome West Australian species, with large solitary and terminal flower-heads, the involucre varying from bright pink to pure white. H. anthemoides, with a hemispherical involucre and pure white bracts. H. chlorocephalum, with bracts of a metallic green or yellowish-brown colour. Some thirty species are described as indigenous to Australia, many of which might be made available.

Ammobium.

The genus Ammobium, which is limited to Australia, and comprises only two species, produces flowers belonging to the truly everlasting group, the flower-heads being more rigid than those of the preceding genera, on account of the presence of scales on the receptacle between the florets. A. alatum is an annual or perennial, growing to a height of 2 or 3 feet in its native country, the involucral bracts of the flower-heads in many rows, white, and petal-like. A. craspedioides is a somewhat smaller plant, with straw-coloured rigid bracts.

Waitzia.

Of the Waitzias, essentially an Australian genus, comprising about half a dozen species, most produce showy flower-heads of the everlasting type. W. corymbosa is an erect annual plant, from 1 to 2 feet high, producing its flower-heads in dense terminal corymbs; the involucres are about three-quarters of an inch in diameter, and vary in colour from pale to dark yellow, bright pink or white. W. aurea is likewise an erect annual plant, with flower-heads rather larger than the last-named species, and the involucral bracts golden-yellow or tinged with brown. In W. nivea the bracts are a pure white or pink, or sometimes of a pale yellow; and in W. Steetziana they vary from a pure white to a pale or bright yellow, and of a pale straw colour in W. paniculata.

Gnaphalium, &c.

The genus Gnaphalium is a large one, distributed nearly over the entire globe. Some are natives of Europe, some of the Cape, and others of Australia. The involucre in all the species is scarious or persistent, the bracts of which in many are white or straw-coloured. The commonest species is G. luteo-album, which has a very wide distribution. Its flower-heads are nearly globose, and the involucral bracts are pale brown or straw colour.

The flower-heads of the following genera are also of the everlasting character, namely:—Stæhelina, Xeranthemum, and Angianthus. The species belonging to the two first-named are natives of the regions of the Mediterranean, those of Xeranthemum producing either purple or white flower-heads. The last-named genus is limited to Australia, and comprises about twenty-two species.

From this sketch it will be seen that the Compositæ contains a large number of flower-heads of the everlasting character. In Germany, however, numerous flowers of widely different families are dried and preserved with their natural colours, besides a host of ornamental grasses. Though a great improvement has been effected during the past few years in the artificial colouring of these flowers and grasses, much more taste might still be exercised in their preparation. Thus, for instance, the grasses in their various natural forms are all of them beautiful objects, and suitable, when carefully or simply dried, or even bleached, for working into bouquets for decorative purposes, but when dyed of any colour, more especially of the dark colours we frequently see them, they become positively ugly; their light graceful forms are too delicate to bear heavy colouring, and the same may be said with regard to many of the flowers. The *modus operandi* of dyeing these flowers and grasses in Germany was described at p. 42 of our present volume.

I am indebted to the courtesy of Messrs. E. H. Krelage, of Haarlem, for some of the information contained in this paper, as well as for the following list of flowers and grasses cultivated and extensively used by them for ornamental purposes:—

Flowers.

Acroclinium album
Achillea Ptarmica fl.-pl.
Ammobium alatum
Althæa rosea
Anthemis tinctoria
Aster sinensis, scarlet var.
Bellis perennis fl.-pl.
Calendula officinalis ranunculiflora fl.-pl.
Catananche cœrulea
Centaurea Cyanus
Chrysanthemum tricolor Burridgeanum
Dianthus sinensis, scarlet
Delphinium Consolida fl.-pl.
Gnaphalium margaritaceum
Georgina variabilis
Gomphrena globosa rubra
" " aurea
" " alba
Gypsophila paniculata
Helichrysum orientale
" compositum
" (Gnaphalium) fœtidum
Helipterum Humboldtianum
" (Acroclinium) roseum
" incanum
Lonas inodora
Pæonia officinalis fl.-pl.
Pelargonium odoratum (large flowered)
Punica Granatum
Rhodanthe maculata
" alba
Rosa (varieties)
Sanvitalia procumbens
" " fl.-pl
Statice Bonduellii
" sinuata
" scoparia
" Limonium, and other sorts
Viola altaica
Waitzia aurea
Xeranthemum annuum
Zinnia elegans fl.-pl.
" Haageana
" " fl.-pl.

GRASSES.

Agrostis nebulosa	Eriophorum lanatum
,, pulchella	Festuca rigida
Aira cæspitosa	Hordeum jubatum
,, flexuosa	Lagurus ovatus
Apera spica venti	Lasiogrostis argentea
Avena fatua	Leptochloa gracilis
,, flavescens	Luzula albida
Brachypodium platystachyum	Melica altissima
Briza media	,, ciliata
,, maxima	Milium effusum
Brizopyrum siculum	Pennisetum longistylum
Bromus brizæformis	Phalaris arundinacea
Calamagrostis arundinacea	Setaria macrochæta
Eragrostis plumosa	Stipa pennata

John R. Jackson, Museums, Kew.

FRUIT MEMORANDA.

M. Carrière figures in the last number of the *Revue Horticole* a Peach under the name of Dwarf Aubinel. The tree is of dwarf bushy habit, with glandular leaves, large flowers, large globular fruit, with a shallow furrow and of a pale orange colour marbled with red near the summit. It is a free-stone, with yellow flesh, very red around the stone, and of good flavour. It is ripe at the end of September. The leaves are so thickly set that it is necessary to remove them as the fruit ripens or it will not colour well. The most singular point about this variety is the constancy with which it is reproduced by seed. In France the tree in question needs no pruning, but may be planted in the kitchen-garden *absolument comme s'il s'agissait de Groseillers.*

—— In the *Moniteur Horticole Belge* M. Gillekens says that many amateurs propose to abandon the cordon system on the ground that these little trees are only productive for the first five or six years after their plantation. To meet this objection, it is suggested that fresh cordons be planted every five years or so. The cost will be but trifling.

—— M. Désiré Chevalier, a Peach grower of Montreuil, according to a recent number of the *Bulletin* of the Central Horticultural Society of France, practises a method of increasing the size and earliness of the Peach. In the middle of the fruit-bearing branch, and in the month of March, he makes a sloping cut from below upwards, reaching to the middle of the shoot, the incision being quite similar to that employed in layering Pinks. The wound is still further extended by bending the extremity of the cut shoot, and when this has been done it is nailed in. The principle of this depends on the arrest to the downward flow of sap, and the consequent profit of the fruits above the wound.

—— According to some figures cited by M. Joly before the Central Horticultural Society of France, and taken from the records of the Custom House, the total quantity of fruits exported to England, Belgium, and Germany amounted in 1874 to 78,479,227 kilogrammes [a kilogramme is rather over two pounds]; of this amount 3,000,000 (omitting fractions) were Lemons and Oranges, 43,000,000 fresh fruit, 14,000,000 dried and pressed fruits, 2,000,000 preserved fruits, and 15,000,000 kilogrammes of nuts. In 1874 the quantity exported was more than double that in 1873. Of dried vegetables, 24,000,000 kilogrammes were exported in 1874, Chestnuts 6,000,000, and of Potatos the enormous quantity of 175,779,236 kilogrammes. M. Joly asks, in the face of these stupendous figures, why there are so few agricultural and horticultural schools in France; and finds in them a reason why horticultural and agricultural societies should be supported and encouraged by all who have the welfare of the country at heart.

—— Hirschberg, in Silesia, is the centre of an extensive and growing industry, started now several years ago by one man, M. Samuel Hausler. It is the cultivation of Apples for wine-making. Most of the owners of land in that district have large orchards of certain varieties of Apple grown solely for this purpose. According to the *Monatsschrift*, from which journal we glean this information, the principal varieties planted for this purpose are the *gelbe, grüne* and *gerippte Würzapfel*—yellow, green, and ribbed aromatic Apple—varieties that are also very useful in the house.

—— In the *Monatsschrift* for March there is an uncoloured plate of a new Plum called Anna Späth, raised by M. Späth, the well-known nurseryman of Berlin. The plate was drawn from a photograph, and is unaccompanied by any detailed description. This is said to be an extremely useful variety for culinary purposes, and is of the Quetsche type, with a much larger, more juicy fruit. According to the plate it is about 2 inches in its longest diameter. M. Späth states that it is a first-rate variety, and an extraordinary prolific bearer; and the editor of the *Monatsschrift* commends it to the attention of all fruit growers.

TIMBER TRADE TERMS.

THE WOOD WORDS OF THE WOOD-WARDS

"An exchequer of words."—*Shakspeare.*

Technical terms are required in every art, profession, study, or trade. The tendency of specialised attention is to render knowledge more definite, and so to give particular emphasis in thought to peculiarities in details. Thus words become more strict in their meaning in every technology, and involve a more specific meaning than when used in general. When the influences of trade, again, enter into the mind, a more intense need is felt for thoroughly determinate technical terms, so that there may be neither mistake nor excuse for mistake in the denoting of the articles with which each particular trade is concerned. This is the only means by which exact orders can be given, and precise directions can be imparted. They form a sort of shorthand vocabulary, in which experience has enabled their employers to read an express and definite signification, at which outsiders can make but an approximate guess; and they are a kind of free-masonry of speech, which indicate the initiated of the brotherhood. Technical terms are necessities of the division of labour, the specialities of interests, the peculiarities of knowledge, and the intimate interests of commerce which trade implies; they cannot be done without; every trade has its own. They may be the very same words to the eye and to the ear, but to the minds of each different tradesman they suggest a more or less different idea. The one word timber, for instance, means to the ordinary ear and mind any sort or even piece of wood; but to the timber merchant, the shipwright, the carpenter, the wood-carver, the cabinet-maker, the turner, &c., it suggests a more definite signification, and to each a more or less different kind and class of associations. To the furrier, again, the word timber in a technical sense calls up no idea of wood at all. To him it is expressive of a certain number of skins, of the finer sort forty, and of the less valuable, 120; while to the heraldist, again, the term timber indicates the number of rows of ermine which must, according to the regulations of his pursuit, be placed upon the cloaks, gowns, or coats of differing dignitaries in state, official, or civil life. To the musician timber or *timbre* (for both are used) denotes the musical tone of a voice or instrument. In all these cases, and more might easily be quoted, the particular interests of each class has given to the same term a specific technical meaning, a signification which it has to them, but has not, in precisely the same manner, to others. We see from this single example, that were the *Timber Trades Journal* to extend its catering to the utmost limits of the signification of timber, it might supply us with critiques on Helmholtz's *Sensations on Tone*, disquisitions on the furs of rovers in woods, and articles on the official robes of mayors, aldermen, counts, and earls, as well as papers on the growth of trees, the conversion of woods by machinery, and the prices of deals, battens, &c.

Now there is generally something singular in the manner in which words acquire their special technical meaning, and there is always a great satisfaction in knowing the precise nature of the ideas which technical terms suggest. We have no doubt that in other branches of industry and commerce a great deal of peculiar value would be found connected with the words in common use among their practisers as technical terms; but we are sure that to those employed among those who are engaged in the timber trades a considerable amount of interest will be found to attach. We intend to illustrate this by taking up a few of the technical terms of the timber trades—at present those which are more particularly employed by planters, foresters, and wood-wards—and showing their special meaning, expressiveness, and felicity, when they are "words fitly chosen."

The forester's use of the term "timber" is marked off from that of the common meaning assigned to it by its being applied only to and employed concerning the wood of a stem or branch of any species of plant which attains the dimensions of 2 feet in circumference, or exceeds 8 inches in diameter. To all other wooded plants which never (or but seldom) reach the dimensions aforesaid the forester denies the designation timber, and relegates them to the category of bushes, shrubs, poles, &c.; and even in trees which grow to vast girths and height the wood-ward only calls that timber which has attained the girth or diameter stated above. He calculates nothing into the timber of his tree which grows beyond that limit, to whatever other purpose it may possibly be put. From the butt-end of a tree to such of its extremities as measure 24 inches in clear girth is all that he includes in his reckoning of the tree's contents as timber. Even timber itself, to the forester, rather signifies growing trees suitable for producing logs, &c., than the cut produce; while to the merchant the wood in the cut state rather than as a forest-growth is the chief idea suggested by the word.

"Bavin" has several different meanings in different parts of the country; in some places it signifies cut brushwood in general, in others, fagots such as are used for the heating of bakers' ovens, kindling fires, &c. In Warwickshire it is used as the name of the chips of cut wood, scraps and refuse of brushwood and fagots, either given to the poor or gathered together to be burnt as useless. It is used in this sense by John Floris and by William Lyly. This explains what Shakspeare means when he speaks of—

> "Shallow jesters and rush bavin wits,
> Soon kindled and soon burnt."
> *1 Hen. IV.*, III., ii. 61.

"Binders" are the long, pliant shoots of Hazel, Ash, Willow, and similar trees, which have elasticity and length enough to make them useful in fastening down newly-plashed hedges, in making close fences round rabbit warrens, sheepfolds, &c., in forming hurdles, and in tying up fagots, brooms, &c. They are also called in some parts of the country "withers" (connected with withe) and "weefs," as if signifying being used in weaving the materials together, especially in crate-making. They are also called "edders," or "roders."

Bole is the trunk, stem, or body of a tree after it has attained the diameter of 8 inches, which constitutes it timber. So Tennyson's talking Oak speaks of a girl—

> "The whole
> Of these three stanzas that you made
> About my giant bole."

A bush or shrub, on the other hand, in planting and gardening, is the name applied to those perennial ligneous plants (usually with several stems issuing from its root) which, in their normal or natural state of growth, do not attain a girth of more than 6 inches, and in this case, of course, it does not class as timber.

Butt-end signifies that part of the stem of a tree which is nearest the root, the part at which the lowest measurement is taken, the heaviest and clumsiest portion. The word is applied in a metaphorical sense by Shakspeare when Gloster says of the phrase, "Make me die a good old man"—

> "This is the butt-end of a mother's blessing."
> *Richard III.*, ii., 110.

"Cane" are shoots of hazel, 6 feet long, cleft for hoops (hence called "smart hoops"). They are used for salmon kits, small tubs, and other cooperage work, and by sugar refiners for their earthen pots.

Cooper-ware is the name given to the lower ends of Ash poles, cut in lengths from 6 to 18 feeet, for waggon tilts and cooper work.

"Fagots" are of two sorts, house-fagots and kiln-fagots. The former are the long branches of the Hop and fence poles, the tops of hedge-stakes, and of cooper-ware, bound with one wither or werf; and the latter are the brushings of the wood before the copse has been cut, and are made up of brambles and other bushes, dead wood in the stubs, and the refuse of plants on the surface of the ground. They are used for burning lime, baking bricks, &c.

Log, the trunk or body of a tree ready for the sawyer. In ordinary language log signifies a piece of firewood, or any bit of unshaped timber; in sea phrase a log is a machine used to measure the velocity of a ship's movement; but in the forester's vocabulary it signifies a bole hewn and squared.

"Poles" are shoots from coppice stools or the stems of young trees. They are cut of various lengths, according to the use to which they are to be put.

"Sapling," a young tree less than 6 inches in diameter at 4 feet from the ground; a long plant of the tree kind, either a maiden tree, *i.e.*, one raised from seed, or one produced from an old root or stub.

"Sears," low fagots, pliable branches used for sheltering farmyards, and various other domestic purposes; longer bavins, fastened with three withes.

"Shoot," the lateral branch of a stem or of a stub. The latter, however, is more properly a standard.

"Sprig of wood" is, in some places, used as the name of branches of trees.

"Sliver," small straight shoots, cleft longitudinally for cooper's work, lathing, &c. Such an "envious sliver broke" when Ophelia was drowned.

"Stem," the body of a tree in all its stages of growth, from seedling to full-grown tree.

"Stool" or "stub," the root of a tree left in the ground. Hence quaint old Tusser's "point"—

> "To buy at the stub is the best for the buyer:
> More timely provision the cheaper his fire."

"Tap-root," the first root produced by the seed of a tree; that which descends at first perpendicularly into the earth, and supports the tree till its proper leaves are produced, which in their turn aid the production of fibres to constitute proper roots. The term is employed metaphorically to signify the original or beginning of a thing, as in the phrase, "that is the tap-root of the evil."

"Tiller, tellar, tielar, tilar, tellow, or tillow" (for in so many ways I may tell those interested in "spelling-bees" have I seen the word spelled), is the shoot which is selected, for its superior strength and healthy habit, among those produced by a coppice stool to stand for a timber tree. In some parts of the country any young tree, a sapling from a fresh root; and in others an offset from the stump of a tree cut down.

"Trunk," the stem, the bole or body of a timber tree. Shrubs have no trunk, technically speaking, and in timber trees the trunk includes the entire body of the tree available for cutting into timber. Its yearly increase of substance is marked by those white circular lines which are apparent on the transverse section of the bole of every sort of forest tree. Prospero metaphorically speaks of his usurping brother as—

> "The ivy which had hid my princely trunk,
> And sucked my verdure out on't."
>
> *Tempest*, I., ii. 86.

The foregoing list of "Timber Trade Technical Terms" might easily have been extended. We have shown, we hope, that there is an interest in the consideration of the subject. We may at a future time direct attention to another series of wood-words. *Timber Trades Journal.*

BRITISH GARDENERS.

XXXVII.

Robert Foulis.

When a man is singled out by an independent body of his fellows to receive the highest honour it is in their power to bestow, it must be admitted that his claims to such distinction must be of no ordinary character. Such are the claims of the gardener whose portrait we this week place before our readers. Mr. Robert Foulis for nearly half a century has been gardener, farmer, and forester at Fordell, in Fifeshire, the seat of G. W. Henderson, Esq., and has long been known as a very successful horticulturist, and as a keen arboriculturist and geologist. In February last he was awarded the Neill Prize by the managers of the Royal Caledonian Horticultural Society. Mr. Foulis has also been a popular lecturer, some of the texts for his discourses being, "The Green Things that Clothe the Earth's Surface," "Husbandry, Ancient and Modern," and "Man's Abode, and How it was prepared," &c.

"I was born," writes Mr. Foulis, "at Woodhouslee, about 6 miles south from Edinburgh, in 1799, and am the third son of David Foulis, long gardener and estate manager to Lord Woodhouslee, and afterwards to James Tytler, Esq., of Woodhouslee. David, my eldest brother, on the death of my father in 1816, succeeded him as gardener and estate manager, which situation he held for the long period of fifty-three years. At an early age I entered the parish school of Glencorse, where I received the most of my education.

"I afterwards served a three years' apprenticeship under William Clark, then gardener to Sir Patrick Inglis, of Sunnyside, now known as Kingston Grange. From this I went as journeyman to Keilyie—a fine place in those days—in Peebleshire, for one year; the second I acted as foreman. From this place I removed to Portmore. Here I remained only a short time, having to leave in consequence of the rearrangement of the place. From this I went as foreman to Stobo Castle, also in Peebleshire, where I remained one year, and then removed to Moncrieffe House, Perthshire, the seat of Sir Thomas Moncrieffe, Bart., and served two years under John Mitchell, the then celebrated gardener at this place. From this I removed to Donibristle, the seat of the Earl of Moray, in Fifeshire, where I served three years as foreman, under Alexander Kelly—a man in his day as a gardener above the average. From this I went to London and spent twelve months in Mr. Mackie's nursery (now Low's).

"In 1827 I was recommended by my late master, Mr. Kelly, to Admiral Sir Philip Durham, Bart., of Fordell, as his gardener, which situation I obtained. It so happened when I was engaged to go to Fordell that the late Mr. Rintoul, who was in the same nursery with me, was engaged to go to Whittingham, in Haddingtonshire. Being both young men and anxious to gain as much insight in our profession as possible, Mr. Rintoul and I resolved, before going north, to make a circuit of 40 miles round London, and visit the most noted places we could hear of on our journey. In those days such a task was no easy matter, for most of it had to be done on foot. This journey we accomplished in something over three weeks, saw many fine places, and picked up much valuable information.

"From London we took coach to Manchester; here we spent a few days visiting the most celebrated places in that neighbourhood. From thence we found our way to Liverpool, still in quest of information regarding our profession; here we spent a few days visiting the various places round Liverpool, and also on the Cheshire side of the water. We then took steamer for Greenock, where we arrived safely and much pleased with our month's travelling.

"I entered on my duties at Fordell in October, 1827, under Sir Philip Durham, Bart., whom I served for sixteen years, who was succeeded by George Mercer Henderson, Esq., and then by George William Henderson, Esq., the present proprietor, and whom I am now serving. Besides the garden I have had the home farm, woods, and the estate generally under my management. The present proprietor has made extensive improvements in every department; long ranges of cottages have been erected on the most approved plan for the comfort and convenience of the various workpeople on the estate; new farm steadings, &c., erected; many miles of wall built, wire fencing put up, and drainage on an extensive scale carried out, and the estate generally put in good order, and, as far as possible, all vacant and waste land reclaimed. Mr. Henderson, the present proprietor, is an ardent arboriculturist; he has had lately planted 53 acres of choice Coniferæ, all thriving remarkably well: nearly all of these plants were reared in the home nursery here. During all these alterations and improvements the garden has not been neglected, as very extensive additions have been made to the glass erections; the ranges now extend to over 700 feet. Pine growing is rather extensively practised here. My system has been to plant out. Many of those I have exhibited are from 8 lb. to 10 lb. weight, and several times I have taken first honours with them at the Edinburgh exhibitions.

"Mr. Henderson has lately relieved me from the care and anxiety of the management of the home farm, without any diminution of my salary—an act of generosity I appreciate very much, and by which I shall have more time to devote to my more cherished work in the garden; and, lastly, I have just been awarded the Neill Prize of £54 sterling, of which distinguished honour I feel very proud indeed."

LOWTHER CASTLE:

The Seat of the Earl of Lonsdale.

Lowther is situated near the northern extremity of the county of Westmoreland. The family of Lowther dates back for many centuries in this and the adjoining county of Cumberland. We find the names of William de Lowther and Thomas de Lowther made mention of in the time of the second Henry, in connection with certain grants of land during that reign, from which time downwards the leading members of the family are very frequently mentioned connected with the affairs of the country. We read of a Sir Hugh de Lowther, who was Attorney-General in 1292, in the time of Edward I. Then follows another of the same name, who fought at Agincourt along with Geoffrey de Lowther and Richard de Lowther. Again, we find in Elizabeth's reign Sir Richard Lowther, from his office as Lord Warden of the West Marches and Sheriff of Cumberland, became for a time custodian of the unfortunate Mary Queen of Scots; yet it would appear that he was so far favourably disposed towards his prisoner as to incur the displeasure of Elizabeth. This occurred in 1568. In 1688 Sir John Lowther brought his powerful influence in Cumberland and Westmoreland to bear in support of King William, for which service, amongst other favours, he was created a Viscount. But it was in the person of Sir James Lowther, the first Earl of Lonsdale, that were united the immense possessions of Mauds Meaburn, Lowther and Whitehaven, and which form the princely inheritance attached to the title at the present day.

In a part of the kingdom where Nature has been lavish in fine scenery Lowther has come in for its full share. The grounds may be simply described as a combination of all the elements essential to the existence of a magnificent place—ample space, bold, undulating surface, magnificent timber in unlimited quantities, sufficiency of water, and commanding views. It is not inaptly described by Lord Macartney, who, in speaking of Lowther, says: "The extent of prospect, the grand surrounding objects, the noble situation, the diversities of surface, the extensive woods and command of water, render it capable of being made the finest scene in the British dominions." Wordsworth describes the pleasure enjoyed in his younger days in wandering through these grounds—

> "And muse in rocky cell and sylvan tent,
> Beside swift-flowing Lowther's current clear."

A new entrance and road from the bridge that crosses the River Lowther at a point over 3 miles distant has just been formed. It is an extensive work, from the immense depth of rock and earth that have in

some places to be moved. It will be a beautiful drive, leaving and again catching the river four or five times during the route. Nothing less should suffice than to make it in every way a worthy approach, and in keeping with the place.

The present entrance from the north is on the Penrith road, leaving which the drive proceeds through the park, 600 acres in extent, following a winding course round to the north front (see fig. 90). The present mansion stands on the site occupied by the old hall, which was partially destroyed by fire in 1726. It was built after the designs of Sir Robert Smirke, and is of light-coloured stone. It includes two distinct styles of architecture; the northern front is castellated, and 420 feet in length. Standing facing this magnificent pile the visitor cannot fail to be struck by its massive grandeur. The style of the south front is cathedral-gothic, with pinnacles, and pointed windows. The idea conveyed through a description

Till centuries in their course invest
Thy towers with sanctity.
But thou the while shalt bear
To after times an old and honour'd name,
And to remote posterity declare
Thy founder's virtuous fame.
Fair structure! worthy the triumphant age
Of glorious England's opulence and power
Peace be thy lasting heritage,
And happiness thy dower!"

The internal arrangements and fittings are in every way equal to the exterior; the library is 45 feet by 30, the saloon 60 feet by 30, with adjacent dining and drawing-rooms, proportionate in size. The whole is surmounted by a high tower, from the top of which, with a clear sky, may be had a splendid view of the surrounding country, including the principal mountains in the Northern ranges: this tower is reached by a staircase 60 feet square and 90 feet high from the Castle; it is we believe mostly inhabited by those employed on the estate. All the houses and everything attached to them have an air of perfect order and neatness, with plenty of room, that speaks well for the regard paid to the comfort of the occupants.

Returning to the south side of the mansion, the large expanse of lawn in front is somewhat broken up by walks that cross each other at right angles, and to a certain extent interfere with the continuity of green surface. On a narrow strip of turf adjoining the building are a series of flower beds, filled with the usual summer blooming plants. The dressed ground here is divided from the park by a deep sunk fence. The view in this direction is more confined than at the opposite side of the Castle; on each side it is flanked by magnificent timber. To the right here adjoining the mansion is the conservatory; it is a massive structure in keeping with the general style of the building. It was at the time of my visit

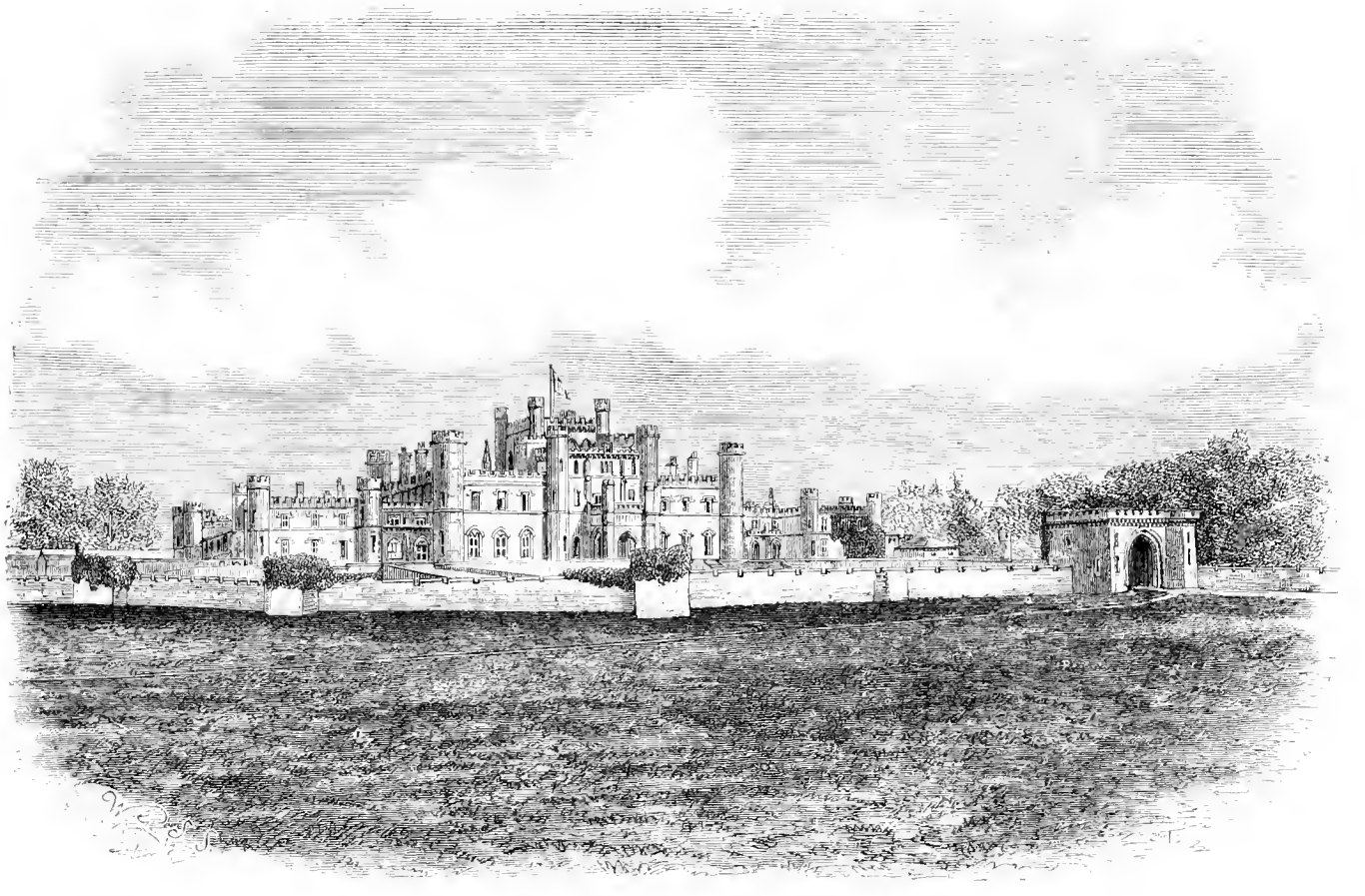

Fig. 90.—Lowther Castle, the seat of the Earl of Lonsdale.

of the building with its opposite fronts, dissimilar in style, will most likely lead to the impression that there must necessarily exist an appearance of incongruity. Yet such is by no means the case. The difference in style is favourably noticed in a sonnet by Wordsworth, commencing as follows:—

"Lowther! in thy majestic pile are seen,
Cathedral pomp and grace in apt accord,
With the baronial castle's sterner mien;
Union significant of God adored
And charters won and guarded with the sword
Of ancient honour."

Some idea of the exceptional character of the building may be formed from the stanzas written by Southey, in which are described the feelings he at one time entertained as to the unworthy character of the buildings of the age: they conclude:—

"With other feelings now
Lowther! have I beheld thy stately walls,
Thy pinnacles, and broad embattled brow,
And hospitable halls.
The sun those wide-spread battlements shall crest
And silent years unharming shall go by,

ground to the ceiling. Comparatively little foreign wood is used in either the building or furniture, native Oak and Birch being employed in its stead. In the corridors are numerous busts by noted sculptors, on the walls are hung the splendid and costly collection of pictures by the great masters for which Lowther is famous.

On the eastern bank of the river, near the outskirts of the park, stands Lowther Church; it is a plain cruciform structure. In the churchyard is a splendid mausoleum, erected by William, the third and late earl; it consists of a spacious vault beneath and above an upper chamber for monuments: in it are some half-dozen tablets for inscriptions, they are of the noted local Shap granite, 8 feet by 3 feet. This granite bears a high polish and is very handsome. There is here a beautiful sarcophagus, in Italian marble, designed by B. Band, and executed by B. Stephens. From the churchyard there is a good view of the Castle. The ground from this point descends rapidly to the river, which is here seen to advantage. Near this is a grand old Sycamore. The village of Lowther is situated about a mile from the

(July) very gay with a good assortment of plants, consisting of fine examples of Tree Ferns, Palms, Myrtles, the variegated New Zealand Flax (Phormium tenax variegatum), specimen Ericas, and a number of very large uncommonly well-managed Fuchsias; these were trained in the shape of tall pyramids, and were well adapted to the character of the house in which they were placed. As a conservatory of this description would look nothing without a moderate quantity of plants sufficiently large to be effective, Mr. Shand, the present able gardener, makes a special feature of these plants, finding them particularly suited for the decoration of this house.

Almost adjoining the conservatory are several large beds filled with summer bloomers; here also is the Countess's garden, the site of which is a natural dell, considerably lower than the surrounding ground. The deep sloping sides of this garden are planted with Laurel, kept clipped low; the centre is occupied by a number of geometrical beds, a portion of which are planted in the carpet style. The plants employed were the kinds generally used in this description of gardening; the arrangement was very effective collec-

tively, the ground being well clothed, without any irregularity, as is sometimes seen in particular varieties of plants not making equal growth with others in the design. To relieve the otherwise too even surface a number of moderate-sized stone vases are used.

(*To be continued.*)

PARSLEY ALL THE YEAR ROUND.

Though the culture of Parsley is very simple, yet to have an abundant supply of it all the year round is often attended with some difficulty where spare lights are not available for this purpose, and especially in low-lying, moist structures. The leaves, which are used as a seasoning and also as a garnish, are destroyed by frost in winter, and on cold stiff retentive soils it frequently dies off. It can be grown successfully in any light, rich soil, that has a dry porous subsoil. To meet a constant demand all the year round three or four successive sowings should be made from February to May; the seed should be sown in very shallow drills, and be very lightly covered. When the young plants are up and large enough to handle they should be thinned to 6 inches distance in the rows. The first sowing or two will furnish leaves all through the summer and autumn, and, with care and a little management, all through the winter; but I prefer and would recommend sowings in May for a supply in winter. A dry border should be chosen for it, and, where there is a south wall, a little sown at the foot of it will always be useful in spring. Before severe frosts set in ample provision should be made for thoroughly protecting a portion, sufficiently large to furnish a supply of leaves during several weeks' frost. The coverings should only be put on in frosty weather, and in mild, open weather the plants should be exposed.

The difficulty of having a supply during winter is experienced where there are no spare lights available for protection, and where the soil is of a heavy, retentive nature. Many ways will occur to an intelligent mind to meet these difficulties. Where the soil is unfavourable, a site should be prepared specially for it by putting a quantity of stone and brick rubbish at the bottom, and putting on this some soil suitable for the purpose. A sowing made on this towards the end of May, if carefully attended to during the summer months in thinning the plants and picking off any luxuriant leaves that may be produced, will furnish a supply during winter, provided it has some protection from frost. Experienced gardeners know the importance of having a good supply of Parsley all the year round, and generally make ample preparation to have it; but young men do not always at first starting see the importance of it, and are apt to think it only a trifling matter. It does not take up very much ground to grow a quantity of it, and it is a safe plan always to sow plenty, for then, with a little attention during the summer and some protection in frosty weather, a supply is always assured. *M. Saul, in the "Florist and Pomologist."*

The Villa Garden.

Greenhouse.—Primula cortusoides amœna.—There should now be no lack of flowering plants in the greenhouse, if a little attention has been devoted to providing an adequate supply. It is not difficult to do this. A leading feature in our own house consists of some specimens of Primula cortusoides amœna, flowering freely in 24-pots. The roots were potted up in October last, when at rest, after the foliage had died away, the pots being well drained, and a good soil used. They were put away on a shelf during the winter, and got frozen hard on two or three occasions, but no harm resulted, as it is of a very hardy character. As soon as the young growth began to push upwards water was given freely, and the plants made a rapid growth. The pots have ten and twelve flower-spikes, and when the flowers are fully expanded they present a charming sight. This is an excellent plant for Villa gardeners with limited accommodation, because it takes care of itself during the winter. The red-spider is very apt to infest its handsome leaves when grown in a house; but we give it plenty of air, and sprinkle it frequently with water over the leaves in sunny weather, and by means of abundant moisture at the roots the plants are kept growing vigorously; under these circumstances red-spider is kept at bay. Beautiful as this hardy Primrose is, it is yet surprising how little it is known among the great body of Villa gardeners: where once seen, it is soon obtained.

A few years' experience in the cultivation of this showy plant has taught us that it may be grown in the same pot without change of soil for two or three years with positive advantage. It flowers much freer and finer when the soil is filled with roots; but it takes a whole year for this to be accomplished. As soon as our specimens have gone out of bloom, the plants will be stood out-of-doors to ripen their growth till the autumn, when the dead leaves will be cleared away, and the top soil removed to the depth of an inch or so. Then a top-dressing of fresh soil will be given, and the plant stood away on a shelf in the greenhouse to winter. Its varieties lilacina, grandiflora and alba are now in full bloom also, and no amateur gardener can wish for anything better at this season of the year. The three varieties are now becoming more common, and every Villa gardener should have them. The roots rapidly extend themselves, and by these means a quick increase is assured. It is perfectly hardy, and, therefore, does well in the open border, but it should be in some sheltered spot where the rough winds cannot injure the flowers or snap asunder the stems.

Astilbe (Hoteia) japonica—Here is another plant that is of great service to Villa gardeners, because it, too, is so easily managed. Sometimes statements are made respecting this plant which lead simple-minded people to suppose that it requires elaborate and special treatment during summer to ensure the proper ripening of the crowns so as to flower in the following spring. It is quite true that it must not be neglected during the summer, but there is no difficulty about ripening the crowns so as to secure a good head of bloom the following year. Last year we flowered two plants in 10-inch pots, and fine heads of bloom they gave; when they had done blooming holes were dug under an east wall, and the plants turned out of pots, the crocks at the bottom of the roots taken away, and one put in each hole, some fine rich soil put round them, and then the soil trodden firmly about the roots. Water was freely given during the summer, and a copious young growth was given forth. In October the balls were lifted and cut into four quarters by means of a sharp spade, the soil was pretty freely shaken from the roots and potted in a rich well-manured soil in 48-pots, and then placed on a shelf of the greenhouse. No attempt was made to force them into growth—it was left to solar heat to accomplish this, and now the plants are just beginning to expand their flowers on numerous stems, and what an excellent thing it is to cut from; besides, it is a capital plant to place on a table or sideboard when required.

Pelargoniums and Fuchsias.—Cut-back plants of these shifted into fresh soil and pots directly they begun to show signs of growth are fast coming into flower, brought forward by the lengthening days and stronger solar influences. In another month we shall have small plants of each in full bloom. They are kept moist at the roots without being over-watered—a danger which requires some guarding against when the young roots are being put forth. When the plants are pot-bound, *i.e.*, the roots formed into a dense hard ball, it is difficult to give them too much water at the roots during hot, sunny weather; therefore, the plants should never be watered sparingly, but sufficiently to preserve in a state of healthy vigour. When the sun shines warmly through the glass they are occasionally sprinkled overhead through the fine rose of a watering-pot, and considerable benefit is derived from it. The plants require to be turned round occasionally, so that each side may come near the glass, and thus secure a uniformity of growth all round.

Late summer-struck cuttings of show Pelargoniums are now making fine bushy plants in 48-pots, having been shifted into them about a month ago. They are on a shelf near the glass to encourage growth, and are kept well sprinkled overhead to keep them clean and healthy. The points of the growing shoots are kept pinched out, the simple reason being to make the plants bushy. This will somewhat retard the time of flowering, but we want them to give a succession of flowers after the cut-back plants of last summer have gone out of bloom. There is scarcely a better summer-flowering plant for greenhouses than these large flowering Pelargoniums, and some of the newer varieties are very beautiful indeed. When the plants are healthy and in vigorous growth they yield a large quantity of flower, and they are exceedingly useful to cut from. The large cut-back plants are no longer pinched back, but are allowed to retain all their young growths, so as to have the plants in flower as early as possible.

Garden Operations.

PLANT HOUSES.

Greenhouse Hard-wooded Plants.—Whatever potting yet remains to be done should be now completed without delay. The after treatment required for a few weeks will depend upon the weather, which during the present month is generally variable. It is essential that when the sun shines brightly, and the external air is dry, it should be admitted as before advised, in limited quantities, and that the plants also should be shaded and the atmosphere occasionally moistened by sprinkling water; but when the reverse of this kind of weather exists, they must not be kept too close, as its immediate effects would be to excite the shoots before there was a corresponding amount of root-action to support them. Another effect of too close treatment for any length of time will be to induce the spread of mildew upon any plants that are subject to it, should the least trace of the parasite exist. What is required in the treatment after potting is to adapt the practice to the requirements of the weather. The earliest potted plants will shortly have got hold of the soil, and will bear the admission of more air, but do not let it, whilst the growth is young and the leaves tender, come in force through the side lights when the wind is strong. Even such air-loving plants as Heaths are often seriously injured in the spring when subjected to such usage, not as might be supposed in their young leaves, but the old and mature foliage, which is frequently turned so brown and rusty as to lose its vitality years before it otherwise would do so—a condition that not only weakens the root-power of the plants but permanently disfigures them in a way that no possible after-treatment can rectify. Small plants of general hard-wooded greenhouse stock, and also Heaths that have been recently shifted, will require closer attention in watering than such as are larger, as the small body of soil in which the roots are placed will dry so much the quicker. The whole stock should now be looked over every morning; plants of this description are much more likely to keep in health by being looked over as to the water they require in the mornings, than when it is done irregularly, sometimes in the morning and at other times in the evening, as a plant that is all right when looked to in the morning may get dry in the after-part of the day, and if not watered before the evening following will not unlikely suffer seriously. To the inexperienced in the cultivation of delicate rooted subjects, regular attention such as the above may appear unnecessary, but nothing less will command success.

From this time forward throughout the growing season it is essential that the floor of the house and under the stages should be regularly moistened; this will always keep the atmosphere of the house sufficiently moist to prevent any plant that gets dry at the roots from suffering to such an extent as would be the case if the air was very dry. It is also the best means for insuring healthy growth and to keep down red-spider. The unnaturally dry condition of the air in plant-houses, produced by the sun in full power acting upon the glass, with an insufficient body of moisture-holding material inside to counteract its effects, is so far injurious that the sprinkling overhead with the syringe in the evenings of warm days only does very little to remedy. Close the house early in the afternoon, so as to cause the temperature to rise considerably for an hour or two, damping such plants overhead at the same time as are not particularly subject to mildew; this, of course, applies to growing stock that are not wanted to flower, as no attempt must be made to syringe plants overhead that are intended to bloom until the flowering is over. Small plants as soon as potted should have any flowers that are upon them removed all over, strong shoots that are taking the lead of the weaker growths cut well back and bent down low, leaving the less vigorous to keep an upright position, which will soon cause the whole to become equalised in strength.

Soft-wooded Greenhouse Plants.—Primulas, Cyclamens, and Cinerarias should now be sown. Where the latter are required to flower by the end of the year no time should be lost in getting them in, as any attempt to hurry them into flower in the later stages will end in disappointment. Plants of Solanum Pseudo-Capsicum and S. Capsicastrum, that have been used during the winter, should now be cut close back, and immediately planted out in a warm south or west border; so treated, they will not suffer from frost after this time; whereas, if kept under glass until they

broke, and then turned out, the young growth would suffer unless kept in till so far through the ensuing month that all danger from frost would be over, in which case they never flower early enough to ripen their berries as soon in the autumn as desirable. So managed, they make much better plants, with more abundant healthy leaves than can be secured by growing them in pots. *T. Baines.*

FLOWER GARDEN.

Spring and summer flower gardening, as now practised in many establishments, gives an almost endless amount of labour and anxiety if both are expected to be done well; and if, as is the case this season, a late spring retards the opening of spring flowers, it is a matter of some difficulty to get the summer bedding commenced till well into June, *i.e.*, unless the spring flowers are uprooted when in their prime, which, of course, is not to be thought of. It will, therefore, be well for those thus circumstanced to give the summer bedding plants all the room possible, both as to roots and tops, that the larger plants may, in a measure, make up for the later period of planting. To make room for more tender plants, Calceolarias, Verbenas, Ageratums, Petunias, Gnaphalium lanatum, and other similar plants may now be planted out in turf pits at the foot of south walls or Celery trenches in soil consisting principally of leaf-mould, as in these roots are freely made, and their transference to the flower beds is scarcely felt. The hardier kinds of Pelargoniums may also, if necessary, be served in a similar manner, but the tricolor section and variegated kinds generally should be potted singly, and grown on in warmth for a considerable time to come. Coleus, Iresines, Alternantheras, Mesembryanthemum cordifolium variegatum, all should be kept under glass till the last week in May, and the same may still be propagated, if the stock is insufficient. Strong plants of Humea elegans, Eucalyptus globulus, Wigandias, Cannas, Dracænas, Acacias, and Ricinus, should now be transferred to a cool house, and, in another week or two, may be placed under the shelter of trees, walls, or sheds, preparatory to final planting out; this will make room for young stock of similar plants to be grown on in heat for some time longer. Where spring gardening is not carried out, the beds and borders having been duly prepared, much may now be done to advance the work at bedding time by marking out the design, arranging the colours, and planting such hardy plants as are intended to be used; Echeverias, Sedums, Saxifrages, Pansies, Violas, Golden Chickweed, and even Calceolarias may be planted with safety if the arrangements are complete. Hollyhocks may now be planted out, and, if offsets are taken now, and potted and grown on for a time in warmth, they will flower late in autumn; seeds of Hollyhocks may also be sown under hand-lights on a warm border, as also, in the same manner, Wallflowers, Antirrhinums, Sweet Williams, Lavender, Pansies, and Violas. Annual flower seeds of all kinds may also be sown in patches where they are to grow, and the autumn-sown should be thinned out, and if necessary transplanted. Sweet Pea and Mignonette are always appreciated, and these should be sown frequently, say at intervals of a fortnight or three weeks, to ensure a regular succession. The flowers of Violets are larger and more abundant from young plants, and as runners can now be had in abundance a new plantation should at once be made, and if planted in two or three different aspects a longer succession of flowers will be the result. There are no better varieties than the old Russian (the sweetest of all), The Czar, and the Neapolitan. The few warm days of the first week of this month have made the grass grow amazingly, and mowing will now require regular attention, for, if neglected at this season, the "bents" get up and make the lawn unsightly, till time can be spared to go over it with the scythe, as the machine will not cut them. New or recently laid turf will require well beating or rolling down previous to mowing, and if the weather be dry watering will be necessary till it gets established. *W. Wildsmith, Heckfield.*

FRUIT HOUSES.

In forward houses the earliest fruits will soon indicate signs of ripening; the degree of perfection attainable in these and other similar kinds of fruit which are subject to forcing operations materially depends on the course of treatment which is applied through the ripening process. Throughout this period air of a drier nature is most essential to secure the standard point of excellence; for this reason alone it is expedient to enforce proper care in regard to the subject of ventilation. If necessary apply the means for the purpose of keeping the night temperature at abont 60°, and that of the day at 65°, with a chink of air on constantly at the highest point of the ventilation, and as the case may be, according to the prevailing circumstances, augment or diminish the supply, embracing those opportunities which happen to allow of a current of fresh warm air through the house, and by degrees discontinue syringing the trees and floors, excepting to avoid a dust-dry state. In successional houses these syringings should be continued until the pips arrive at the stage of growth as referred to above. Give the necessary attention to stopping and tying-in the shoots. Where the laterals have been pinched-in and have restarted, pinch them again at the first or second leaf. In tying-in the shoots, allow ample space for growth, and see that more matured branches are not being injured from this cause. *G. T. Miles, Wycombe Abbey Gardens.*

Cucumbers.—Since my last article was written we have had a period of bright warm weather, highly favourable to the growth of Cucumbers, which should now be strong, healthy, and prolific, but care must be taken that they do not carry more than a fair average crop of fruit, as nothing is more injurious to Cucumbers than over-cropping. With increasing light the foliage may now be syringed twice a-day, more water may also be applied to the roots, and on no account must the dressing over at least twice a week be neglected. The young growths should be regularly stopped, thinned, and tied-in, old leaves gradually removed, and ill-formed fruit taken off before they begin to swell. If red-spider has gained a footing it must be stamped out at once; the remedy I have applied this season, and I never had my plants so clean and fruitful, has been a very weak solution of Gishurst or soft soap, followed by a light dusting with flowers of sulphur. If plants that have been a long time in bearing show signs of exhaustion, the pots or hills may be advantageously top-dressed with a thin coat of fresh horse-dung and old lime rubbish, in which Cucumbers and Melons make a profusion of healthy feeding roots, and the ammonia given off by the manure helps the foliage, and keeps insects in check. Plants in pits and frames may now be syringed and closed early on fine afternoons. A good covering of dry mats should also be applied early in the evening, when a little back air may be given and left on all night to allow the escape of rank steam. Maintain the necessary heat by means of dung linings. Keep a good supply of well-worked fermenting materials always in readiness for this purpose, and let the back and front linings be turned and renovated alternately. *W. C., April* 10.

KITCHEN GARDEN.

Favoured by the genial growing weather of the past fortnight, vegetation has made rapid progress, and much activity will now be required to keep pace with the wants of growing crops. The "stitch in time" applies with equal force to matters horticultural as to the rent in the garment, and nothing is more saving of future labour than a free use of the hoe while weeds are still in the seedling state, and the weather is dry and favourable for imparting the finishing stroke. Besides extirpating weeds, crops of all kinds are greatly benefited by having the surface of the soil frequently stirred; but as the roots, encouraged by the warmth of the sun and the superabundance of moisture in the ground, are now feeding at shallow levels, care must be taken not to penetrate sufficiently deep to destroy or disturb them. The Dutch hoe is perhaps the best tool to use among shallow-rooted crops at this season, as it causes less disturbance of the soil and leaves it sufficiently smooth without having recourse to the rake. Beet, Salsify, and Scorzonera should now be got in. To grow these smooth and clean, choose for them a piece of ground that is quite free from rank or long strawy manure, undecomposed leafy matter, or anything else likely to obstruct the main roots in their downward course, as when that takes place they branch away into numerous fibres and are spoiled for general use. Where salads are much in request during the winter season, Chicory is sure to come in useful. A few rows of seed of this, sown now, will afford an abundant supply of roots for taking up in the autumn or winter, for starting in any dark, warm place to get the young growth blanched. Whitloof, said to be superior to the above, is likewise cultivated for the same purpose, and should now be sown and similarly treated. No time should be lost in getting in the main crop of Carrots, if not yet in, as they take a long season's growth to get them of full size. There is none better for kitchen purposes during the winter than the well-known James' Intermediate; and for summer use in the young state the scarlet French Horn is quite unsurpassed. Small sowings of these should be made in light, sandy soil at frequent intervals, so as to have a constant supply of young, tender roots. A first sowing of dwarf French Beans should now be got in on a dry, sunny border, that is well sheltered by a high wall or fence to ward off frosts and cold cutting winds. A few sown at the same time in small pots, or in leaf-soil in boxes, to plant out in case these are destroyed, or for filling up cold frames as they become vacant, are sure to be useful. Scarlet Runners likewise transplant well, and come into fruit much earlier than when sown in the open. A box about 3 feet long, 18 inches wide, and 3 inches deep, will hold sufficient to plant a row 50 feet long. Any Seakale roots too weak to be of service for blanching should have the tops of the crowns taken off to prevent it from flowering. Others that have been cut and are now breaking again should have the young shoots thinned, leaving two or three of the strongest that they may each develope fine crowns. A mulching of rotten manure or a sprinkling of salt, or both, will materially help to strengthen it and keep it moist and free from weeds for the summer. Any roots that have been forced ought at once to be cut into lengths of 6 inches or so, and planted in trenched ground that has had a heavy coat of manure. Where roots are short for this purpose, seed may now be sown in similarly prepared soil, in rows 15 or 18 inches apart, where, if properly thinned, they will grow large enough for forcing next winter. Plantations of Rhubarb should likewise be made, that plenty of strong roots may always be available for lifting to force under cover of the Mushroom-house. Asparagus beds ought now to be cleaned and put in order, before the heads make their appearance through the soil, as then it can only be done with difficulty. A mixture of salt, guano, and soot forms a capital top-dressing for Asparagus, but it is as well to use the two latter after cutting has ceased.

Seed should now be sown in deep rich soil to afford the requisite plants for making new beds, as where roots are annually forced a constant renewal is necessary. Asparagus always succeeds best when planted after it has started well into growth, as then the roots get to work at once and soon establish themselves. The best beds I ever saw were planted after the tops had got into leaf, and I would therefore advise the formation of new ones to be deferred for some time longer. Cucumbers for planting on ridges should at once be sown, and pushed on in heat to get them strong for planting under handlights in May. Custard Marrows, or other approved variety, ought now to be sown and grown on in the same manner. Pot on Tomatos so as to get large and into bloom as quickly as possible, and gradually harden off such as are intended for planting out to train on walls or other positions. The herb beds will now require attention to get the different kinds divided, re-arranged and planted. Crops of this kind exhaust the ground, and ought therefore to be removed to fresh places. Camomile, Mint, Pennyroyal, and such-like subjects should be accommodated with moist shady places. Sow Sweet and Bush Basil, Marjoram and Borage, and any others raised annually from seed and for which a demand is likely to exist, that they may each be ready for use. *J. Sheppard, Woolverstone.*

Law Notes.

An Incorrect Salesman's Bill: Curry *v.* Stone.—This was an action brought on Wednesday last before Mr. Judge Bayley at the Westminster County Court. The plaintiff, a salesman of James Street, Covent Garden, sought to recover from the defendant, a retail dealer at Holloway, the sum of £15 5*s.* 8*d.*, being the balance of an account for Potatos and other goods sold and delivered. After the plaintiff had stated his case, Mr. Willis, solicitor for the defendant, directed his Honour's attention to several inaccuracies in the statement of account before the Court. When his Honour went through all the items in the account, the plaintiff acknowledged that several receipts given to the defendant had not been entered in his cash-book, and in cross examination by Mr. Willis said that some goods on June 12 were paid for at the time although charged for in the account before the Court.

The defendant, in answer to Mr. Willis, said he never had two sacks of Regents on May 23, and other goods as sold on other dates named.

At this stage of the case the plaintiff said that he would bring the man who delivered them if his Honour would adjourn the case for half-an-hour. To this the Judge consented, and when the plaintiff returned into Court, within the time, produced W. Hale, his porter, who stated he kept no books, and could not state what goods he delivered, nor give any dates, but he had delivered many goods to the defendant.

Upon this the learned Judge said that, from the incorrectness of the plaintiff's claim, and the unsatisfactory manner in which his books were kept, he must, on the plaintiff's own showing, reduce the claim to £3 18*s.* 11*d.*, with costs on that amount.

Howe *v.* Hampton.—There are one or two errors in your report of this case in last week's number. The defendant, in answer to our cross-examination, admitted that he never made any complaint or asked for an allowance on account of the bad Potatos until applied to for the cash in March, and the defendant, not plaintiff, as stated by you, was ordered to pay the amount claimed. *Cordwell & Tasman, Plaintiff's Solicitors, 2, Serjeants' Inn, Chancery Lane, London, April* 12.

HORTICULTURAL EXHIBITIONS, 1876.

APRIL.

25.—Manchester Botanical and Horticultural Society. Exhibition of Auriculas, &c., at the Town Hall.
26.—Royal Botanic Society. Second Spring Show.
27.—Royal Horticultural Society of Ireland. Spring Show.
30.—Opening of the International Horticultural Exhibition at Brussels.

MAY.

3.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
5 and 6.—Alexandra Palace. Flower Show.
10.—Royal Agricultural and Horticultural Society of Jersey. Spring Show.
10.—Glasgow and West of Scotland Horticultural Society. Summer Show.
10 and 11.—Royal Aquarium and Summer and Winter Garden. Flower Show.
17.—Royal Horticultural Society, South Kensington. Meeting of Fruit, Floral, and Scientific Committees.
18.—Royal Horticultural Society of Ireland. Second Spring Show.
18.—Reading Horticultural Society. Spring Show.
19 and 20.—Crystal Palace. Flower Show.
24.—Royal Botanic Society. Summer Exhibition.
24 and 25.—Tiverton Horticultural Society's Show.

THE

Gardeners' Chronicle.

SATURDAY, APRIL 15, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY,	April 19	Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M. Sale of Orchids, at Stevens' Rooms.
THURSDAY,	April 20	Sale of the Lease of the Pine-apple Nursery, by the Messrs Stevens.
SATURDAY,	April 22	Sale of Hardy Plants and Bulbs, at Stevens' Rooms.

IT is somewhat singular that in the recent discussion as to the desirability or not of PRUNING FRUIT TREES, and as to the best mode of effecting that operation, if thought desirable, so little heed should have been given to those first principles on which the successful art of pruning depends.

Few points in vegetable physiology, for instance, are better established than the antagonism, if we may so speak, between the growing and the fruiting tendency. A certain amount of growth, a certain stage of maturity, must indeed be attained before the flowering or fruiting process can be satisfactorily established. But when once this stage has been arrived at, when once sufficient nutriment has been stored up in the tissues of the plant, or, at least, when once the plant has been placed in such a condition that it can procure what food it wants, either from the soil and atmosphere, or from its own stored accumulations—when once these results have been arrived at, then the antagonism to which we have referred begins to show itself. We see it in the case of bedding plants in a wet season—the unusual moisture and the high temperature combined driving the plant into the exuberant formation of leaves and the corresponding deficiency of flower. We see it notoriously in the case of manures: powerful stimulating manures applied at an early period of the plant's growth favour the tendency to produce leaves and what gardeners call "sappy" growth.

On the other hand, restriction of food or drought have the opposite tendency of promoting consolidation, "ripening the wood," and inducing the flowering condition. Before he is entrusted with the knife, the pruner must have realised thoroughly the truth of these remarks. They are obvious enough, and they are often talked about a good deal, but we doubt whether in actual practice the lessons they teach are sufficiently acted on. Pre-eminently necessary also is it for the successful pruner to study the life-habits of the particular plant on which he proposes to operate—every Rose grower knows how different in this respect are different varieties of Roses. Every observant gardener knows what differences exist between the different varieties of Pears in the same matter. In some cases it is difficult to trace these differences till the results are apparent—till it is too late in the season, in fact, to make any useful application of the knowledge gained. In other instances it is easy to foretell the future habit of the plant from its appearance when at rest, or when the buds are just pushing. It is this circumstance that leads us to direct the attention of observers, and especially of those who are interested in the matter of scientific pruning, to the buds of fruit and other trees at this particular season—to suggest to them that they should study their diversities of form, position, and number—reflect on them, and base thereon correct rules for pruning.

Each case must, it is true, be treated on its own merits. No general rule can be laid down; but, in order to ascertain what these "merits" are, careful study must be made. No one needs to be told of the difference between leaf-buds and fruit-buds, or mixed buds, wherein leaves and flowers are mixed. So, too, the position of the buds at the ends or at the sides of the shoots is sufficiently obvious. But it is not so well known—or, rather, it is frequently overlooked—that in the same leaf-axil or junction between the leaf and the stem there may, and often do, exist more than one bud, and yet the knowledge is important, because the form of the tree or shrub, and in some cases the production of flowers, depends on the way in which these buds are treated. We do not intend at present to enter into details as to this matter, but we may briefly indicate the principal methods of arrangement of the lateral buds as given by competent observers.

The most common of all arrangements of the side buds is the presence of a single bud in the axil of the leaf, between it and the stem. But besides this we often meet with several buds in the same axil, and some of these may be flower-buds, some leaf-buds, or barren tendrils as in the Vine. These supernumerary buds, if we may call them so, are arranged in various manners. Thus the adventitious bud may be above or below the primary bud, or they may be some above and some below, or all above or all below it. Again, the supernumerary buds may be placed on one or on both sides of the primary bud. Still more rarely there may be two buds of the same age or degree side by side, or one above another, in the same axil, while in a twig of the common Maple now before us there are close together four pairs of buds, originating in four leaf-axils, of which the two lower pairs have their constituent buds placed one above the other while the two upper pairs, which cross the former at right angles, have them placed side by side.

Other arrangements might be cited, but these are enough for our present purpose, and when we say these buds are generally of different ages, that some are leaf others flower buds—so that by skilful management a whole season may be gained and a crop secured where, if left to Nature, leaves only, or in overwhelming preponderance, would be formed—we have said enough to show the importance to young gardeners ambitious to prune trees and to "make a good job of it" of a careful study of buds. If at some seasons "look to the roots" should be the watchword—"look to the buds" is one that is specially seasonable now, with a view to the future.

—— MR. MENZIES, gardener to R. FRYER, Esq., South Lytchet, Poole, has favoured us with a box of beautifully fresh blooms of Camellias, gathered from trees growing in the open air. Mr. MENZIES writes that, although last autumn was wet and dull, and the spring cold and late, the trees retained their buds, and are flowering profusely. It is expected that they will be in good condition till late in May.

—— Three hundred and twenty-five species of plants indigenous to Dumbartonshire have been exhibited before the Helensburgh Horticultural Association, in competition for the handsome medal presented by Mr. ALEX. BREINGAN. Among these were some rather rare plants, such as the Narcissus Pseudo-Narcissus, Convallaria majalis, Ornithopus perpusillus, Chrysosplenium alternifolium, Smyrnium olusatrum, &c. It was also reported at a late meeting of the Association that the American Claytonia alsinoides had established itself in Arden Glen, and formed a most beautiful sheet of flower during the early summer months.

—— The following Orchids are now flowering in the collection of W. TERRY, Esq., at Peterborough House, Fulham:—Cypripedium barbatum, C. villosum, with flowers 4½ and 5 inches over; Vanda suavis, one plant with twenty-six flowers; Phalænopsis Schilleriana, one very good variety; Cattleya Skinneri, Oncidium macranthum, Phaius grandifolius, Dendrobium chrysotoxum, several plants of which have sixteen spikes. In the Cattleya-house Dionæa muscipula is throwing up a flower-spike, and it has its last year's seedlings by its side. Cephalotus follicularis is also showing flower.

—— PRIMULA CORTUSOIDES AMŒNA, and its varieties LILACINA GRANDIFLORA and ALBA, are just now very charming greenhouse plants; but, although perfectly hardy, are not so well adapted to withstand the winds and storms of our climate as are Primula elatior and other well-known forms. The cortusoides section are easily propagated by division of roots, but are not free seeders, only carrying a pod now and then under exceptional circumstances. Any attempt to engraft upon them the firm, erect habit and varied colouring of the elatior varieties would seem to have failed as far as change in the habit of the plant is concerned; but, judging by the variety of colours produced by a batch of seedlings now in bloom, raised from flowers that had been fertilised by elatior pollen, it would seem that the cross had not been entirely without effect. The seed-parent was P. cortusoides lilacina, the most robust of the section, and out of about two dozen plants scarcely two are exactly alike. In a few cases, forms closely resembling lilacina, grandiflora, and amœna, have been produced, others are remarkably fimbriated, whilst others yet are perfectly round, and in the matter of form and stoutness of petal advances upon the named kinds. One has flowers of good purple, and the lightest the back of the flower pale mauve and the face pure white. There are several intermediate tints, all very pretty, but a select few indicate decided improvements. With care and patience the P. cortusoides may yet be brought to rival the P. sinensis in size and beauty.

—— M. DUTAILLY has recently described before the Linnean Society of Paris a case where the LEAFLETS of a STRAWBERRY were tubular, forming small pitchers like those of a Sarracenia. There was no fusion of the margins in this case, but simply an exaggerated condition of a peltate leaf. The author speculates on the probability of the production of a race of these pitcher-bearing Strawberries.

—— M. RIVIÈRE, at a recent meeting of the Central Horticultural Society of France, mentioned the circumstance that between Nice and Monaco was a spot so unhealthy that the railway company were compelled to change their resident officials every two or three months. Some years ago, however, a plantation of EUCALYPTUS GLOBULUS was made, and now no inconvenience is experienced. We heard a similar story in the same locality, as also near Ventimiglia. Such statements, however, though they doubtless have a substantial basis of truth, should yet be thoroughly sifted.

—— We understand that Mr. WARNER'S VANDAS will be in good bloom in a few days' time, and will continue so for about a fortnight. If any lover of Orchids would like to call at Broomfield, Chelmsford, Mr. WARNER will be pleased that his gardener should show them to visitors. One single stem has, we believe, five good spikes on it.

—— M. LAMARE, writing in the *Revue Horticole*, alludes to the great variety in colour of flowers, habit, &c., that he has obtained from seedlings of × Begonia Sedeni. Of 1200 plants raised from that hybrid scarcely two are alike. Among them are yellow, magenta, rose, lilac, vermilion, and pure white

FIG. 91.—ODONTOGLOSSUM CIRRHOSUM.

flowers. In some cases the male flowers are double, and in another case hermaphrodite flowers were produced. All this is quite consonant with other facts well known to hybridists.

—— The preliminary works for the NEW VEGETABLE MARKET, to be erected by the Corporation on the vacant land between Charterhouse Street and Snow Hill, and adjoining the new Poultry Market, are (says the *Builder*) actively proceeding. The building is to be uniform in its external features with the two markets already erected, and will extend on the south side in a westerly direction to Farringdon Street, in a line with the south boundary of the Poultry Market. Between the south boundary and Snow Hill and King Street a new street leading out of Farringdon Street will be constructed on the vacant land, and will give access from the last-named street to all the three several markets on the south side in a manner similar to that by which the markets are now entered from Charterhouse Street on the north side. The new street will cross over the Metropolitan and London, Chatham, and Dover Railway at the point where the lines diverge respectively to Moorgate Street and Farringdon Street Stations. A considerable extent of property on the east side of the railway has already been cleared away for the purpose of continuing the new street in that direction. The new market will occupy an area of upwards of 2 acres in extent.

—— Messrs. WEBBER & Co., of the Central Avenue, Covent Garden, exhibited a group of ST. MICHAEL'S PINES at the Royal Aquarium Exhibition on Wednesday and Thursday last, which created a considerable amount of interest among growers, and indeed quite took the wind out of the sails of some of them. Ten fruits were staged, of the average weight of 7 lb.—handsome in shape, with large well-swelled pips, and the fresh medium-sized crowns so much appreciated by Covent Garden salesmen. Many of the market growers have already given up Pine culture, because they cannot compete profitably with the St. Michael's fruits, and if the latter continue to improve in the same ratio as they have done the last few years, the total discontinuance of winter Pine culture is only a question of time. The average price of St. Michael's Pines is about a guinea, but the finest samples, such as those shown by Messrs. WEBBER, are worth from 30*s.* to 35*s.*, and English growers cannot produce Smooth Cayennes of a similar quality for that money. The Smooth Cayenne is the only variety that comes from St. Michael's in quantity, but the Charlotte Rothschild is spreading among the growers there, and some really handsome fruits of that variety have lately been sold by the Pudding Lane brokers. But the St. Michael's Pines only come into the market during the winter months; and there is still the spring and summer seasons, when good Pines realise a good price. This, we think, is the demand which English growers would do well to turn their attention to. It will pay them better to give up the culture of winter Pines, and grow Queens for spring and summer consumption instead.

—— Mr. A. J. COOK, of the Michigan State Agricultural College, in a pamphlet on the "Injurious Insects of Michigan," gives a valuable hint to housekeepers whose carpets are in danger from the attacks of the CLOTHES MOTH. "Take a wet sheet or other cloth, lay it upon the carpet, and then run a hot flat iron over it, so as to convert the water into steam, which permeates the carpet beneath and destroys the life of the inchoate moth."

—— RUDGEA MACROPHYLLA is beautifully in flower in the stove at Kew. The pure white flowers are borne in a large, dense, and globose head. Their effect is that of Stephanotis, though without the same substance and perfume. Individually they last but a short time, though buds open as fast as the flowers fade, and thus it is kept in beauty for at least a fortnight. The buds alone are highly ornamental. It would doubtless be a great advantage to remove to a cooler and drier atmosphere than where grown. As evidence of its beauty and purity of tint, we may mention that it has graced the bouquet of a Royal bride, for which, from its size, it perhaps formed the centre. It flowers when quite small, as this plant is no more than a foot high. The leaves remind one of Medinilla, though on close comparison are found of less breadth. It is a native of Rio de Janeiro, where it forms a shrub 6 feet high, and it is supposed to be the first species introduced into the gardens of Europe. It was figured in the *Botanical Magazine* of 1867, from a specimen flowered by Messrs. E. G. HENDERSON & SON, who have since presented a plant to the garden. The genus belongs to the tribe Psychotrieæ of Rubiaceæ, is placed next to Palicourea, and the several species are all South American.

—— VIOLET VICTORIA REGINA, raised by Mr. GEORGE LEE, of Clevedon, Somerset, and distributed two or three years ago, proved to be an introduction of high-class merit. The Floral Committee, with a commendable caution, hesitated to give the variety a certificate when only cut flowers were before it, on the ground that it did not differ sufficiently from The Czar, which is supposed to have been its parent. Cultivators of the two varieties are found bearing their testimony to the decided value of Victoria Regina over The Czar, for the former appears to be of a more robust habit of growth, is earlier, the flowers are larger, more massive in substance, of better form, and deeper in colour. An exquisite perfume is superadded to the foregoing list of most desirable qualities. Some who formerly grew The Czar have now abandoned its cultivation for Victoria Regina. At Clevedon Mr. LEE gradually grows the latter almost exclusively for the cut flowers, and has a great demand for them in the Bristol market. His new variety Prince Consort he looks upon as marking as distinct an advance on Victoria Regina as this did on The Czar, but it is doubtful if it will ever be distributed, as Mr. LEE asserts it is so valuable to him for the cut flowers it produces that it will pay him best to keep it exclusively in his own hands. Mr. LEE grows his Violets on the south slope of a hill with a limestone subsoil, and he has had to prepare a suitable soil at a cost of something like £200 per acre, but the result proves most satisfactory. One good method of growing this fine Violet (Victoria Regina) for the sake of its cut flowers in early spring would be to plant out some clumps on a warm and shaded south border in early autumn in patches that might be readily covered with a frame, then to top-dress well with leaf soil in early spring as soon as signs of growth set in, and then cover with a cold frame. Smaller patches might be covered with old-fashioned hand lights, or any of the more modern contrivances for protecting plants at this season of the year. Plants potted in autumn and wintered in a cold frame would also flower early in the year, but the plants should be well exposed except when some frost prevailed.

—— Opportunities are frequently being afforded to chronicle gardening operations in many aspects, but it is rarely that one finds an illustration on shipboard. The fine sailing clipper-ship *Lochmarie* is now in the London Docks, having just returned from a ten months' voyage from Melbourne. In the saloon of the vessel can be seen several pots of dwarf Nasturtiums in full bloom, occupying the cross-pieces or beams of the skylight which lights the saloon. One of the sailors, having a taste for flowers, grows some dwarf Nasturtiums in the pots every voyage, and has done so for three years past without change of soil. The seeds are sown soon after the ship leaves port on her outward voyage, and the plants soon grow into size and come into flower, and remain in bloom till the ship returns to port. When seen a few days ago the plants were in a healthy condition, hanging down some 2½ or 3 three feet over the sides of the pots, and appeared as if they would remain in flower for some time to come.

—— In our next issue we propose to publish the first of a series of papers on the known species of IRIS, from the pen of Mr. J. G. BAKER. What Mr. BAKER has done for the Lilies, the Narcissus, and the Crocus, he will now do for the Iris, which has been too long neglected. In the meantime we shall be glad if some of our correspondents will kindly favour us with specimens.

—— Mr. WILLS' NEW DRACÆNAS have vastly improved since they were seen at South Kensington in November last, and those who are desirous of seeing them in perfection should visit the Melbourne Nursery, Anerley, during the coming week, as the collection will at the end of that time be broken up, to furnish a contribution to the forthcoming exhibition at Brussels. Mr. BAUSE has got them into fine growth, and as they are now all propagated plants, all are more or less breaking into brilliant shades of colour such as they had not previously developed, thus still further adding to the splendid character they have gained. The name of Fulgens, given to a plant described at p. 615, vol. iv. n.s., does not now appropriately apply to the plant, so much has it changed in its colours, and it has consequently been altered to Leopoldii.

—— Those entrusted with the management of the first FLOWER SHOW at the ROYAL AQUARIUM, WESTMINSTER, deserve more than a word of credit for the successful attempt made by them to break away from the tiresome monotony of flower shows, and the ugly arrangement too prevalent on such occasions. The show, of which a report is given in another column, was not large, nor were its constituent elements very remarkable, but the grouping was, so far as it went, excellent, and gave promise of what may be done on future occasions when the material at hand is larger and more copious. The bays, into which the nave of the building is divided, were filled with well grouped masses of flowers and foliage, the architectural arrangements lending themselves well to this breaking up of the groups, as also did the intervention of Tree Ferns, Palms, and other fine-foliage plants in the permanent beds. Two of the groups in particular struck us as worthy of special notice. In the one circular baskets of cut Roses (Maréchal Niel principally), from Messrs. Paul & Son, of Cheshunt, interspersed with pans of Isolepis gracilis, Dendrobium, &c., formed the centre, edged with a brilliant line of Cyclamens and backed up by small Palms and pot Roses intermixed. This group furnishes a hint to Rose show managers, of which we trust they will not be slow to avail themselves. A similar group on the other side of the nave was also strikingly effective. It consisted of a central zone of pot Roses from Messrs. William Paul & Son, of Waltham Cross, edged by tricolor Pelargoniums and backed up by specimen Ivies in pots. We congratulate the management on this first attempt, and look forward with interest to the forthcoming show of Orchids, and which, from the splendid prizes offered, should be an unusually fine one. It is worth while mentioning that the new system of glazing patented by Mr. RENDLE, and adopted for the roof of the Aquarium, has up to this time fulfilled all the anticipations expressed concerning it, and has satisfactorily stood the severe test to which it has recently been exposed.

—— An article in the *Revue Horticole* for March 16 enables us to supplement the notes on ERYNGIUMS given at p. 76 of the present volume. In the first place we will take this opportunity to correct an error in the place quoted. Speaking of the flower-heads of the annual species, E. Leavenworthii, it is stated that they are surmounted by a crown of bracts after the manner of the inflorescence of Eucomis and Guavas, instead of Ananassa, or Pine-apple. As mentioned in our notes, several of the Eryngiums with parallel-nerved Bromelia-like leaves have been in cultivation in France for several years, and are now raised in large quantities, and, therefore, the cultural experience of M. CLEMENCEAU, the writer of the article in question, may be welcome and useful to those of our readers who wish to grow these handsome ornamental plants. They delight in warm, light, open situations, and in a rich, loamy, deep rather than a light soil. On the approach of winter the leaves should be gathered up on a fine day and tied up together, horse-tail fashion, as one would those of Gynerium, but on no account should they be cut off. Then take two or three barrows of dry leaves or litter and bed around each tuft. The plant should be covered with a straw steeple-shaped protector in very cold or wet weather. In open dry weather the caps should be taken off; although the old-established plants are comparatively hardy, it is not so with the younger ones, and they should not be committed to the open ground until they are two years old. When planted out at this age in spring, about the beginning of May they will grow rapidly in a suitable soil, and become thoroughly established before the succeeding winter. At the present time the best method known for propagating these plants is from seeds. These should be sown in early spring, on a hot or warm

bed, either in the bed itself with a thin covering of soil over the seeds or in well-drained pans. As soon as the young plants have formed their third or fourth leaf they should be potted off singly in thumbs or pricked out, and much will depend upon subsequent repottings as to the growth they will make in the first season. The seed should be sown in almost pure peat, but this should be gradually replaced in successive pottings by leaf-mould or thoroughly rotten dung and loam, with a little sand. We may mention that seeds of E. Lasseauxii, pandanifolium, eburneum, and bromeliæfolium are in commerce. From the figures given in the *Revue Horticole*, E. eburneum is very near E. Serra (see p 76), but it is a more robust plant, and has ivory-white flower-stems; and E. Lasseauxii is very near pandanifolium. The plant we figure under the name of E. paniculatum, is not, as we suggested, the same as E. Lasseauxii, whose flower-stems rise to a height of 10 feet. Plants of this species four years old in the Luxembourg gardens, Paris, are described as having seven to nine flower-stems at the same time.

Fig. 92.—Odontoglossum cirrhosum, showing habit.

—— Young plants of the Tasmanian Eucalyptus coccifera are reported to have borne 17° of frost in France this season without receiving any injury. This species is doubtless one of the hardiest of the genus, as it inhabits the summits of mountains, 3000 to 4000 feet high, in Tasmania. It has long been cultivated in England, and it was figured in the *Botanical Magazine*, plate 4637, in 1852. Sir William Hooker there says, "It forms a most graceful tree 20 feet or more high in the beautiful gardens of Mr. Veitch [presumably of Exeter] and about London braving our severe winters when trained to a wall." From the latitude and altitude of the home of this species one would expect it to be much hardier than E. polyanthemos, which is rarely injured in the open ground at Kew. We may name a few other Tasmanian species likely to prove hardy in the south-west of England and Ireland. E. Risdoni, the Drooping Gum of the colonists, described as a very handsome tree; E. urnigera, a tree with spreading branches, sometimes attaining 50 feet, not uncommon in alpine districts; E. vernicosa, a dwarf bushy shrub with very small leaves, found at the summits of Mount Fatigue and Mount Lapeyrouse; and E. Gunni, a small tree, abundant in alpine districts at an elevation of 3000 to 4000 feet, often forming small forests; it is the Cider Tree of the colonists. Where business is desirable, seeds of other species, also found on the mainland of Australia, should be procured if possible from Tasmania, because they are likely to prove hardier from thence. Such are E. coriacea, amygdalina, globulus, and viminalis.

New Garden Plants.

Odontoglossum cirrhosum, *Lindl.**

For age this is the fifth of all Odontoglossa. Colonel Hall (one of those excellent gentlemen amateurs, so copious in England) gathered the plant on the western declivity of the Andes, at 6000 feet elevation, in Ecuador. An eight-flowered panicle, bearing two flowers on the small side branch, was all Sir William Hooker possessed. Our sharp-sighted Dr. Lindley may have made by candlelight his sketch of a single flower, inspired by three diameters. Having seen no living specimen, he could not well guess what a wonderful thing this plant would be alive. And when writing the Odontoglossa for the *Folia*, he did not consult the Hookerian Herbarium at all. Thus he kept his old mistake about the "*labelli lamina cordata*," and the "*flores verosimiliter flavi.*" It was I who guessed what a wonderful thing the plant was, and when M. Wallis was in Ecuador M. Linden directed him, at my suggestion, to collect Odontoglossum cirrhosum *coûte qui coûte*. M. Wallis found nothing except a very hideous species with dirty colours, which he thought cirrhosum. It was very lucky for M. Linden that there came only one or but few specimens of that sordid plant. Much later, the excellent Scotch botanist, my highly-valued correspondent, Dr. Jameson, gathered a very few plants at my instance, shortly before coming to Scotland. Now the hope of seeing the plant was given up. Imagine my pleasure when, last summer, just at my starting for the surprises of the Cologne Exhibition, M. Ortgies, of Zurich, as well as Mr. Bull, sent me several rich dried spikes and panicles of my beloved Odontoglossum. There it was! It is M. Roezl's merit that it was found by his nephews. Messrs. Klaboch, the single Czechian collectors, would appear to have been so captivated by the splendid thing, with its petulant provoking bristles and the harlequin colours, that they dried specimens in rather good condition, which came over unbroken and without mould, thus marking a red-letter day in their life for doing a *hors d'œuvre*. Mr. Bull seems to have immediately appreciated the beauty of the plant, since he took the whole lot of it under his hands. And now comes the enjoyment. The Odontoglossum flowers, and is expected to flower, at several places, and there will be no more collectors of cool Orchids who will not be persuaded of the necessity of having dear cirrhosum. It had a great success at the last meeting of the Floral Committee of the Royal Horticultural Society, being praised and "first-classed" by unanimity. I have at my side a spike from Sir Trevor Lawrence's garden. I cannot help thinking what would have been the feeling of Mrs. Lawrence, of Ealing Park (the most enthusiastic lady Orchidist who ever lived), at seeing the glorious plant, and in the hands of her son. Mr. Joseph C. Spyers (the lucky grower of it) hopes for thirty flowers on the panicle of a good plant, and he may be right, though my best herbarium specimen has but twelve flowers.

The sepals are lanceolate, ending in bristles. The petals are much broader. The lip is cuneate, dilatates going out in two blunt, wavy angles, the upper par, bearing an open sheath around the column; the anterior expanded. The anterior middle part is linear-acuminate—a little shorter than the lateral sepals. It has at its base two collateral curved blunt horn-like yellow processes, reminding one of the horns of a Gnu antelope. The column is trigonous. There are upright linear-subulate tendril-like wings, one on each side of the conical rough anther. The anterior part of the column has short hairs. The colour is a good milk-white, and the texture is rather firm. There are deep purplish violet dark spots on sepals, petals, and the anterior inferior part of lip. The basilar part of the lip is yellow-whitish at both sides, and with violet-purplish radiating lines, which make a very nice impression, reminding one of certain Cœlogynes and Erica coronaria. There can be no doubt that Odontoglossum cirrhosum, Lindl., is one of the most lovely Orchids we possess. *H. G. Rchb. f.*

[Our engravings (figs. 91, 92, pp. 501, 503) were made by Mr. Worthington Smith from the plant shown by Spencer Brunton, Esq., Beckenham (Mr. Henley, gr.), at the Royal Horticultural Society on April 5. Eds.]

Phalænopsis Mannii, *Rchb. f.*

This plant was described in our columns, 1871, p. 902. It is rather near P. cornu cervi, but its flower-stalks are scarcely winged, and the bracts are much smaller. Its strong roots are very numerous in the wild plants, just as in the other named species. The leaves are considerably more than a foot in length in vigorous specimens, and more acute. The peduncles, too, reach a height of more than a foot in very strong plants, and appear to take a panicled development. The flowers are very much like those of Phalænopsis cornu cervi. Sepals honey-coloured, the lateral ones twice as large as the superior ones, with transverse and longitudinal brown bars, sometimes just looking like Hebrew letters. The petals are very much smaller, of the same colour. On the outside all these organs are honey-coloured, showing a very uncertain hue on the bars. The lip is tripartite, the side laciniæ ligulate, retuse, with purplish-yellow lines. The middle claw is whitish, and so is the crescent-shaped anterior blade of the lip. In the middle lines stands an ancipitous keel, a transverse organ with two bristles and a callus. The yellowish, rather slender column has two angles at its foot, which are brownish. A plant with many flowers open at once must be a rather nice thing. And here is another divergence from P. cornu cervi, that this species bears many flowers open at once. It is one of the discoveries of M. Gustav Mann, now in India in the forest department, who found it in Assam. It is dedicated to him, who is surpassed by nobody in his wonderful collections made in tropical Africa, as the late Dr. Welwitsch himself used to say, and as other high authorities have gladly acknowledged. I have never succeeded in obtaining fresh flowers till to-day, April 5, when I got the first flower, from H. G. G. Elliott, Esq. The first, which I have to thank my friend, M. Mann, for, is more than 2 inches long, and has four ribs and two keels—a most remarkable instance, provided it is normally thus. I have obtained only a single specimen, a rather slender thing. *H. G. Rchb. f.*

* *Odontoglossum cirrhosum*, Lindl.—Pseudobulbis ligulatis ancipitibus; foliis lineari-ligulatis; pedunculis racemosis seu paniculatis densifloris; bracteis triangulis acuminatis ovaria pedicellata dimidia haud æquantibus; sepalis ligulatis acuminato-aristatis; tepalis bene latioribus, æque cuspidato-aristatis; labello cuneato dilatato in lacinias late-obtusangulas undulatas, lacinia mediana a basi lineari triangula aristata, sepala non attingente quoad longitudinem; callis corniformibus ascendenti-curvatis, obtusis geminis in basi laciniæ anticæ; columna trigona antice puberula papulis acutis tenuibus ala lineari-setacea utrinque erecta juxta antheram conicam minute scaberulam. Sepala et tepala alba maculis atroviolaceopurpureis. Labelli laciniæ laterales flavæ, margine utrinque superiori albæ, lineis atroviolaceo-purpureis radiantibus approximatis, lacinia media alba, macula seu maculis atropurpureo-violaceis.—In Andibus Ecuadorensibus, Hall! Jameson! fratres Klaboch!

Home Correspondence.

Bees and Crocuses.—Mrs. Watney alludes to bees now visiting Crocuses. It is perhaps worth calling attention to the adaptations of those flowers for insect fertilisation. The attenuated base of the perianth where the "nectar" is secreted, as well as the erect stamens with "extrorse" anthers and the enlarged erect petaloid stigmas, which, excepting in the common yellow Crocus, are elevated above the anthers, and so avoid self-fertilisation, are all concerned in the process. With regard to the perianth, its smooth surface and contracted base afford no foothold, and so prevent a bee from walking down it; hence she is compelled to make use of the central column of stamens and styles, grasping which firmly by the legs, and pushing her way head downwards, she easily reaches the top of the tube of the perianth where the nectar is secreted. The anthers, by bursting outwards, cover the underside of her body with pollen. Flying off to another flower, she alights on the top of the column of stamens and pistil. The "petaloid" stigmas of the latter, with their erect, brush-like edges, which are covered with long papillæ, then sweep off the pollen from the bee's abdomen. It is curious to note how different genera of the same "order" (Iridaceæ) to which the Crocus belongs have become specialised for the same purpose, but in entirely different ways. Thus, in Iris, each of the three petaloid stigmas resembles the end of the bowl of a spoon, with its concave surface looking downwards; each stigma thus arches over a stamen, the anther of which, as in the Crocus, bursts outwards and overhangs a cluster of "collecting hairs" on the underlying leaf of the perianth. The bee crawling over these latter, in order to reach the nectariferous pore at their base, dusts her back with pollen, which, on entering another flower in the same manner, is scraped off her back by the inverted spoon-like stigma. In Gladiolus both the perianth and the position of the stamens are modified for insect agency. This flower has become irregular. The anterior parts of the perianth are differently coloured from the rest, and furnish by means of streaks a "guide" to the fertiliser. The three stamens by means of twists in their filaments ascend together along the back of the flower, and so bring their anthers parallel to one another and which then overhang the orifice to the tube, much in the same way as in many of the Labiatæ and Scrophularineæ, while the stigma projects in front beyond the anthers: so that an insect alighting in front and diving into the flower gets dusted by all three stamens (instead of by one only at a time, as in the Iris) somewhere on the back of the head and thorax, and on flying to another flower is struck by the projecting stigma on the exact spot where the pollen had been previously deposited. In Ixia and several other genera we have regular flowers, which do not apparently afford any very special methods by which the flowers are fertilised. In the little Trichonema Columnæ, Reich., of the Channel Islands, the style and forked stigmas are elevated considerably above the stamens, so that in this case also it would seem that cross fertilisation by insects is necessary. *George Henslow.*

The Duke of Buccleuch Grape.—My experience of the Duke of Buccleuch Grape exactly corresponds with that of Mr. Hinds, p. 464 of last week's *Gardeners' Chronicle*. We have only one plant of it here, and at the present time it is loaded with bunches of the most vigorous kind, which will be in bloom in about eight days. How "the Duke" may finish is quite another thing, and may form the theme of some further remarks. No one can doubt, I think, but that "the Duke" is a very near relative of the Champion Grape. I may be allowed to say that we have grown and exhibited the Muscat of Alexandria Grape with a fair amount of success for the last fourteen years, and I have no hesitation in saying that a Vine, whether Duke or Duchess, that will not do fairly well where Muscat of Alexandria flourishes, cannot be too soon consigned to the rubbish-heap. May this not be the fate of "the Duke." *J. McC., Alexandria, N.B., April* 10.

Horticultural Repartee.—As the *Gardeners' Chronicle* has favoured its readers with a rather humorous display of a tradesman's idea of advertising, I venture to follow it up with a somewhat witty remark of an old gardener I once knew in Warwickshire, who at the age of sixty assured me he had only spent 1½*d.* in his life on medicine in the purchase of a few pills, attributing his excellent health to the constant outdoor exercise of his profession. Even at that age he was in considerable demand for various neighbouring gardens. Failing, however, to fulfil an engagement with the country practitioner of the same village where he lived, the latter threatened not to employ him again, whereupon my worthy friend remarked, "Well, sir, if you won't employ me as your gardener, I hope you won't cease to be my medical man!" *G. H.*

Polyanthus Golden Prince.—Mr. Tyerman, in his letter on hardy Primroses in your issue of the 8th inst., very justly praised the beauty of Polyanthus Golden Prince, and did not say a word too much in its favour, but he went on to give me credit as its raiser, to which I have no claim. I suppose he must have misunderstood or forgotten what I said about it. The fact is, it is a very old plant, and I grew it as a boy more than forty years ago, but of its origin I know nothing. *J. G. Nelson, Aldborough Rectory, Norwich.*

The Great Orme's Head.—All botanists will regret to hear that the copper mines on this wild promontory are to be re-opened and extensively worked by an English company of wealthy speculators, at least such is the report that has reached us from Welsh friends, and I have since seen it confirmed in the local papers. Adieu, then, to all delightful botanical wanderings over the rugged Orme in search of the plant *par excellence* of the rock, the famed Cotoneaster; the delicate little Scilla verna's bright blue blossoms, and the pink and white downy flowers of the Gnaphalium dioicum will disappear under the miner's foot, whilst tramroads and other abominations cut up the Cistus marifolius which now at certain seasons dots the green turf with its small yellow bloom. Fashionable visitors to Llandudno have done much towards despoiling the Head of its chief charm—grand and savage loneliness; but these mines will destroy the place, and probably drive the visitors across the Straits to Old Beaumaris, a charming little seaside town in the island of Anglesea, rich in pretty walks and drives, superior to Llandudno in many respects, but lacking the botanical treasures of the Great Orme's Head. I noticed, when I was at Llandudno about four years ago, that very few Ferns grew either on the Great or Lesser Orme (a rock at the other end of the bay), whilst Anglesea abounds with them; but the yellow-horned Poppy, the Sea Convolvulus, a pretty kind of Catch-fly, and various Saxifrages compensate for their absence. The Goldylocks has, I am told, been found there on a ledge of rock, not far from the spot where the Cotoneaster grew—I write "where it grew" advisedly, since a lady looked for it in vain last year; the spot where it once flourished was, she said, occupied by Privets and Brambles. *Helen E. Watney, Liss.*

Helleborus niger, L.—Your last on this useful plant gives me the idea to tell you an experience of mine. In the Botanic Garden we have to grow some Hellebores in full sunshine on the so-called "system"—a systematical arrangement of hardy herbs. Rather disgusted with the result in the case of those Hellebori which love shade, I ordered some plants of each—as far I know of their loving shade—to be planted under our Taxodia. H. niger became very vigorous (the so-called altifolius of Hayne), and its calyx, in lieu of being white, or white and washed a little with light, sordid purple, changed to deep purple—a little sordid, indeed, but rather pretty. It would be interesting to hear if this is an accidental or a constant experience. *H. G. Rchb. f., Hamburgh.*

The Council of the Royal Horticultural Society.—In your paper of January 23 of this year you directed attention to a resolution passed by the Council of the Royal Horticultural Society, to the effect that no nurseryman should be entitled at any time to a seat on the Council. This resolution seems, from the absence of any comment, not to have received the notice it deserves; and if nurserymen are content to accept the disgraceful position it assigns to them, they must blame nobody but themselves for the absence of the consideration to which they are justly entitled, and which is withheld from them by those whom they have loyally assisted, which assistance appears to be looked upon by the present Council as a trade advertisement. Will all nurserymen quietly pocket this affront? There are plenty of places suitable for exhibitions away from Kensington, and when attention is specially directed to the insulting clause some nurseryman may suggest a method whereby action may be taken, and that soon, to obtain the opinion of nurserymen. A general meeting is obviously the most direct method, and if you will open your columns to suggestions, some correspondent may indicate the proper course to be taken. *Sylvanus.*

Willows: Why called Palms?—It is the custom in foreign churches on Palm Sunday to decorate the churches with Palm leaves. In England the catkins of the Sallow are in many parts collected for the same purpose, and are called Palms. It is not easy to suppose that any one could have thought the Willow to be so like the Palm as to be a good substitute for it, and I can nowhere find any good reason why the Willow should have been so used. Can any of your readers suggest a reason? In want of a better I think it may have arisen from the directions for the Feast of Tabernacles in Levit. xxiii. 40:—"Ye shall take you on the first day the boughs of goodly trees, branches of Palm trees, and the boughs of thick trees, and Willows of the brook." That the name of Palm has been applied to the Willow from very early times is abundantly evident from the old writers. *Henry N. Ellacombe, Bitton Vicarage.*

Palm Sunday.—If, as shown at p. 461, the true Date Palm is the plant used in Italy to illustrate "Palm Sunday," how comes it that wood of the Willow, when covered with florescent catkins, is here called "Palm," and used in our churches for a similar purpose? Is it because it usually blooms at the Lent season, and is therefore the most valuable substitute? *A. D.* [Yes. EDS.]

Notes on Narcissus and Primrose.—I have much pleasure in sending you one out of my three flowers of Ajax eystettensis. It is a very delicate variety, and the wet winter and cold spring have tried it very severely. Next to N. triandrus it is one of the most delicately beautiful of the whole tribe, and I am astonished that more care has not been bestowed on its cultivation. One of the handsomest Narcissi I have ever seen has flowered for the first time in my garden. All through the month of March it was the admiration of every one who saw it. I allude to the Narcissus which has for a long time past been known to grow wild at Penalley, near Tenby, and I believe in other parts of South Wales. It is, I think, most undoubtedly the true N. obvallaris, Haw. It is well figured in *Bot. Mag.*, t. 1301, lower figure, where it is called N. major flore minore, but I think every impartial observer would at once say that it was a totally distinct species from N. major, which is well figured in *Bot. Mag.*, t. 51; and again, in another form, in *Bot. Mag.*, t. 1301, upper figure. The short segments of the perianth at once distinguish N. obvallaris. I consider the latter one of the most desirable of all our early-blooming spring plants, and the more it is known the more I am sure it will be appreciated. I owe Mr. Darwin Fox, of Broadland, Sandown, Isle of Wight, a debt of gratitude for so kindly supplying me with bulbs. I should like to know whether any one has the true Narcissus verbanensis in cultivation. The true Hermione corcyrensis, Herbert, appears to be lost. I have had a friend searching for it all this spring in Corfu, but without success. Mr. Tyerman may be interested to know that with me the common double yellow Primrose frequently appears in a Polyanthus form with several flowers on a stalk. I have it at the present time in bloom. It is common in this form in the flower markets of Paris. It was at least a few years ago. *H. Harpur-Crewe.*

Fritillaria macrophylla (Lilium Thompsonianum).—This is flowering with me in the open ground for the first time this spring. I covered it in the autumn with cocoa fibre, and have let it work its own way through. Fritillaria græca has four flowers on one stalk. A single bulb of F. delphinensis is in beautiful bloom. F. involucrata, latifolia, meleagris, and meleagris fl.-pl., will be out in a week or so. F. tristis has succumbed to the wet winter. *H. Harpur-Crewe.*

Tulipa Biebersteiniana.—This pretty little yellow species, which seems to come between T. sylvestris and T. fragrans, is now in bloom. It is, with the exception of T. tricolor, the earliest Tulip I know. *H. Harpur-Crewe, Drayton-Beauchamp Rectory, Tring, April* 10.

Peronospora and Pythium.—In your report of the last meeting of the Royal Horticultural Society, and my recent observations on the Potato disease, Mr. Renny is reported to have said, in reference to the bodies found by me in the Chiswick Potatos, that he "considered the relationship to Pythium was strengthened by Mr. Smee's preparations. In Saprolegnia the antheridium was always borne on finer threads than the oogonium." Allow me to say in reply that in Pythium the threads are never septate, whilst in Peronospora the threads invariably show septa. The threads found and illustrated by me are always septate, therefore they cannot belong to a true Pythium where septa are positively unknown. De Bary calls special attention to the septa figured by me; when De Bary illustrates Artotrogus (which is the same as my plant) "from Montagne's original specimen," he again introduces numerous septa. Mr. Broome, in illustrating the Artotrogus of the Turnip, also introduces numerous septa. On the other hand, when De Bary describes his Pythium vexans, he says, "threads without septa;" therefore, as Pythium and Peronospora are at present constituted, my plant belongs to the latter, and not the former. For my own part I

place little reliance on these characters, but, in common with many other botanists, I believe some Saprolegnieæ to be the aquatic form of certain moulds. As for these dubious Saprolegnieæ (referred to by Mr. Renny), some botanists class these plants with Algæ, whilst others (as Berkeley and De Bary) place them with fungi. This classification, one way or the other, does not interfere with the correctness of my position, for Pythium and Peronospora are almost, if not quite, the same with each other. De Bary in his recent essay says:—"In particular, stress must be laid on the fact that there is another group of fungi to which, as far as our knowledge goes, the Potato fungus might with equal reason be compared. I refer to the family Saprolegnieæ." The question of mere thickness or thinness of antheridium- and oogonium- bearing threads is of no moment whatever in these families, and no one can say these threads are "always" either thick or thin. When I first saw the antheridia they were carried on very thin threads, but when I wished to photograph these bodies (as the photograph enclosed herewith shows), one antheridium was borne on a thread equally thick with those which carried the oogonia. [It is so shown.] I may say, in conclusion, that there is nothing new in the fact of one of the Peronosporeæ growing upon insects. The fungus (Botrytis Bassiana) which causes the disease of silkworms belongs to the same group with the Potato murrain fungus, and causes the destructive disease known as Muscardine, and it is equally near (if not nearer) the Saprolegnieæ than the Potato fungus itself. *W. G. Smith.*

Science with Practice.—I cannot help thinking that a little knowledge of what is often sneered at as mere theory might have helped to settle several controversies recently carried on in your columns. No one who knows that burning means nothing more or less than oxidation can speak of calcium carbonate or limestone (an oxidised compound) as fuel. Again, considering the simple structure of the flowers of the Aucuba, and the prominence of the stigmatic surface, there can be no need of special insect fertilisers, and even wind fertilisation may, I imagine, occur. I have observed house and bluebottle flies to frequent the blossoms. I cannot understand any one putting forward the grafting of one sex on the other as either a necessary or a novel process for securing fruit. With regard to Peach blossoms, taking into consideration the attractive corolla and the analogy of other Rosaceæ, one would be inclined to think that if the flowers are not dichogamous, *i.e.*, maturing the pollen and stigmatic surfaces at separate times, at least frequently the agency of insects would be put in requisition by Nature. Of course, in dichogamous flowers self-fertilisation is out of the question. Every gardener, botanist, or physiologist knows that flowering is an exhausting process, therefore the plant must require moisture in some form to enable it to carry on the metastases or compound changings involved in the process. The numerous stigmas require water to enable them to secrete the viscid substance which causes the pollen to protrude its tubes. I cannot help thinking, however, that "theoretically" this water should be applied to the roots, that the pollen will act best when dry, and that gently shaking or fanning the tree is the best imitation of Nature's operations. *G. S. Boulger, Agricultural College, Cirencester.*

The Cucumber Disease and its Remedy (see p. 438).—On taking the management of the gardens of J. Shaw Phillips, Esq., of Culham House, near Abingdon, Berks, I found all the Cucumber plants more or less diseased, and knowing what an enemy I had to contend with I at once pulled them all up and started afresh with clean healthy plants from a neighbouring garden, but in the course of a few weeks they were attacked with disease as bad as those I had pulled up. However, I managed to grow a few small fruits till about the middle of August, when the weather set in dull and wet, and the disease spread rapidly to Melons and Vegetable Marrows. I again pulled them all up, and burned the whole lot; had every particle of soil and manure wheeled out to kitchen garden. I then procured a quantity of fresh lime, slacked it on the spot, and while hot strewed it thickly all over the ground in pits, frames, &c.; had all walls, pits, &c, thoroughly washed with hot lime, lights washed and painted, and started again the following spring, using fresh maiden soil from the roadside, I am happy to say with perfect success, and during three years following, while living at Culham House, I was awarded fifteen first prizes at Oxford and other shows; the varieties grown were Turner's Favourite and Berkshire Challenge. *T. Lockie, Oakley Court, Windsor.*

How to Scare Sparrows.—London sparrows are proverbially amongst the most "cheeky" fellows in existence, and to keep them from eating up newly-sown grass seed is an almost hopeless task. The following simple method, however, I have found successful. As soon as the seed is sown strings are stretched across about 4 feet from the ground, and supported by stout sticks. From these strings are again suspended about 4 yards apart, so as to allow them plenty of play, air bladders, such as children amuse themselves with, and which can be purchased at about 4*d.* a dozen. Every breath of wind sets them in motion, and there is such a look of danger about them to the sparrow apprehension that they fly from them in dismay. Common bladders with shot in them were a failure with me. *G. H. H.*

Double Umbellate Primrose.—Mr. Tyerman will have seen by this time that a double Primrose, flowering in umbels, was sent by me to South Kensington at the last meeting, and received a vote of thanks. From the report in the journals, I gather that it was not considered the only instance of such a plant having been raised. My plant is a true Primrose, raised, after a long succession of generations, from pure Primrose stock, and is a totally different thing from the brown or brownish red double Polyanthus of old days. As I have been long making our garden Primulas a special study, I should feel greatly obliged if any of your correspondents could procure or tell me where I could see a similar instance. *R. T. Clarke.*

A Precocious Oak Branch.—I send you a portion of a large branch from an Oak tree, which grows here, and which you will see has made an early growth and produced some small amount of new wood, whilst all other branches upon the same tree and all other Oak trees in the neighbourhood are as bare as the sprig inclosed therewith. I noticed the same thing last spring, but not previously. Would not the progeny of seed from such a branch produce seedlings which would vegetate equally early, as we see in some Horse Chestnuts and Sycamores, of which we have some remarkable examples around here? *William Earley, Valentines, April* 11. [We do not think in this case that the peculiarity would be reproduced by seed with any certainty, but no doubt the tendency might be perpetuated by grafting. Eds.]

Florists' Flowers.

The Cineraria.—Although the interest that formerly attached to this plant for exhibition purposes has greatly abated, it is still certain that, as an early spring decorative plant for the greenhouse or conservatory, it has yet but few rivals. There is a simplicity about the mode of culture needed by it that makes it emphatically a commonly grown plant, and it has the merit of blooming at a time of the year when generally flowers are scarce, and—especially at Easter-tide—much in demand. Judged for house decoration only the shape of the flower is of no great moment, but the colours should be varied and gay, and for this purpose a strain that produces an abundance of light coloured flowers is most acceptable. For market purposes, and especially to furnish cut flowers, self, bright, distinct colours are acceptable, and none are more in request than rich bright blues and pure whites, although these latter are too often tainted with the customary dark eye to make them entirely acceptable to the bouquetist. The florist is most concerned as to the form of the flower, its size and the arrangement of its petals, and if the flower be bicoloured, then at the clearness and distinctness with which the opposing colours are laid on, and he will not tolerate running hues or streaks, but insists that all points shall be as nearly as possible perfect. Perhaps it would be found in looking over a large number of seedlings that the very plants the florist would reject would, because of other attractive features, be the most readily accepted by the gardener, who has to make his conservatory look gay for a season; but, nevertheless, the florist is in this case the gardener's best friend, as the perfection he looks for is the chief stimulant to the raiser to strive for the production of improved varieties.

Judging by some of the fine seedlings shown by Mr. James, of Isleworth, one of our most advanced raisers, at the recent Royal Botanic Society's show, it would seem difficult to suggest in what direction to look for improved features, as even in size a diameter of 2 inches, to which some of the flowers had attained, would seem to be large enough for all purposes.

In looking over the home collection at Redlees, however, one is especially struck with the marvellous size of some of the flowers on seedling plants, although these are not of quality worthy to be termed first-rate. One plant had belted flowers of extraordinary size—almost 3 inches in diameter—and these on a massive head of bloom. The size of the flowers at once distinguished the plant above the rest as remarkably effective, and plainly showed that if size of the Cineraria flowers be greatly added to, it will be a gain to the gardener, if not to the florist. But if flowers are almost, if not entirely, perfect at 2 inches, why not have them equally perfect at 3 inches if it can be produced?—and there is no earthly reason why the raisers of Cinerarias should sit down and be thankful when it is impossible to tell what improvements are yet in store. Not the least remarkable feature of many of Mr. James' best flowers is the regular order in which the petals overlap each other, each one of exact size, and as perfectly placed as the utmost human ingenuity could devise. This feature has resulted from the breeding from broad-petalled flowers, so that in this strain the "starry" flower is rarely found, and then only in the case of a few of abnormal size, such as just now mentioned. There are indications also that new colours, especially amongst the selfs, are being introduced, one flower, a rosy puce, being most noticeable. There are also some rich velvety blues, and many of the dark selfs have bright vivid tints that render them peculiarly striking. To the general falling off of spring exhibitions must to some extent be attributed the comparative decadence of the Cineraria as an exhibition plant, and yet one is somewhat surprised to find that at the Botanic and South Kensington shows Mr. James is the only exhibitor. There is no reason why a dozen other gardeners, or even a hundred, around London should not grow the Cineraria as well as he does if they chose to try, and, at least as far as the metropolis is concerned, there is no excuse. In provincial districts where, unfortunately, spring shows "don't pay," there is no incentive for the display of a Cineraria grower's cultural abilities. *Florist.*

New Fuchsias.—The *Revue de l'Horticulture Belge* gives a coloured plate of three Fuchsias of merit:—1. Alphonse Fillot, raised by M. Coene, of Ghent. The plant is vigorous of good habit and a very free bloomer. The calyx is red, with spreading, not recurved segments, and numerous white petals. 2. François Desbois is another variety raised by M. Coene, and highly spoken of for its habit and flowering qualities. The sepals are pink, reflexed so as to show an outer series of petals red at the base, blue at the tips, the inner petals deep blue. 3. Deutscher Kaiser is a seedling from Germania, a bold flower with red spreading or partially reflexed sepals and deep crimson-red petals, very full.

Primroses and Polyanthus.—The difficulty that Mr. Tyerman imagines exists for the botanist in classing some forms of the Polyanthus florists have got over by instituting a class called "Hybrid Primroses," which includes those forms that first throw up flowers on single stems and follow with other flowers on scapes. Of these there is a great variety of very beautiful kinds. Some true Primroses when much propagated and grown under glass will also throw up Polyanth stems; but this feature disappears in established plants. The double Primrose will sometimes do the same. I have had the old double crimson flowering on a scape this year, but it is very unfrequent. All the finest forms of the fancy Polyanthus bloom as true on scapes as do the gold-laced kinds, whilst they excel them immensely in size, beauty, and effectiveness. *D.*

Forestry.

The duties of forester, as generally understood, are included in the term management of woods and forests. This term, however, is too vague and general to convey any correct and adequate meaning of what is referred to, therefore, in order to explain, so as to lead to practical results, the term must be more definitely and explicitly used. One and by no means the least important duty of a forester consists in acute observation. Observation on the part of a forester is one of the most essential qualifications he can possess, and at this particular season of the year, more perhaps than at any other, he is called upon to put it into practice. The minutest no less than the largest objects must be comprehended by him, the necessity of which can easily be seen in the manner in which he has to deal with the very smallest objects in Nature, such as insects that prey upon and injure forest trees. The two greatest enemies to one of our most valuable species of forest trees, the Scots Pine, are the Hylurgus piniperda—a small dark brown or sooty black beetle, somewhat resembling in colour the seed of the Scotch Pine tree; and the squirrel. The leading shoots of Pines are generally formed by the end of June, and thereafter the greatest ravages are committed. The beetle, being

winged, is enabled at pleasure to shift from tree to tree, but it seldom avails itself of flight in its movements. It begins its depredations by boring into the centre of the newly-formed shoots at any part, and eating its way upwards in the shoot till it makes its exit at or near the terminal bud. Besides the Scotch Pine, Pinus austriaca, P. Laricio, and the Norway Spruce occasionally suffer, but I have never observed the Silver Fir or Larch injured by it, nor have I heard of any one who has. The beetle remains alive in the tree through the winter, and may be found alive, though in a torpid state, in hard frosty weather with the wood in which it is encased hard frozen. It attacks trees of all ages, from the young plant in the nursery to the aged tree in the park or forest. In old as well as in young trees it confines itself as far as I have seen to the one year's shoot only, seldom or never injuring older growths. In the policy grounds here there are a few old Scotch Pine trees constantly kept in a most picturesque and interesting form by the beetle, by its eating off the outer shoots or rather injuring them so that they fall off every succeeding season shortly after they are grown. The outline of the trees thus kept in shape by the beetle is not smooth and uniform as if trimmed by artificial means, but is clustered, cloudy and irregular. The trees by these means never grow higher or broader in the top, and though it grieves one to see and know by what means the top growth of the trees is continuously checkmated, yet it is consoling to know that the growth and enlargement of the trunks goes on, and that the change of outline upon the tree is only from that of beauty and elegance to that of the picturesque and romantic. And in regard to the beetle itself, one has only to say, since it cannot be destroyed it must just meanwhile be borne with. Since I began to notice the very injurious results of the beetle upon Pine trees, I have made diligent inquiry to ascertain whether it has been observed by others, and to what extent its ravages had been committed. The results of my investigation go to prove that the beetle is either a comparative stranger in the woods and forests of Scotland, or if it has long been an inhabitant it must have been kept in subjection by some counteracting agency.

In the course of my inquiries the following circumstance was related, and is entitled to be made further known. Where that agile and beautiful quadruped, the squirrel, abounds, the ravages committed by the beetle are greatest, and at the same time where squirrels are, or were abundant, the woodpecker is scarce. These circumstances may appear very remotely, if at all connected, but the following incident will throw some light upon them. A sawyer, a man of acute observation, who wrought upon the sawpit in the forests of Strathspey for many years, related to me the following incident:—Near to the sawpit where he was at work, a woodpecker hatched her eggs in a cleft of a tree, and when the young ones were nearly full fledged he observed one morning a squirrel enter the nest, and carry off a young bird; this was again and again repeated by the squirrel till the whole brood were destroyed. It is now pretty generally known that squirrels do eat the eggs of small birds, and even wood pigeons, from which it may very safely be inferred that the eggs of the woodpecker and other insect-devourers will share a similar fate, and the young birds likely also suffer in like manner.

In Strathspey about thirty years ago woodpeckers were very numerous, literally in flocks. The holes which they then made in some of the old trees may yet be seen in abundance, while now not a single woodpecker is to be seen in the old forest. About the year 1840 the first squirrel was seen in the Strathspey forests, while now they are to be seen in hundreds, and are rapidly on the increase.

The most healthy and vigorous shoots are those preferred and attacked by the beetle, and those in sheltered to those in exposed places. Its greatest ravages are committed either in the nursery or in young plantations in the forest, and naturally no less than artificially grown plants are exempt from it. It is difficult to devise any practical means either for its prevention or cure; but if, as is inferred, the woodpecker devours and keeps the beetle in subjection, its enemy, the squirrel, which probably has expelled it from the forest, should be killed down at any cost or sacrifice. That the balance of Nature has been deranged by some means is evident, and how again to restore it is an important question that should not be allowed to rest till a practical solution of it is arrived at.

Meanwhile, and until an effective cure can be accomplished, the evils may to some extent be modified by going over any part of a young plantation or nursery and removing with the hand all shoots perforated by the beetle, which are not only easily seen by their sickly pale colour, but which generally, on being taken hold of, readily fall off into the hand. On collecting the injured shoots a sharp knife may occasionally be necessary to remove some of the shoots that do not readily come off, and in them will be found the beetles, as also the eggs of their future progeny, which should forthwith be removed from the plantation and burnt. *C. Y. Michie, Cullen House, Cullen, April* 4.

Notices of Books.

We have on our table the third part of the *Indian Forester*, containing an interesting article on Bamboo and its uses, by Mr. S. Kurz, which is a valuable *resumé* of the thousand and one useful purposes to which the Bamboo, using the word in its widest sense, may be put. Relative to the growth of these plants, known to be in some cases extremely rapid, the author quotes the earlier observations made under the direction of Dr. Wallich, the general result of which was that Bambusa gigantea grew 25 feet 9 inches in thirty-one days, the growth by day exceeding that by night by 9½ inches, while B. balcooa grew during twenty-three days 12 feet and half an inch, the nightly growth being 2 inches in excess of that by day. Other observations are given, including those of Fortune in China, who found the greatest growth to take place at night. The author then cites his own observations in Java upon two species, Gigantochloa robusta and G. alter. In G. robusta the total growth in thirty days was 3.1651 metres, of which 1.9554 were nocturnal, 1.2097 diurnal. Referring to the flowering of the different species of Bamboo, which seems capricious now from our imperfect information, the author, after alluding to the differences in the period of flowering in different species and in various localities, alludes to the occasional simultaneous flowering of certain species over a large area—a phenomenon not unknown in English gardens. Drought is a common cause of flowering, hence Bamboos flower during periods of famine, to the great benefit of the natives. Hence the author suggests that Bamboo reserves should be established in now uncultivated wastes, for the purpose of ensuring a supply of seed in years of drought. Mr. Kurz notes a curious circumstance, showing how cuttings may reproduce the physiological peculiarities of the parent stock. He tells us that "cuttings or root-layers taken from the flowering stock (and even if taken before flowering) will burst into flower just as their parent stock. Mention is made of the curious berry-bearing Bamboos, one of which, Melocana baccifera, has fruit 4 inches by 3 in size, with a fleshy beak in addition measuring 2 inches more. Pseudostachyum compactum has Apple-like fruits. The seeds of both these species germinate when still in the berry as it hangs on the tree.

—— The plants figured in the April number of the *Botanical Magazine* are Saccolabium Hendersonianum, t. 6222, described in our columns last year by Prof. Reichenbach (vol. iv. p. 375). The flowers are rose-coloured with a white spur, which latter is, with the exception of a minute tooth, the only portion of the lip that is developed. The plant is a native of Borneo, and the plant figured was obtained from Messrs. E. G. Henderson & Son. Sedum pulchellum, tab. 6223, an American species, figured in our columns from the Bitton garden in 1874 (vol. ii., 552). It is one of the best of the Sedums for rockwork. Hypoestes aristata, tab. 6224, a pretty Acanthad from South Africa, is figured from Messrs. Veitch's nursery. It has clusters of lilac flowers, each about an inch long, lilac-rose in colour, and with the upper petals speckled with white. Ainsliæa Walkeri, tab. 6225, is, according to the figure, a very pretty Composite plant, discovered by Captain Walker in Hong Kong, where it seems to be very rare. It is described as an herbaceous plant, about a foot high, with numerous crowded linear ligulate slightly toothed sub-sessile leaves, and a terminal panicle of small white flower-heads. Dendrobium fuscatum, tab. 6226, is a handsome orange-flowered Dendrobe, native of the Khasya Hills and the hot valleys of Sikkim, where it was first found by Dr. Hooker. The flowers are formed in racemes, are each about 2 inches in diameter, deep orange-coloured, with a roundish villous lip marked at the base on either side with a dark purple spot. The plant figured came from the garden of Mr. F. Currey. Allium anceps, tab. 6227, is described as a very curious species of Allium, remarkable for its dwarf habit, broad, flat, acutely angular stems, and very dense umbels of bright purple flowers. It is a native of the Sierra Nevada Mountains, and was introduced to this country (where it is hardy) by Messrs. Veitch.

—— The April number of the *Revue de l'Horticulture Belge* opens with a plate of three Fuchsias (noticed on p. 505), followed by an account of the hurricane on March 12, which did great damage at Ghent. The barometer descended lower on this occasion, viz., 724 29 millimetres (28.5), than on any occasion since 1843, with two exceptions, viz., 1872, December 10, 722.78 millimetres, and 1873, January 20, 724 14 millimetres. We learn from private sources that the splendid winter garden of the Burgomaster suffered scarcely at all.

—— The April number of the *Floral Magazine* contains coloured plates of Camellia Marquis of Lorne, a flower of good form and substance, and with particoloured flowers deep crimson and white. The variegation is too irregular to be pleasing to the florist's taste. × Cypripedium Sedeni is, as now well-known, one of the very best of its race, having the habit of C. longifolium and the colour of C. Schlimii, the two parent forms from which it was produced. Croton D'Israeli is one of the three-lobed Crotons, specimens of which we were first privileged to see in the hands of Mr. Charles Moore, of Sydney, at the Florence Exhibition. The orange-red ribs give this variety a grand appearance. Odontoglossum tripudians is a fine Odontoglossum in the way of cristatum, but the colouring of the brown spots on the sepals and petals is somewhat dull.

—— The *Journal of Botany* for the present month opens with an excellent lithographic portrait of the late J. J. Bennett, and a sympathetic memoir by Mr. Carruthers, the latter marred by one or two passages which, to our thinking, had been better omitted. Next follows an instalment of Professor De Bary's important paper on the Potato fungus. The Professor begins by detailing the structure of the Potato fungus, to which he gives a new name, Phytophthora, and its allies (Pythium, Saprolegnieæ), and then puts the question which has perplexed so many, how and where does the Potato fungus pass the winter? Resting-spores (oospores) and perennial spawn are the only known means of maintaining the life of the fungus during the winter. Perennial mycelium frequently occurs in the tubers. Resting-spores, says De Bary, have not been observed in the Potato fungus, though carefully searched for for fifteen years by De Bary and his assistants. Oospores, however, of a Pythium were found, which might be mistaken for those of the Potato fungus, but which when tried to be grown on the Potato ceased to grow at all. When sown, however, on the bodies of mites the oospores quickly formed a spawn upon and in the bodies of the mites, and oospores were even produced in the body of the mite. The significance of these observations, and their connection with Mr. Smee's preparations and the figure given in our columns, p. 474, are at once apparent. To this fungus, which would not grow on the Potato, but which did grow on and in the bodies of mites, De Bary gives the name of Pythium vexans, from the trouble it had caused him during two years. De Bary also finds the globular spiny bodies known as Artotrogus, but he has not been able to satisfy himself as to what fungus they really belong, but states also that he sees no reason to consider them as belonging to the Potato fungus. De Bary then passes on to his criticism of Mr. W. G. Smith's observations, and says that it has not been positively proved that the warty bodies are resting spores, or even that they positively belong to the Potato fungus. Further than this De Bary says, if some of Mr. Smith's representations are correct these objects do not belong to the Potato fungus and cannot well be oogonia, antheridia, and oospores (see fig. 13, p. 69) And again, the figures "represent things which on the face of them show that the preparation could not possibly have had the appearance given to it in the illustration." Professor De Bary then details the reasons on which his objections are based, and which have already been laid before our readers, together

with the reply of Mr. Smith himself, and the substance of the observations of Mr. Berkeley and Mr. Renny. It seems, then, that Professor De Bary interprets the observations of Mr. Smith very differently from Mr. Smith himself. What Mr. Smith considers to be Potato fungus, De Bary considers to belong to two fungi both different from the Potato fungus, and perhaps different from each other. De Bary then addresses himself to the consideration of the question whether the Potato fungus, like many others, requires for the full development of all its stages, not one but two plants of different character, and throws out a suggestion, or rather an inquiry, whether the resting-spores of the Potato fungus are not likely to be found on some of our native Scrophularias, such as Veronica or Linaria. At this point the memoir is broken off—"to be concluded in our next."

Reports of Societies.

Royal Aquarium and Summer and Winter Garden: *April 12 and 13*.—This was the first exhibition held by the Royal Aquarium Company in their new palace at Westminster, and it was certainly the best spring show we have had in London this year, though there was nothing amongst the plants exhibited, except it be the Auriculas, that could be considered out of the ordinary way. A full amount of praise, however, must be accorded to Mr. John Wills, the manager of the floral exhibitions, for the novel and artistic manner in which he dealt with the subjects brought for exhibition. All the groups were arranged with a view to effect, and Mr. Wills' labours would have been even more successful if all the exhibitors had kept their engagements. This making of entries, and then not putting in an appearance, is one of the most crying evils that managers of floral exhibitions have to contend with, and we are afraid it will remain so until the managers combine together to put it down. The show was held at the sides of the long nave and small annexe, the staging, instead of being straight and continuous, being broken up into projecting bays, and raised by two or three tiers from front to rear—an advantage which exhibitors will duly appreciate. The least effective, but really the most interesting display, was made by the

Auriculas.—The four classes for these beautiful flowers brought out a good competition, and on the whole a finer lot has not been seen in the South for a long time. There were three competitors in the class for fifty show and alpine varieties, and the prizes went to F. Whitbourn, Esq, Loxford Hall (Mr. Douglas, gr.), Mr. Turner (Slough), and W. F. Watson, Esq. (Mr. James, gr.) Mr. Douglas well maintained his reputation as a grower by staging a capital collection. Elcho (Turner), Beatrice, and several seedlings were very fine amongst the alpines; the best of the show varieties being Robert Traill (Lightbody), Colonel Champneys (Turner), Arabella (Headley), Topsy (Kay), Marie (Chapman), and Conqueror (Popplewell). Mr. Turner had a very fine lot, especially of alpines; the finest of the show varieties were Colonel Champneys (Turner), Charles Perry (Turner), Petronelle (Headley), Miss Geddings (Read), Duke of Wellington (Dickson), Garnet (Turner), and Splendour (Headley). Of the alpine varieties, Malcolm (Turner), Acteon (Turner), Prometheus (Turner), Slough Rival (Turner), Princess (Turner), and Diamond (Turner), were particularly good. Mr. James' plants were smaller than he usually shows them The same exhibitors also competed with twelve show varieties, and the prizes went to Mr. Turner, Mr. Douglas, and Mr. James. Mr. Turner had splendid examples of Charles Perry, Glory (Taylor), Oberon (Turner), Meta (Turner), Drake Lewis (Turner), Colonel Champneys (Turner), and General Niell (Traill), Alderman Wisbey (Turner), Colonel Taylor (Leigh), and Robert Traill (Lightbody), were fine with Mr. Douglas. The last named and the Rev. H. H. Dombrain were the only exhibitors of six show varieties, and the prizes here were taken in the order named. There were four lots in the class for twelve alpines, and Mr. Turner was 1st, Mr. Douglas 2d, and Mr. James 3d; Mr. R. Dean, Ealing, commended. The plants shown by Mr. Turner and Mr. Douglas were finely flowered, and the varieties best represented were Dear Hart (Turner), Queen Victoria (Turner), Diamond (Turner), Trojan (Turner), National (Turner), Susie Matthams (Turner), W. H. Bacon (Turner), Beatrice (Turner), and Elcho (Turner). Mr. Douglas had one or two fine seedlings.

Azaleas made a very good show for the time of year, and the collection of twenty standard plants which took the 1st prize were a specially creditable lot. The exhibitor was R. Thornton, Esq, The Hoo, Sydenham Hill (Mr. A. Ratty, gr.). Amongst the best flowered specimens we noticed Jules Margottin, Baron de Vriere, Auguste Van Geert, Virginalis, Roi Leopold, and Duc de Nassau in specially fine condition. Mr. Turner was 2d in the amateurs' class for six, Mrs. Torr, Garbrand Hall, Ewell (Mr. J. Child, gr.), was 2d, and Mr. Ratty 3d. We did not see the 1st prize group. Some of the plants in this class were flagging badly on the first day. Mr. B. S. Williams was a good 1st amongst nurserymen for nine.

Orchids were very fairly represented, considering the season and the weather. The best six amongst amateurs came from F. G. Wilkins, Esq, Leyton (Mr. Ward, gr.), and these included nice examples of Odontoglossum Pescatorei, O. Bluntii, Dendrobium Farmerii, and Lycaste Skinneri. F. Whitbourn, Esq, Loxford Hall (Mr. Douglas, gr), was 2d with Vanda suavis Veitchii, Dendrobium clavatum, Cypripedium villosum, &c.; and Mrs. Torr (Mr. J. Child, gr.) 3d. Mr. B. S. Williams was 1st in a similar class confined to nurserymen, having large plants of Vanda suavis, Dendrobium densiflorum, Cypripedium villosum, Dendrobium Wardianum, Lycaste Harrisoniæ, &c.

Cyclamens made a particularly good display, being staged in considerable numbers. The best twenty-five staged by nurserymen—large and well-flowered plants—came from Mr. Charles Edmonds, Hayes, Middlesex; Mr. H. B. Smith, Ealing Dean, being a good 2d; and Mr. R. Clarke, Twickenham, a very close 3d. Henry Little, Esq, Cambridge Villa, Twickenham (Mr. Goddard, gr.), showed a splendid collection of fifty plants, and easily won the 1st prize; Mr. R. Clarke was a good 2d, and W. F. Watson, Esq, Isleworth (Mr. James, gr.), an equally good 3d. Nice collections of fifty and twenty-five respectively, were shown by Mr. J. Odell, florist, Hillingdon, and were commended. H. Little, Esq., also took a 1st prize for twenty-five. Of Cinerarias there were three groups of six, the exhibitors being W. F. Watson, Esq. (Mr. James, gr.), Messrs. J. Dobson & Sons, Isleworth, and C. O. Ledward, Esq. (Mr. J. Hepper, gr.), the order of merit being as we have given the exhibitors' names.

Hardy spring flowers were well shown in the class for twenty-four by Mr. Parker, Tooting, who easily took the 1st prize. Among the finer examples were Triteleia uniflora conspicua, Anemone apennina, Scilla campanulata rosea, Doronicum austriacum, Aubrietia purpurea grandiflora, and Fumaria bulbosa. Mr. R. Dean, Ranelagh Road, Ealing, was 2d with a nice assortment. The finest twelve hardy Primroses also came from the last named exhibitor, who besides staged the finest dozen Polyanthuses, and a selection of seedling Polyanthuses, which the judges very highly commended. The second best group of Polyanthuses came from Mr. Pestridge, Brentford, and the third from Mr. Turner; Mr. Hooper, Vine Nursery, Widcombe Hill, Bath, staged a collection of cut blooms of Pansies, which were commended; and Mr. J. Douglas had a showy group of varieties of Primula cortusoides amœna.

In the miscellaneous class Messrs. William Paul & Son, Waltham Cross, contributed one of the most attractive and largest groups in the exhibition, and gained an extra prize. The largest proportion of the plants were half-standard Roses, well bloomed, and these were effectively backed up with fine pyramidal Ivies, and bordered in front with gold and bronze Tricolor and Bicolor Pelargoniums. Messrs. William Rollisson & Sons had an extra prize for a large and very attractive group of fine-foliaged and flowering plants, including a capital lot of standard Azaleas, and some fine Palms and Orchids. Messrs. John Standish & Co., Ascot, took an extra prize for a fine group of plants, including a splendid lot of Lily of the Valley, a grand plant of Adiantum gracillimum, a nice lot of Azalea Sigismund Rucker, one of the prettiest of semi-doubles; and some fine forced Roses. Messrs. William Cutbush & Son, Highgate, had an extra prize for a small group of Camellias and other plants; and also Mr. B. S. Williams, Holloway, for a group of fine-foliaged and flowering plants; and Mr. Charles Noble, Bagshot, for a small group of Clematis. Messrs. Paul & Son, The Old Nurseries, Cheshunt, contributed a small group of good pot Roses and six baskets of blooms of Maréchal Niel, of a rich golden colour, which were very striking objects. An extra prize was also awarded to them. Mr. Wills showed a small group of Dendrobium Wardianum and other Orchids; and Mr. J. Walker, Thame, sent some fine blooms of Maréchal Niel and Gloire de Dijon Roses.

In the fruit classes there were five competitors with two bunches of old or new Black Grapes, and Earl Brownlow, Ashridge Park (Mr. Sage, gr.), was 1st with Black Alicante, in good condition; F. G. Barclay, Esq., Lower Woodside, Hatfield (Mr. J. Allward, gr.), 2d with very nice Lady Downe's; and J. F. Halsey, Esq., M.P., Goddesden Park, Hemel Hempstead (Mr. H. Folkes, gr.), 3d with Black Alicante; and an extra prize was awarded to C. O Ledward, Esq., The Elms, Acton (Mr. J. Hepper, gr.), who showed a very nice sample of new Black Hamburghs. Lord Carrington, Wycombe Abbey (Mr. Miles, gr.), was the only exhibitor of White Grapes, and took a 2d prize with very good new samples of Foster's White Seedling. Nine brace of Cucumbers appeared in competition, and the 1st prize was awarded to E. R. Slee, Esq., Leigham Court Road, Streatham (Mr. E. Cherry, gr.); Earl Brownlow (Mr. Sage, gr.) had the finest dish of Strawberries—Sir Charles Napier, very large and highly-coloured.

In the miscellaneous class extra prizes were awarded to C. O Ledward, Esq., for a basket of Black Hamburgh Grapes; and to the Rev. W. Sneyd, Keele Hall, Staffordshire (Mr. Hill, gr.), for a good sample of late Black Alicante. Messrs. Webber & Co., Covent Garden Market, showed a dozen Smooth Cayenne Pines, imported from St. Michael's, which averaged in weight about 7 lb. a-piece, and were remarkable for the fine size of their pips and grand condition. They were very highly commended.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, For the Week ending Wednesday, April 12, 1876.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 16 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Dew Point.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Degree of Humidity: Sat. = 100.	Wind. Average Direction.	Rainfall.
April	In.	In.	°	°	°	°	°	°			In.
6	30.21	+0.48	61.8	48.8	13.0	53.8	+8.8	50.6	80	SE: E: NE.	0.00
7	30.13	+0.40	64.1	44.4	19.7	52.1	+6.9	39.8	64	E: ENE.	0.00
8	29.81	+0.07	73.1	40.2	32.9	55.5	+10.1	39.1	51	SSE: S.	0.00
9	29.68	−0.06	60.6	46.6	14.0	52.7	+7.7	51.3	95	SW: S	0.00
10	29.22	−0.52	53.3	38.7	14.6	44.2	−1.5	43.0	95	SSW: SW: W.	0.35
11	29.52	−0.22	51.9	31.8	20.1	40.1	−5.7	30.2	67	WNW: NW.	0.00
12	29.70	−0.04	46.1	29.9	16.2	36.1	−9.8	32.9	81	WNW: NW.	0.00
Mean	29.75	+0.01	58.7	40.1	18.6	47.8	+2.3	40.7	78	variable	sum 0.35

April 6.—A very dull cloudy day. Warm.
— 7.—A very fine clear day. Cool breeze.
— 8.—A very fine warm cloudless day.
— 9.—Fine, but very cloudy throughout. Slight showers of rain at noon and 2 P.M. Strong wind.
— 10.—A very dull cloudy wet day. A strong gale of wind.
— 11.—A fine day. Cloudy. Cold. A gale of wind at times. Slight hail and snow fell at 4.45 P.M.
— 12.—A dull cloudy day. Occasional snow. Very cold and wintry. Thunder heard at 1 P.M.

—— During the week ending Saturday, April 8, in the vicinity of London, the reading of the barometer at the level of the sea increased from 29.84 inches at the beginning of the week to 30.51 inches by the morning of the 5th, decreased to 30.38 inches by the afternoon of the 6th, increased to 30.43 inches by the evening of the same day, and decreased to 29.91 inches by the end of the week. The mean reading for the week was 30.26 inches, being 0.76 inch above that of the preceding week, and 0.34 inch above the average.

The highest temperatures of the air observed by day ranged from 73° on the 8th to 59½° on the 2d; the mean value for the week was 64½°. The lowest temperatures of the air observed by night ranged between 34° on the 3d and 48¾° on the 6th; the mean weekly value being 41¼°. The mean daily range of temperature in the week was 23°, the greatest range in the day was 33° on the 8th, and the least 12¾° on the 5th. The mean daily temperatures of the air were as follows:—2d, 46°.5; 3d, 47°.2; 4th, 52°; 5th, 53°.2; 6th, 53°.8; 7th, 52°.1; 8th, 55°.5, and the departures in excess of their respective averages were:—2°.1, 2°.6, 7°.2, 8°.3, 8°.8, 6°.9, 10°.1. The mean temperature of the air for the week was 51°.5, being 6°.6 above the average of observations extending over a period of sixty years.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 129° on the 4th and 121° on the 8th; on the 5th and 6th the readings did not rise above 83°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 32¾° and 34°, on the 2d and 3d; the mean for the several low readings was 39°.

The direction of the wind was variable, and its strength very gentle.

The weather during the week was fine, bright, and warm, and no rain fell.

Slight fog prevailed on the morning of the 3d inst.

In England, the highest temperatures of the air observed by day varied from 73° at about London

Barometer reading at 9 A.M. = 29.385 in., 11 A.M. = 29.333, noon = 29.267, 1 P.M. = 29.225, 2 P.M. = 29.165, 3 P.M. = 29.107, 4.30 P.M. = 29.060, 5 P.M. = 29.067, 6.30 P.M. = 29.089, 9.30 P.M. = 29.154, midnight = 29.213.

to 59° at Plymouth; the mean value from all stations was 67¼°. The lowest temperatures of the air observed by night ranged from 29¼° at Cambridge, 29½° at Nottingham, to 38° at Liverpool and Sunderland; the mean value from all stations was 33°. The range of temperature in the week was the greatest at Cambridge, 42¾°, and the least at Newcastle-on-Tyne, 24°; the mean range of temperature from all stations was 34¼°. The mean of the seven high-day temperatures was the largest at Cambridge, 65½°, and the smallest at Plymouth, 55¾°; the mean from all stations was 61½°. The mean of the seven low night temperatures was the smallest at Cambridge, 39¾°, and the largest at Liverpool, 45¾°; the general mean from all stations was 42½°. The mean daily range of temperature was the greatest at Cambridge, 25¾°, and the least at Plymouth, 12¼°; the mean daily range from all stations was 19°. The mean temperature of the air for the week from all stations was 50¾°, being 7½° higher than the value for the corresponding week in 1875. The highest was 53° at Sunderland, and the lowest 48¼°, at Plymouth.

The amount of rain measured at Plymouth and Liverpool was one-tenth of an inch, and this was the largest amount which fell at any station during the week. At most other stations no rain fell. The average fall over the country was two-hundredths of an inch.

The weather during the week was fine, bright, and mild. Lightning was seen during the evening of the 4th at Brighton.

In Scotland the highest temperatures of the air ranged between 66° at Dundee and 58° at Paisley; the mean value from all stations was 62¼°. The lowest temperatures of the air varied from 31° at Paisley to 34° at Greenock; the mean value from all stations was 32½°. The mean range of temperature in the week from all stations was 29¾°. The mean temperature of the air for the week was 50¾°, being 7¼° higher than the value for the corresponding week in 1875. The highest occurred at Leith, 53¼°, and the lowest at Paisley, 48°.

Rain fell at Greenock and Glasgow. The amounts measured respectively at these stations were 0.33 inch and 0.05 inch. At Dundee, Aberdeen, Paisley, and Leith no rain fell. The average fall over the country was six-hundredths of an inch.

At Dublin the highest temperature was 66½°, the lowest 40½°, the range 25¾°, the mean 53°, and the fall of rain 0.06 inch.

JAMES GLAISHER.

Enquiries.

He that questioneth much shall learn much.—Bacon.

113. The Studley Royal Lawn Mower.—Will any one who has had experience of the Studley Royal Lawn Mower kindly give it and the address of the makers? They ought to advertise, if their machine is good; I had a circular from them, but having lost it I have no clue to their address, since they do not advertise. *B. A.*

Answers to Correspondents.

Limestone in Iron-smelting (Qy, 106, p. 407).—In answer to Mrs. Watney's inquiry as to the purpose for which limestone is added to the iron ore, I may state that it is as a "flux." It forms compounds with the silica and alumina of the ironstone, which are more fusible than these are by themselves, and thus permits the more ready fusion of the whole mass, and the consequent separation of the iron. This property of lime is also the reason why clay containing lime can be burned into bricks with less cost of fuel than if pure, as was lately mentioned by another correspondent. *Amateur.*

Boiler, Conservatory: *J. S.* It will be cheaper and better in every way to have a somewhat larger boiler set, as the fire need not then be kept so briskly burning as would be necessary with the smaller size.

Books: *J. H. N. Choice Stove and Greenhouse Plants*, 2 vols., published by Mr. Williams of Holloway; and Thomson's *Handy Book of the Flower Garden*, published by Messrs. Blackwood.

Briar *v.* Brier: *J. G. N.* Our "Webster" gives authority for spelling the word either with an *a* or with an *e*.

Carpet Bedding: *Amateur.* We do not understand your question. Do you mean how should the four beds mentioned be filled from the selection of plants named?

Champion Cinerarias: *H. J. Hardy.* Much inferior to the strains of James, Smith, and Standish & Co.

Clover: *J. N.* We cannot say whether there is any difference between the varieties of Cow-grass you named, having no personal knowledge of Sutton's Giant Cow-grass.

Daisies: *F. Thorp.* Fork-out the roots as far as you can, and then apply a dressing of nitrate of soda at the rate of 275 lb. to the acre.

Double Cinerarias: *C. C.* Very good.

Fuchsias, &c.: *Henry Adams. Fuchsias*—single varieties: albo-coccinea, Mrs. Marshall, Model, Try-me-O, Wave of Life, Lizzie Hexham, Mrs. J. Lye, Marginata, Lustre, Souvenir de Chiswick, Lady Heytesbury, and Venus de Medici. Double varieties: Mrs. Ballantine, Princess Alexandra, Princess of Wales, Avalanche, Blue Beauty, and Marksman. *Zonal Pelargoniums*: Jealousy, A. F. Barron, Earl Manvers, Mrs. J. George, Circulator, Richard Cœur de Leon, Santley, Imogen, Corsair, Henry King, Vesuvius, Ellen, Pollie King, Ethel, Rose of Allandale, Mrs. Turner, White Clipper, and Mrs. Sach. *Double Pelargoniums*: Préfet de Lyon, Emily Laxton, Souvenir de Lyon, Crown Prince, Madame Lemoine, Le Negre, Henry Beurier, and Victor Hugo.

Ground-work: *Subscriber.* It is usual to measure the cubical contents of such work as you describe.

Insects: *H. Y. Z.* The insects sent are the larvæ of a species of two-winged fly, common in May in gardens, of a brilliant metallic green colour, Sargus politus. The larvæ feed on decaying vegetable matter. *I. O. W.—Mr. D.* Your Holly leaves are blotched by the larvæ of a small two-winged fly (Phytomyza Ilicis), which burrow within the fleshy part of the leaves until full-grown, when they gnaw a hole in the dry skin of the leaves, and descend into the ground to become chrysalids, and ultimately perfect flies. *I. O. W.—W. Lugwood.* This is our old friend, or rather our old enemy—Otiorhynchus notatus. It is either becoming more abundant in this country, or people are becoming more alive to the importance of looking after insect enemies, and find that it is more widely distributed and does more mischief than had been previously known. Every successive year we hear more of it. *A. M.*

Names of Plants: *William Nelson* 1. Possibly Narcissus lorifolius; 2. N. Telemonius plenus; 3. N. incomparabilis; 4. N. incomparabilis aurantius plenus. *—H. H. C.* Ornithogalum tenuifolium. *J. G. B.—J. Shand.* We do not understake to name Lichens.]

Narcissus eystettensis: The editors have to thank *H. H. C.*, *J. G. N.*, and *P. B.* for their courteous attention to their request.

Tree Carnations and Pinks: *T. S. N.* The plants of Tree Carnations may be re-potted in a compost made up of loam, leaf-soil, and rotten manure; and the plants put in a cold frame till hot weather comes, and then stood out-of-doors in a shady place till the end of the summer, and then removed to a cold greenhouse, where they will be certain to flower. The plants have evidently been subjected to too much heat. This remark applies to the Pinks also. Let this be shifted also and similarly treated. During the next month the young shoots of both can be taken off and made into "pipings" by cutting each through just below a joint, and then putting several in a large 60-pot in a light soil containing a good deal of silver sand. The pots can be plunged to their rims in a heap of leaves, and a hand-glass put over them, or stood in a cold frame with the hand-glass over them, and kept well shaded in sunny weather.

Vines: *R. R., Frognal.* There is no disease that we can see, but a malformation of the leaves and a shortening of the joints. Is the whole Vine affected, or only certain shoots? The root you send is healthy.

Catalogues Received:—Messrs. W. & J. Birkenhead (Fern Nursery, Sale, near Birmingham), Catalogue of Stove and Greenhouse Ferns, Selaginellas, &c.—Mr. W. Bull (King's Road, Chelsea, London, S.W.), Illustrated Retail Catalogue of New, Beautiful, and Rare Plants.

Communications Received.—R. M'K.—C. W.—A. B.—W. Swan.—T. S., *alias* Owen Lloyd.—W. S.—W. B. H.—J. G. B.—J. M.—Epping.—W. B. (please send better specimen in a stouter box; the one sent was smashed.—J. Cameron.—W. M. (next week).—J. S. (next week).—J. W.—J. G. N.—L. H. G.—C. D.—J. F.

Markets.

COVENT GARDEN, April 12.

An absence of anything like business has caused a decline in almost all classes of goods, more especially in Strawberries, the fine weather of last week having sent a large quantity into the market. A good supply of Asparagus is being imported from France, as are also French Beans, young Carrots, Turnips, salading, and Artichokes. *Jas. Webber, Wholesale Apple Market.*

Vegetables.

	s. d.	s. d.
Artichokes, per doz.	4 0	..
— Jerusalem, p. lb.	0 3	..
Asparagus (English), per bundle	.. 6 0	10 0
— French	.. 3 6	..
— Algerian	.. 4 0	..
Beans, French, p. 100	1 3	2 6
— Longpod, basket	5 0	..
Beet, per doz.	.. 1 0	2 0
Brussels Sprouts, lb.	0 4	..
Cabbages, per doz.	.. 1 0	2 0
Carrots, per bunch	.. 0 6	..
— new, do.	.. 2 6	..
Cauliflowers, p. doz.	2 0	4 0
Celery, per bundle	.. 1 6	2 0
Cucumbers, each	.. 0 6	2 0
Endive, per doz.	.. 1 0	2 0
— Batavian, p. doz.	2 0	3 0
Herbs, per bunch	.. 0 2	0 4
Horse Radish, p. bun.	3 0	5 0
Leeks, per bunch	.. 0 2	0 4
Lettuces, per score	.. 2 0	..
Mint, green, bunch	0 6	1 0
Mushrooms, per pott.	1 0	2 0
Onions, young, bun.	0 4	0 6
Parsley, per bunch	.. 0 4	..
Peas, green, per lb.	.. 1 0	..
Potatos (new), baskt.	1 0	..
— new Jersey, p. lb.	0 6	1 6
— Sweet, per lb.	.. 0 6	..
Radishes, per bunch.	0 1	0 3
— Spanish, doz.	.. 1 0	..
— French	.. 0 6	..
Rhubarb, per bundle	0 6	1 0
Salsafy, per bundle	.. 0 9	..
Seakale, per punnet	2 0	3 0
Shallots, per lb.	.. 0 3	..
Spinach, per bushel	4 0	..
Turnips, per bundle	0 4	..
— New French, do.	2 0	..

Potatos—Rocks, 105s. to 110s.; Regents, 120s. to 170s.; Flukes, 130s. to 160s., Victorias, 120s. to 160s. per ton.

Fruit.

	s. d.	s. d.
Apples, per ½-sieve	1 6	5 6
Cobs and Filbts., lb.	0 9	1 0
Grapes, per lb.	.. 8 0	20 0
Lemons, per 100	.. 6 0	10 0
Melons, each	.. 0 0	0 0
Oranges, per 100	.. 6 0	12 0
Pears, per doz.	.. 3 0	10 0
Pine-apples, p. lb.	.. 1 6	4 0
Strawberries, per oz.	0 3	1 0

Plants in Pots.

	s. d.	s. d.
Azaleas, per doz.	..24 0	60 0
Begonias, per doz.	.. 6 0	12 0
Bouvardias, do.	..12 0	18 0
Cinerarias, per doz.	.. 6 0	18 0
Crocus, do.	.. 4 0	9 0
Cyclamen, do.	.. 9 0	18 0
Cyperus, do.	.. 6 0	12 0
Deutzia, do.	.. 6 0	18 0
Dielytra, do.	..12 0	24 0
Dracæna terminalis	30 0	60 0
— viridis, per doz.	18 0	24 0
Epacris, do.	..12 0	18 0
Euphorbia jacquinifolia, per doz.	.. 9 0	18 0
Ficus elastica	.. 2 6	15 0
Fuchsia, per doz.	.. 9 0	18 0
Genista, do.	.. 9 0	24 0
Heaths, in var., doz.	12 0	30 0
Hyacinths, per doz.	9 0	18 0
Lily of Valley, doz.	12 0	30 0
Mignonette, do.	.. 6 0	9 0
Myrtles, do.	.. 3 0	9 0
Pelargoniums, scarlet, per doz.	.. 4 0	9 0
— in variety, doz.	18 0	36 0
Primula sinensis, do.	6 0	12 0
Roses, Fairy, do.	.. 9 0	15 0
— various, do.	..18 0	30 0
Solanums, do.	.. 6 0	24 0
Tulips, do.	.. 8 0	12 0
Veronica, do.	.. 4 0	12 0

Cut Flowers.

	s. d.	s. d.
Arum Lilies, per doz.	4 0	12 0
Azaleas, 12 sprays	.. 0 6	2 0
Camellias	.. 3 0	12 0
Carnations, 12 blooms	2 0	4 0
Cineraria, per bunch	1 0	2 0
Cyclamen, 12 blooms	0 3	0 6
Eucharis, per doz.	.. 6 0	12 0
Euphorbia, 12 spr.	.. 4 0	9 0
Gardenia, per doz.	.. 4 0	12 0
Heliotropes, 12 spr.	0 6	1 0
Lily of Valley, 12 spr.	1 0	4 0
Mignonette, 12 bun.	6 0	9 0
Narcissus, per dozen	1 0	3 0
Nemophila, 12 bun.	4 0	6 0
Pelargoniums, 12 spr.	1 0	3 0
— Zonal do.	.. 0 6	1 6
Pinks, white, p. doz.	2 0	4 0
Primula, dbl., p. bun.	1 0	1 6
Rhododend., 12 hds.	3 0	6 0
Hyacinths, 12 sprays	1 0	3 0
Roses, indoor, p. doz.	1 6	10 0
Spiræa, 12 sprays	.. 1 0	4 0
Stephanotis, 12 sprays	9 0	18 0
Violets, 12 bunches	.. 0 6	2 0

SEEDS.

London: *April 12.*—Owing to the recent favourable weather, the close approach of the holidays, and the consequent closing on Good Friday and Easter Monday of our Mark Lane Exchange, a large amount of business has been thrown into the early part of the present week. For red Clover seed a good steady consumptive demand is shown, which, assisted to some extent by export orders from France, is rapidly working off the comparatively small stock remaining in London. Alsike and white Clover, on account of their remarkable scarcity, realise extreme rates. For Trefoil seed prices are hardening; in fact, so far as regards the last three varieties, it does not seem at all improbable that the available supply may prove unequal to the wants of this unique season. For Lucerne and Sainfoin there is a good sale at full rates. Perennial Rye-grasses are in small request, but imported Italian meets an improved inquiry. Spring Tares move off slowly, but are not quotably cheaper on the week. White Mustard and sowing Rape seed, being both scarce, are held with great firmness. Canary seed, in spite of the concession made by holders, fails to attract buyers. Hemp seed is unaltered. English Linseed keeps in short supply. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Trade at Mark Lane on Monday was very quiet, the approaching holidays having a tendency to check, rather than to increase, business. In Wheat operations were merely to cover immediate wants, and the rates of last Monday were not in all instances maintained. Malting Barley was almost neglected, and the few transactions in other descriptions were at rather less money. Malt was dull, and without quotable alteration in price. There was only a moderate supply of Oats, and prices were reported 6*d.* per quarter higher. Maize was steady, and previous quotations were asked for both Beans and Peas. The flour market was inactive, and prices had a drooping tendency.—On Wednesday the inquiry was limited all round. English Wheat was unaltered in value, but dull of sale. Foreign Wheat was equally dull, and tending downwards; flour was neglected; Barley rather firm, though not active; Beans quiet, at the late decline; and Peas in moderate request at steady prices. For Maize rates were nominal, but very firm; and Oats were the turn against buyers.

CATTLE.

At Copenhagen Fields on Monday the supply both of English and foreign beasts was short. Trade was active, consequently prices advanced a little, with a good clearance. The number of sheep was larger; there was a fair demand, and a good clearance effected at a slight advance. Choice calves and lambs were scarce and dear. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.*, and 5*s.* 6*d.* to 5*s.* 10*d.*; calves, 5*s.* 6*d.* to 6*s.* 8*d.*; sheep, 4*s.* 6*d.* to 5*s.* 4*d.*, and 5*s.* 8*d.* to 6*s.* 2*d.*; lambs, 8*s.* to 9*s.* 4*d.*; pigs, 4*s.* 4*d.* to 5*s.* 4*d.*

POTATOS.

The Borough and Spitalfields Markets reports state that the trade has been steady, and no material change in prices. The supply was moderate. Kent Regents, 120*s.* to 150*s.* per ton; Essex ditto, 110*s.* to 140*s.*; rocks, 100*s.* to 110*s.*; flukes, 130*s.* to 160*s.*; Victorias, 120*s.* to 170*s.*; kidneys, 100*s.* to 125*s.*—Last week's imports of Potatos into London consisted of 21,020 bags from Hamburg, 3178 bags Antwerp, 12 baskets Amsterdam, 9114 bags Harlingen, 1272 bags Ghent, 68 sacks St. Nazaire, 130 tons St. Valery, 962 bags 138 sacks Rotterdam, 3313 sacks 664 tons Dunkirk, 290 sacks Boulogne, 40 barrels New York, 586 bags Bremen, 63 tons Rouen, and 100 bags and 941 packages from Malta.

"ARCHIMEDEAN" AMERICAN LAWN MOWERS,

Will Cut Long and Wet Grass (as well as Dry and Short) without Clogging.

They are especially adapted for Cutting Slopes, Steep Embankments, under Shrubs, and close up to Trees, &c.; and are also extremely light in draught, simple in construction, well made, and not likely to get out of order.

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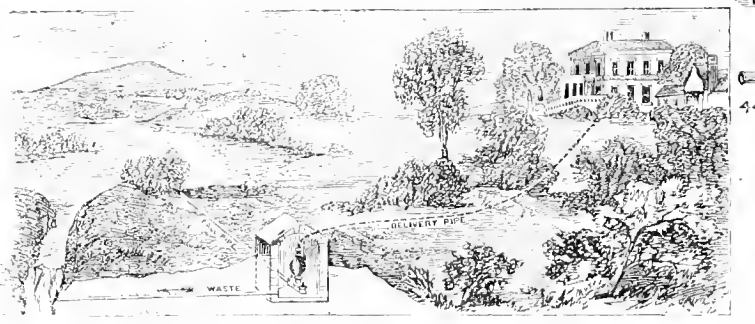
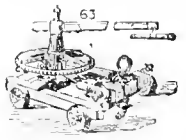
WALTER CARSON & SONS, La Belle Sauvage Yard, Ludgate Hill, London, E.C.; and 21, Bachelor's Walk, Dublin. *Selling Agents.*

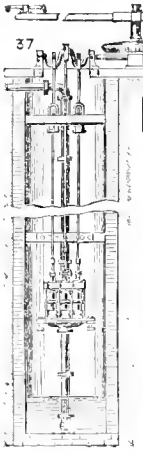
S. OWENS & CO.,

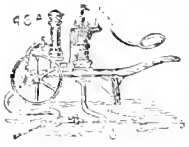
HYDRAULIC ENGINEERS,

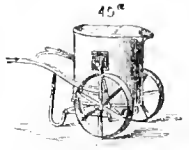
WHITEFRIARS STREET, LONDON, E.C.

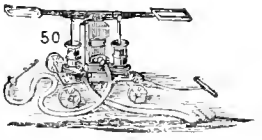


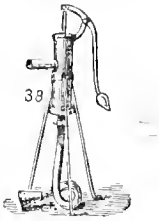


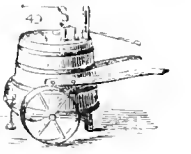


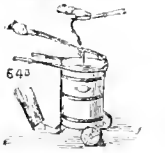


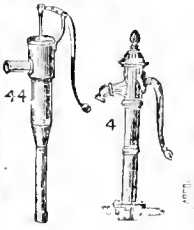


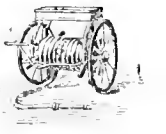


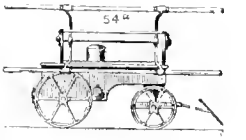












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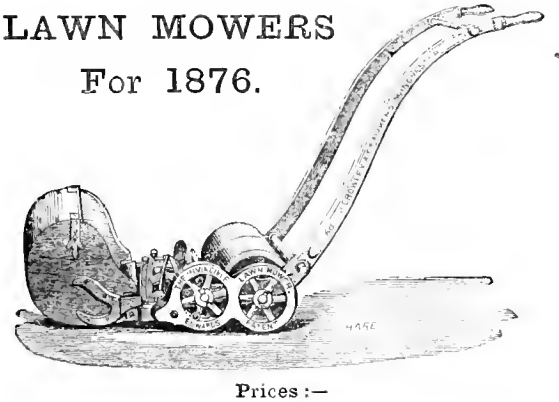

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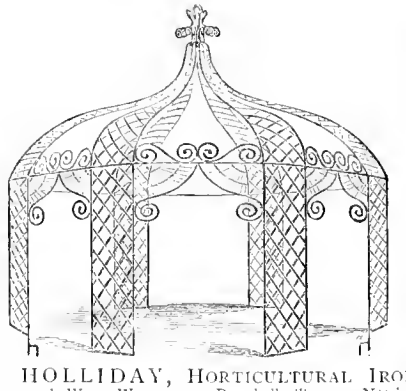

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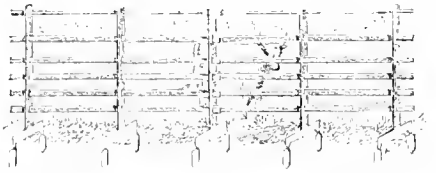

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TANNED NETTING for protecting the above from Frost, Blight, Birds, &c., 2 yards wide, 3*d.* per yard, or 100 yards, 20*s.*; 4 yards wide, 6*d.* per yard, or 50 yards, 20*s.*

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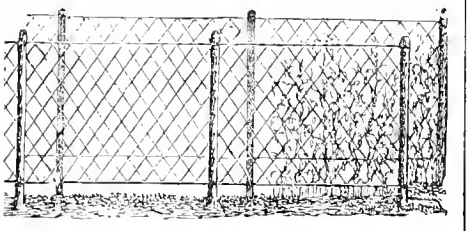

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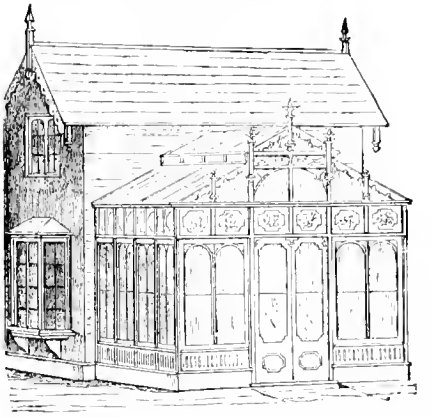

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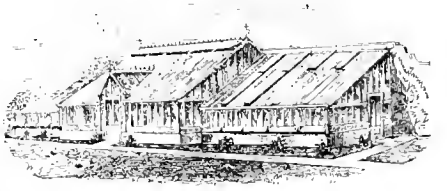

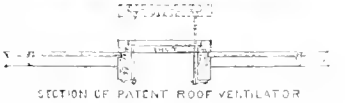

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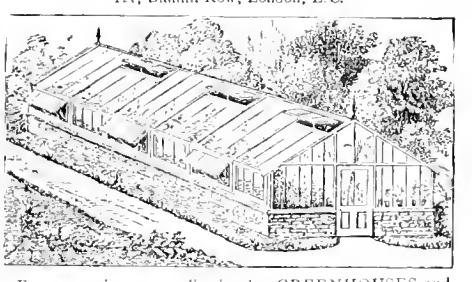

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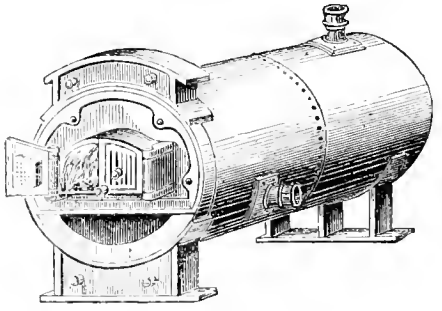

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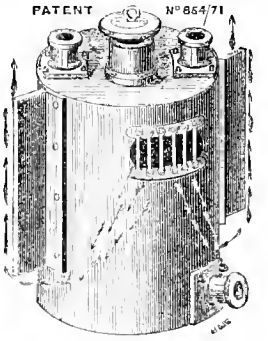

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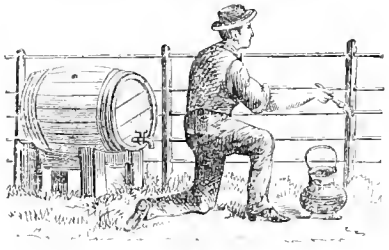

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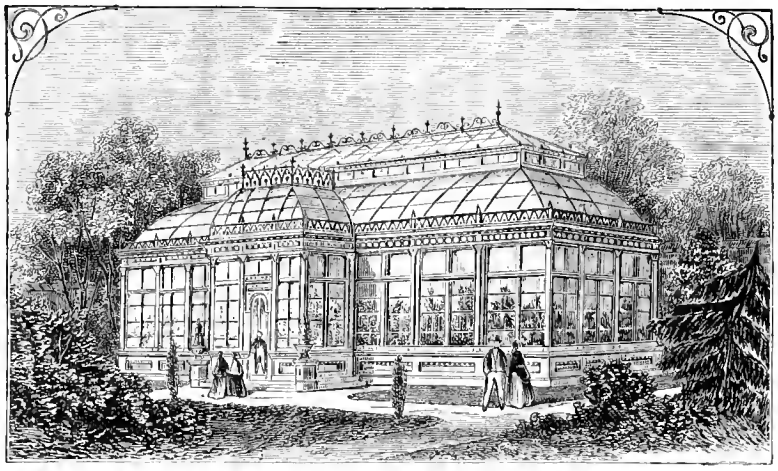

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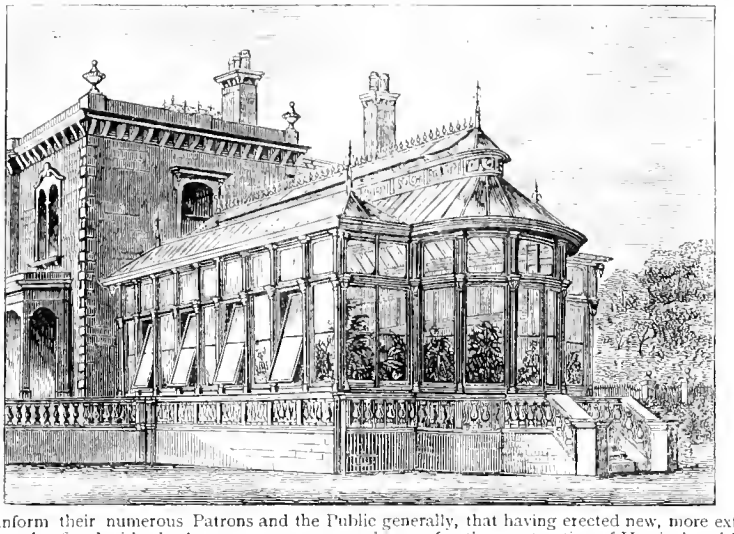

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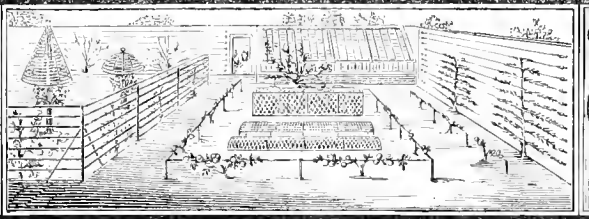

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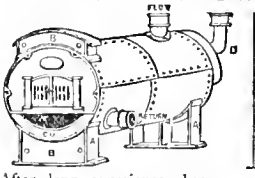

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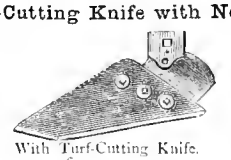

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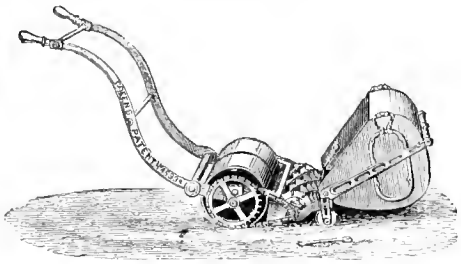

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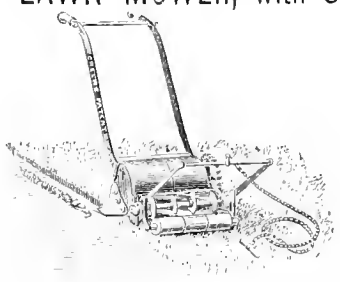

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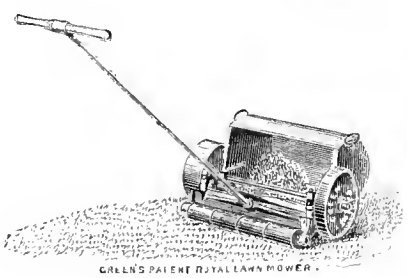

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,, 22 ,, ...	7	10	0
,, 24 ,, ...	8	0	0

For Donkey or Pony.

To cut 30 inches..	10	0	0

GREEN'S PATENT Grass Edge Clipper.

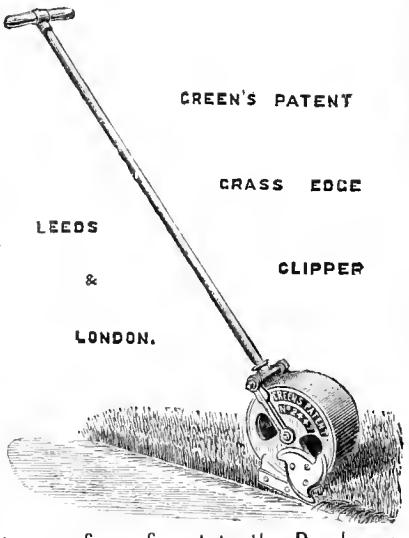
This Machine is specially designed to meet a want which has long been felt in cutting the edges of walks, borders, flower-beds, &c. With it a person is enabled to cut the edges at an easy walking pace, and a great saving of labour is thereby effected.

Price 21s. each

At the works or at our London depot:

23s. each, including Packing Case and Carriage paid to all the principal Railway Stations and Shipping Ports in England, Ireland, and Scotland.

The Grass Edge Clipper and Turf Cutter can be had in a combined Machine, price 50s. each at the Works, or at our London Depot; 53s. each, including Packing Case and carriage paid to all the principal Railway Stations and Shipping Ports in England, Scotland, and Ireland.



All the above Machines are Warranted to give Satisfaction, otherwise they may be returned at once, free of cost to the Purchaser.

THEY CAN BE HAD FROM ALL RESPECTABLE IRONMONGERS AND SEEDSMEN IN THE UNITED KINGDOM; OR FROM

THOMAS GREEN & SON, Smithfield Ironworks, Leeds; and 54 and 55, Blackfriars Road, London, S.E.

ILLUSTRATED PRICE LIST FREE ON APPLICATION.

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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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Subscribers who wish to have "The Gardeners' Chronicle" forwarded DIRECT FROM THE OFFICE are respectfully informed that payment MUST BE MADE IN ADVANCE.

ROYAL BOTANIC SOCIETY, Gardens, Regent's Park, S.W.
EXHIBITION of SPRING FLOWERS, WEDNESDAY, next, April 26. Gates open at 2 o'Clock. Tickets to be had at the Gardens only by Vouchers from Fellows of the Society, price 2s. 6d. each. The EXHIBITION of CLEMATIS will be opened on MONDAY, May 1.

CRYSTAL PALACE.—GREAT FLOWER SHOW, MAY 19 and 20. GREAT ROSE SHOW, JUNE 16 and 17. GOAT SHOW, MAY 5, 6, and 8. For Schedules and Entry Forms apply to General Manager.

ALEXANDRA PALACE. — The FIRST GREAT FLOWER SHOW of the Season will be held on FRIDAY and SATURDAY, May 5 and 6. LAST DAY of ENTRY, April 28.
The GREAT ROSE SHOW of the Season will be held on FRIDAY and SATURDAY, July 7 and 8. LAST DAY of ENTRY, July 1.
Schedules of Prizes and all particulars may be had on application to ALEX. McKENZIE, 1, and 2, Great Winchester Street Buildings, E.C., and at the Alexandra Palace, Muswell Hill, N.

ROYAL FLORA SOCIETY of BRUSSELS.
The GRAND INTERNATIONAL HORTICULTURAL EXHIBITION will be held at Brussels from APRIL 30 to MAY 6.
Accredited Agents: Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

ROYAL MANCHESTER BOTANICAL and HORTICULTURAL SOCIETY.
EXHIBITION of AURICULAS and MISCELLANEOUS PLANTS, Town Hall, APRIL 25.
ROYAL NATIONAL TULIP SOCIETY'S SHOW at the Gardens, Old Trafford, MAY 26 and 27.
GRAND NATIONAL HORTICULTURAL EXHIBITION, JUNE 2 to 9.
EXHIBITION of CARNATIONS, FRUITS, &c., AUGUST 11 and 12.
For Schedules, apply to the undersigned,
BRUCE FINDLAY.
Royal Botanic Gardens, Manchester.

SPALDING HORTICULTURAL SHOW will take place on JUNE 21 and 22. The Prize List has been considerably extended. Schedules on application to
GEORGE KINGSTON, Secretary.
24, Hall Place, Spalding, March, 1876.

THE TORBAY HORTICULTURAL SOCIETY.—The above Society will hold its SUMMER SHOW at Torquay, on JUNE 28 and 29. Special Prizes for CUT ROSES (amounting to FIFTY POUNDS), open to all England. Prize Lists and Form of Entry ready on the 20th inst.
W. FANE TUCKER, Capt., Hon. Sec.
Braddon Tor, Torquay.—April 10.

BRISTOL, CLIFTON and WEST of ENGLAND ROSE and STRAWBERRY SHOW, to be held in the Zoological Gardens, Clifton, on TUESDAY, July 4.
Schedule of Prizes, with Rules and Regulations, may be obtained of the Gatekeepers at the Gardens, or by letter addressed to the SECRETARY, Zoological Gardens, Clifton, on and after Monday next.

CARTER'S GRASS SEEDS for Lawns and Parks, 20s. per bushel.

CARTER'S GRASS SEEDS for Permanent Pastures, 22s. 6d. to 36s. per acre.

CARTER'S GRASS SEEDS. Carriage Free. To suit all Soils.

CARTER'S GRASS SEEDS for Renovating Meadows and Lawns, 18s. to 20s. per bush.

CARTER'S, THE QUEEN'S SEEDSMEN, 237 and 238, High Holborn, W.C.

ODONTOGLOSSUM CIRRHOSUM.—A plant in flower of this beautiful New Odontoglossum will be shown at the Sale, on MONDAY the 24th inst., at Mr. J. C. Stevens' Auction Rooms, 38, King Street, Covent Garden, W.C.

LILIUM AURATUM.—Unusually large, heavy, and plump Bulbs of this beautiful Lily, at 42s. and 60s. per dozen.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

TEA-SCENTED and NOISETTE ROSES —Splendid Plants, in 5½-inch pots, now ready; also New FRENCH and ENGLISH ROSES, in very fine Plants. LISTS free.
EWING AND COMPANY, Nurseries, Eaton, Norwich.

Roses New and Old.
EDWIN HILLIER offers the above in all the best varieties. The plants are most healthy, and very vigorous. PRICE LISTS on application.
The Nurseries, Winchester.

New Roses for 1876.
H. BENNETT offers a careful selection of the above, in plants not to be equalled; unusually fine this season; ready in March. DESCRIPTIVE LISTS post-free.—Manor Farm Nursery, Stapleford, Salisbury.

TEA-SCENTED ROSES.—Strong plants, of best varieties, for Bedding or General Decoration, at 12s. per dozen, 80s. per 100. Immense Stock of GREENHOUSE and BEDDING PLANTS, which are worth growing. See CATALOGUE, free on application.
WILLIAM KNIGHT, Floral Nursery, Hailsham, Sussex.

Verbenas, Verbenas, Verbenas.
WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

VERBENAS, VERBENAS, VERBENAS. —White, Purple, Scarlet, and Pink; also twelve extra choice named varieties, strong, healthy-rooted cuttings, perfectly free from disease, 6s. per 100, 50s. per 1000, for cash.
H. BLANDFORD, The Dorset Nurseries, Blandford.

Verbenas, Verbenas.
JOHN SOLOMON offers White, Scarlet, Purple, Pink, Crimson, Rose, and other mixed sorts, good strong spring-struck cuttings, well rooted, at 6s. per 100, 50s. per 1000, package included. Cash to accompany all orders.
Islington Nursery, Park Street, Islington, N.

Special Offer.—Vesuvius, Mrs. Pollock.
WILLIAM BADMAN offers good plants of Vesuvius, from single pots, 10s. per 100, 85s. per 1000; Mrs. Pollock, 18s. per 100; Crystal Palace Gem, 15s. per 100, Package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

CHOICE SHOW PELARGONIUMS, fine plants, 6s., 9s., and 12s. per dozen.
EDWIN COOLING, Mile Ash Nurseries, Derby.

Plant Catalogue.
CHARLES TURNER'S DESCRIPTIVE LIST of PLANTS for the Season, including several new varieties now offered for the first time, is ready, and may be had on application.
The Royal Nurseries, Slough.

Notice.—Seeds, Seeds.
WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds.
CATALOGUES now ready, which contain every requisite, at fair prices, post-free on application.
Highgate, London, N.

CONSIGNMENTS wanted of best FRUITS and VEGETABLES by GEO. LAXTON, Jun., Salesman, Covent Garden Market. Unexceptionable references as to cash returns.

WANTED, 60 LIME TREES, for Avenue, with good stout stems and bushy heads. Send lowest cash price to
G. STEVENS, St. John's Nursery, Putney, S.W.

WANTED, AMERICAN or ITALIAN TUBEROSE ROOTS. Price, &c., to
JOHN REEVES, Nurseryman, Acton, W.

WANTED, KIDNEY and other choice sorts of POTATOS, for Seed. State prices to
JOSEPH TREMBLE AND SON, Nurserymen, &c., Penrith.

SUTTON'S GRASS SEEDS for PASTURES, 22s. 6d. to 36s. per Acre. Carriage free.

SUTTON'S GRASS SEEDS for PARK GROUNDS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for GARDEN LAWNS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for CROQUET GROUNDS, 20s. per Bushel. Carriage free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

LARCH.—10,000, 1 to 1½ foot, at 15s. per 1000; 10,000, 1½ to 2 feet, at 25s. per 1000; 8000, 2½ to 3½ feet, at 35s. per 1000.
JAMES SMITH, Darley Dale Nurseries, Matlock.

SCOTCH FIR.—A large quantity of Scotch Fir to be Sold cheap—1-yr., 1-yr. transplanted, and 2-yr., 2 yr. transplanted, very fine healthy plants. For prices and samples apply to
Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

April the Best Month for Planting Evergreens.
COMMON LAURELS, 100,000, 2 to 4 feet; PORTUGAL LAURELS, and other Evergreens. CATALOGUES on application. Address
WM. WOOD AND SONS, The Nurseries, Maresfield, Uckfield, Sussex.

Rhododendrons.
W. H. ROGERS, Red Lodge Nursery, Southampton, offers choice named Rhododendrons of all the leading and best sorts, at the low price of £5 per 100, or selected 18s. per dozen.
N.B. This is a fine month for planting them.

Hardy Perennials Illustrated.
THOS. S. WARE'S CATALOGUE of the above for 1876, including New, Rare, and Choice Alpines, Herbaceous Plants, Aquatics, Bog Plants, and a few Bulbs, is now ready, free on application.
Hale Farm Nurseries, Tottenham, London.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

VINES. — Black Hamburgh, Muscat of Alexandria, Black Alicante, and Lady Downe's, can still be supplied in thoroughly ripened Fruiting and Planting Canes.
JAMES DICKSON AND SONS, "Newton" Nurseries Chester.

Asparagus.—Plant Now
CONOVER'S COLOSSAL and GIANT,— Half a million, 1-yr., 2-yr., 3-yr., and 4-yr. plants. Special prices on application to
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

ASPARAGUS, Giant and Conover's Colossal, 1-yr., 2-yr., and 3-yr.; immense Stock at very low prices.
EWING AND COMPANY, Nurseries, Eaton, Norwich.

To the Trade.
ASPARAGUS, 1-yr., 2-yr., and 3-yr TROPÆOLUM CANARIENSE.
JAMES BIRD, American Nurseries, Downham.

ROBINSON'S CHAMPION ONCABBAGE PLANT, strong, 2s. 6d. per 1000, on application to
THOMAS PERKINS, 42, Drapery, Northampton.

Mangel and Swede.
JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself.
Bardney Manor, Lincoln.

To the Seed Trade.
H. AND F. SHARPE'S special SPRING CATALOGUE of home-grown MANGEL WURZEL, TURNIP, and other AGRICULTURAL and GARDEN SEEDS, is now ready, and will be forwarded on application.
Seed Growing Establishment, Wisbech.

Seed Potatos for Sale.
FORTYFOLDS, FLUKES, REGENTS, and other varieties, at low prices.
JOHN BATH, Potato Salesman, 34, Wellington Street, Covent Garden, London, W.C.

Hothouses, Hot-water Apparatus, &c.
HALLIDAY AND CO., HOTHOUSE BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates and Plans free. Best Construction! Best Materials! Best Workmanship! Catalogues free.
Offices: 22, Barton Arcade, MANCHESTER.

DICK RADCLYFFE AND CO. supply every requisite for the Seed Trade. Special offers of GARDEN STICKS and LABELS, FLOWERS for Easter Decoration, WHITE CAPES, WREATHS, &c., with Lists, on application.
128 and 129, High Holborn, W.C.

SALES BY AUCTION.

Woodford, Essex.—For Occupation or Investment.

SIX ACRES of fine, rich MARKET GARDEN or NURSERY LAND, with SEVEN-ROOMED DWELLING-HOUSE and OUTBUILDINGS standing thereon, held for an unexpired term of 45 years at a moderate ground-rent.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on MONDAY, April 24, at 2 o'Clock punctually, the valuable LEASEHOLD ESTATE known as Lucas' Farm, situate opposite the old Mill Inn, Woodford, Essex, and in a locality where there is a great demand for produce.

May be viewed prior to the Sale. Particulars of Sale had on the Premises, and of the Auctioneers, 98, Gracechurch Street, City, and Leytonstone, E.

Auction Mart, Tokenhouse Yard, E.C.

IMPORTANT SALE of 450 LOTS of choice ESTABLISHED and rare IMPORTED ORCHIDS and ORNAMENTAL FOLIAGE PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION in the large Estate Room, at the Mart, Tokenhouse Yard, London, E.C., on FRIDAY, April 28, at half-past 12 o'Clock precisely, a choice Collection of ESTABLISHED ORCHIDS, several of them in flower. The Collection includes many rare kinds, such as Oncidium macranthum, Odontoglossum Hallii, O. Roezlii, O. cirrhosum, Dendrobium Wardianum, Calanthe Veitchii, Masdevallia Harryana, Oncidium sarcodes, Phalænopsis Schilleriana, P. amabilis, Saccolabium guttatum, the dove-flower, Oncidium Marshallianum, Cattleya Mendelii, Odontoglossum Phalænopsis, O. vexillarium. At the same sime will be Sold a quantity of IMPORTED ORCHIDS from India, such as Pleiones, Dendrobiums (including the violet-scented D. amœnum), Saccolabiums, Aerides and others. Also a quantity of plants of the beautiful ODONTOGLOSSUM CRISPUM (Alexandræ), with some ORNAMENTAL DECORATIVE PLANTS, PALMS, FERNS, &c.

On view morning of Sale. Catalogues had at the Rooms, and of the Auctioneers and Valuers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Odontoglossum cirrhosum.

MR. J. C. STEVENS has received instructions from Mr. Wm. Bull to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, April 24, at half-past 12 o'Clock precisely, about 200 plants of the new and marvellously beautiful ODONTOGLOSSUM CIRRHOSUM. A plant of this extremely handsome new introduction has just flowered for the first time, and was exhibited at the Royal Horticultural Society's meeting on Wednesday the 5th inst., when it elicited unusual admiration, and was unanimously awarded the First-class Certificate it so justly merited.

On view the morning of Sale, and Catalogues had.

Odontoglossum Hallii—Dendrobium barbatulum.

MR. J. C. STEVENS will include in his Sale, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, April 24, some good strong plants of Odontoglossum Hallii, Odontoglossum crispum (Alexandræ), and some plants of the pretty white-flowering Dendrobium barbatulum.

On view the morning of Sale, and Catalogues had,

Imported Orchids from Assam.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, April 24, at half-past 12 o'Clock precisely, an importation of ORCHIDS from ASSAM, including quantities of the hitherto rare Pleione humilis and Pleione maculata, Vanda cœrulea, Vanda undulata, Dendrobium Hookerianum, Dendrobium marmoratum, Cœlogyne corymbosa, probably never before seen in England in a living state; the rare Cœlogyne barbata, which was said by Dr. Lindley to be perhaps the finest of the fine genus.

On view the morning of Sale, and Catalogues had.

Flowering Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, April 26, at half-past 12 o'Clock precisely, 250 Established ORCHIDS, of which about 130 plants are in Flower or bud, and comprising a magnificent example of Masdevallia Harryana, several strong plants of Odontoglossum citrosmum, O. Bluntii, and O. Phalænopsis, and the new and charming O. Roezlii, O. nævium majus, Oncidium macranthum, Mormodes luxatum eburneum, and M. pardina unicolor, &c., with extra strong or specimen plants of many well known older kinds, the property of Messrs. J. Backhouse & Son, York. Also a collection of Established ORCHIDS from Belgium, imported plants of DENDROBIUM CHRYSOTIS and D. FALCONERI, a quantity of Bulbs of LILIUM KRAMERI, &c.

On view the morning of Sale, and Catalogues had.

Important Sale of Rare Plants.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, April 27, at half-past 12 o'Clock precisely, SURPLUS PLANTS from the Collection of the late S. Rucker, Esq., of West Hill, Wandsworth, comprising Specimen Azaleas and Palms, a choice collection of Filmy Ferns, including Trichomanes, Gleichenias, &c.; a very fine collection of Nerines, Ferns, Crotons, Dracænas, and Miscellaneous Stove Plants, &c.

On view the morning of Sale, and Catalogues had.

Sunbury, Middlesex.

To MARKET GARDENERS, HORTICULTURISTS, BUILDERS, and OTHERS.

MR. W. GOUGH is directed to LET by AUCTION, at the Running Horse Inn, Sunbury, on FRIDAY, May 12, at 3 for 4 o'Clock in the afternoon, for a term of Fifty Years from Christmas last, 15 Acres of First-class MARKET GARDEN GROUND, well stocked with Fruit Trees and Bushes of the choicest sorts, forming a most valuable Fruit Plantation, in the highest state of cultivation; beautifully situate in the Parish of Ashford, about half a mile from the Sunbury Station on the Thames Valley Line of the London and South-Western Railway, fronting the Staines high road and the main road from Feltham to Walton, on which it extends upwards of 1500 feet.

May be viewed, and particulars with conditions of letting had at the place of letting, and of Mr. W. GOUGH, Auctioneer, Surveyor, and Land Agent, Sunbury.

TO BE SOLD, by PRIVATE CONTRACT, the GOLDEN CROSS NURSERIES, with extensive Glasshouses, Dwelling-house, &c., situate near Stroud, Gloucestershire. Apply to
RESTALL AND FORD, Auctioneers, Stroud.

TO BE LET, with Immediate Possession, an old-established FLORIST'S BUSINESS with Conservatories. Apply for information at the
Mall Nursery, Notting Hill Gate, W.

To Nurserymen, &c.—Centre of Lake District.

VALUABLE NURSERY GARDENS and SEED BUSINESS for DISPOSAL.

TO BE SOLD, to a Private Purchaser or Otherwise, at an early date, an old-established NURSERY and SEED BUSINESS, in good condition, situate in the most favourable and central part of the English Lake district, doing a capital trade, with a most respectable and extensive connection, chiefly ready money. Nursery about 8 Acres. Stock, &c., at valuation. Suitable for an energetic person with a moderate capital. The Nursery has been laid out at considerable cost, and is largely visited by visitors to the Lake District. An extensive Wholesale and Retail Fruit and Seed Business is carried on in connection with the Nurseries. For particulars apply to
Messrs. MOSER AND SONS, Solicitors, Kendal; Mr. G. C. COOKMAN, 18, Southampton Street, Strand, London, W.C; or to Mr. WM. BARTON, Ambleside.

WANTED to PURCHASE, a NURSERY with good Seed Trade attached, in a suitable district. Send full particulars to
J., Pooley & Co., 23, Bush Lane, Cannon Street, London, E.C.

SEVEN HUNDRED POUNDS WANTED at good Interest, or as Sleeping Partner, to pay out a present Partner in a first-class Nursery Business. Apply by letter to E. C., *Gardeners' Chronicle* Office, W.C.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 98, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Cinerarias—Hardy's Champion Strain.

H. J. HARDY has much pleasure in calling special attention to his splendid strain of Cinerarias now in bloom. Specimen flowers may be had free by post. Seed, 1s., 2s. 6d., and 5s. packets.
Stour Valley Seed Grounds, Bures, Essex.

CENTAUREA RAGUSINA, fine plants, established in single pots, 20s. per 100, cheaper out of pots. THYMUS CITRIODORUS AUREUS MARGINATUS, established plants from open ground, 3s. per 50; 5s. per 100; 21s. per 500; 40s. per 1000.
J. J. MARRIOTT, Highfield Nurseries, Matlock, Derbyshire.

Sow Now.

YOUNG'S NONSUCH PEA.—The most abundant and perpetual bearing of all Marrowfat Peas. Half-pint trial packets free per post for 1s. 6d., per quart, 5s., through all Seedsmen, or of
CHARLES YOUNG, Balham Hill Nursery, S.W.

GIANT ASPARAGUS PLANTS, the best that money can procure, all certain to grow, 2s. 6d. per 100. This delicious vegetable does not require half the expense usually incurred in planting it. See RICHARD SMITH'S SEED LIST for 1876.
Extra strong SEAKALE, 2s. per dozen.
RICHARD SMITH, Nurseryman, Worcester.

ENCEPHALARTOS CAFFRA.—Two large specimens of the above, in fine health, for Sale, with stems from 7 to 9 feet high, and 2½ to 3 feet in circumference, with fourteen leaves each. They are considered to be from 1500 to 2000 years old. Price moderate. Apply to
Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

To the Trade,

TEA-SCENTED ROSES, in Pots.—Magnificent Plants, of best varieties only, at 9s. per dozen, or 60s. per 100. An immense Stock of all other plants worth growing. Catalogue free.
WILLIAM KNIGHT, Floral Nursery, Hailsham, Sussex.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000; and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.
Wonersh Nursery, Guildford, Surrey.

Centaurea candidissima (ragusina).

WHOLESALE PRICE.

WOOD AND INGRAM offer fine summer sown plants of the above, thoroughly established in thumb pots, at 20s. per 100; package, 3s. 6d. per 100, or 2s. for 50, not less than which will be sold at the price.
The Nurseries, Huntingdon.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to intimate that he has just issued a SUPPLEMENTARY LIST to his General CATALOGUE of New and Rare Plants at considerably reduced prices, and which will be forwarded free to all applicants, either by himself or by his Agents,
Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

To Farmers, Gardeners, and Others.

CABBAGE PLANTS—true Enfield Market and Wheeler's Imperial—4s. per 1000; Red Dutch, 6s. per 1000. Best stock in England.
SAGE and THYME ROOTS, 5s. per 100. Best Show POLYANTHUS, 8s. per 1000. New PYRETHRUMS, handsome, mixed colours, 2s. per dozen. GOLDEN THYME, 1s. per dozen. Terms cash.
RICHARD WALKER Market Gardens, Biggleswade.

SANDOWN PARK CLUB. GRAND FLOWER and FLOWER SHOW.
A GRAND FLOWER and FRUIT SHOW, under distinguished Patronage, will be held in Sandown Park, Esher, Surrey, on FRIDAY and SATURDAY, July 7 and 8, when upwards of £350 will be given in Prizes. Schedules will shortly be ready, and may be had on application to
JOHN WILLS, Royal Exotic Nursery, Onslow Crescent, South Kensington, S.W.
J. WHITTAKER BUSHE, General Manager.

NEWPORT (MON.) and COUNTY HORTICULTURAL SOCIETY.
The SECOND ANNUAL EXHIBITION of the above Society will take place on THURSDAY, July 20, 1876.
SCHEDULES of PRIZES may be had upon application to the Hon. Secs., Messrs. L. RAILTON and W. CHRISTOPHERS, Jun. 15, Commercial Street, Newport.

CINERARIAS.—F. AND A. SMITH'S unrivalled Collection of the above is now in full beauty. An inspection is solicited, or blooms will be sent on receipt of six stamps. Seed in 1s., 2s. 6d., and 5s. packets.
The Nurseries, West Dulwich, S.E.
N.B.—F. & A. S.'s General CATALOGUE will shortly be ready, and will be sent post-free to all applicants.

PLANT NOW.
PORTUGAL LAURELS, 3 feet, 40s.; Common ditto, 4 to 5 feet, 30s.; Scarlet Flowering CHESTNUT, 10 to 12 feet, Standards, 60s.; BUSH COMPACTA, 4 to 5 feet, 60s.; CUPRESSUS LAWSONI, 3 to 4 feet, 50s.; THUJA GIGANTEA, 4 feet, 60s.; HOLLY, 1½ foot, 20s.; YEWS, 1½ foot, 20s. per 100; White American SPRUCE, 3 to 4 feet, fine, 30s. per 100. All very fine.—J. JACKSON, Nursery, Kidderminster.

To Noblemen and Gentlemen.

CHOICE ORCHIDS.—To be Disposed of, a Collection of about 500 carefully selected East Indian and South American ORCHIDS, comprising a number of large Specimen Plants, in the best health, which have received many prizes at Floral Exhibitions. Having taken great pains in selecting these the owner would prefer to dispose of them as a whole.
A., 301, Henry Greenwood, Advertising Agent, Liverpool.

Double Pyrethrums.

THOMAS. S. WARE recommends the immediate planting of the above and other Hardy Florists' Flowers, including DELPHINIUMS, PHLOXES, DIANTHUS, PENTSTEMONS, &c. For descriptions and prices see New Spring CATALOGUE, free on application.
Hale Farm Nurseries, Tottenham, London.

Verbenas. Verbenas, Verbenas.

WILLIAM MEADMORE offers White, Scarlet, and Purple King, strong well-rooted cuttings, at 6s. per 100. GERANIUM, MARSHAL MACMAHON the best bronze bedder, 2s. 6d. per dozen. Package included.
Nurseries, Romford, Essex.

Vines.

E. G. HENDERSON AND SON have fine strong fruiting-sized VINES, in several varieties, of the popular kinds, still to offer.
Wellington Nursery, St. John's Wood, London, N.W.

New and Genuine Seeds Only.

Now ready, gratis and post-free,

BRUNNING AND CO.'S New Illustrated and DESCRIPTIVE CATALOGUE of the above for the present season, containing a selection of the choicest novelties, together with the most approved older varieties, profusely Illustrated, and contains a splendid Coloured Plate representing a group of choice Hybrid Gladioli, for the growth of which their Nurseries are noted. Forwarded post-free to all applicants.
ISAAC BRUNNING AND CO., The Yarmouth Seed Establishment, 1, Market Place, Great Yarmouth.

Special Offer.

LOBELIA PUMILA MAGNIFICA (New), acknowledged by all to be the finest Lobelia extant, and which for Carpet Bedding, Ribbon Bordering, or for the decoration of the Conservatory is unsurpassed. Colour, fine deep blue, flowers large, of great substance, very free flowering and strong grower.
RICHARD BIGGS has to offer many thousands of the above; small plants, per 100, 5s.; from single pots, with plenty of cuttings, per dozen, 4s. Post-free on receipt of stamps. Post-office Orders payable at the Ladywell Post-office.
The Nurseries, Lewisham, London, S.E.

This is the Time to Plant.

ASPARAGUS, 1-yr., 2-yr., and 3-yr. old Plants in any quantity. Very cheap. Price per 1000 on application to
E. JONES, Henley-on-Thames.

CABBAGE PLANTS, CABBAGE PLANTS.—Robinson's Champion Drumhead Cabbage Plants, at 2s. 6d. per 1000.
J. PERKINS AND SON, 52, Market Square, Northampton.

To the Trade Only.

MANGEL.—Special quotation for our guaranteed true and extra selected stocks, on application to F. SANDER AND CO., Seed Growers, St. Albans.

Fruiting and Planting Vines.

THE COWAN PATENTS' COMPANY (late Meredith) have still on hand a good selection of the above. Catalogues and prices on application. They can also offer good Fruiting and Succession PINES.
The Vineyard, Garston, near Liverpool.

Pelargoniums, Pelargoniums.

JAMES HOLDER'S unrivalled Collection—strong healthy Plants, Show, French, and Fancy varieties, at 35s. per 100, cash, Hamper and Packing included. Extra strong plants, in 48's and 32's, at 9s. and 12s. per dozen, Basket and Packing extra.
Crown Nursery, Reading.

PELARGONIUMS. — 200 dozen choice Show and Fancy varieties, to be cleared out: splendid plants, 13 Show and 12 Fancy for 21s.; 55 plants for 42s., H. W.'s selection, package included.
New Fringed Pelargoniums Queen Victoria, 2s. 6d.; Elegantissima, 2s. 6d.; Duchess of Edinburgh, 3s. 6d.
CATALOGUES free on application to
HENRY WALTON, Edgend Nurseries, Brierfield, near Burnley, Lancashire.

To the Trade.

TROPÆOLUM SPECIOSUM, 20*s.* per 100; POLEMONIUM CERULEUM VARIEGATUM, 15*s.* per 100.
HOWDEN AND CO., Nurserymen, Inverness, N.B.

PINE PLANTS for SALE—about fifty Fruiting, eighty Succession, and one hundred Small Plants, chiefly a good variety of Queen. Apply to M. SAUL, The Gardens, Stourton, Knaresborough, Yorkshire.

AZALEAS.—A Gentleman wishes to DISPOSE of some good AZALEAS—large healthy plants, fit for Exhibition. Will be in splendid bloom next month.
A. M., Bath Post Office.

To those who wish to make a Cheap Display.

CARTER'S KING of TOM THUMB NASTURTIUMS, when in full bloom, equal, if not surpass Scarlet Geraniums. Sixpence per ounce, post-free. Price to the Trade on application.
T. SMITH, Seed Grower, Long Wittenham, Abingdon, Berks.

J. LINDEN'S Horticultural Establishment and Establishment for the Introduction of New and Rare Plants, Ghent, Belgium. The CATALOGUE of STOVE and GREENHOUSE PLANTS is now ready, and may be had gratis and post-free.
Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Mangel Wurzel.

BOLTON AND CO. beg to offer their fine stock of YELLOW GLOBE MANGEL WURZEL SEED.
Their large Champion Yellow Globe produces an immense weight per acre, and the Pedigree Mangel is the finest one grown, small top, fine clean skin, and single tap-root. Both of these superior Mangels give great satisfaction.
Moderate prices, on application.
BOLTON AND CO., Seed Merchants, Wood Green, London, N.

HOLLYHOCKS, HOLLYHOCKS, HOLLYHOCKS.—Seedlings from the best named show varieties, fine stuff, will flower this season, 4*s.* per dozen, 30*s.* per 100. Cash with order, package free.
JENNER AND SON, Florists, St. Leonards-on-Sea.

ASPARAGUS.—The noted GRAVESEND GIANT variety, strong, 3-yr. old, 3*s.* per 100; CONOVER'S COLOSSAL, 5*s.* per 100; hamper and packing included. T. EVES, Gravesend Nurseries.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of
WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

CHOICEST NEW FLOWER SEEDS.
Carriage post-free.
The choicest strains of the following:—
CALCEOLARIA, CINERARIA, PRIMULA, CYCLAMEN, POLYANTHUS, AURICULA — All in 1*s.* 6*d.*, 2*s.* 6*d.*, or larger packets.
Choice GERMAN and ENGLISH FLOWER SEEDS, in Collections:—No. 1, 10*s.* 6*d.*; No. 2, 15*s.*; No. 3, 21*s.*; No. 4, 30*s.*; No. 5, 12*s.*
Choice Hardy Annuals, „ Half-Hardy Annuals, „ Biennials and Perennials, | Choice Ornamental Grasses, „ Everlasting Flowers, &c. &c.
Descriptive PRICED CATALOGUE post-free on application.
JAMES DICKSON & SONS,
108, EASTGATE STREET, CHESTER.

Cheap Plants.

WILLIAM BADMAN offers the following cheap Plants for present potting:—
VERBENAS, Purple, Scarlet, White, Rose, Crimson, &c., best bedding sorts, healthy, hardy stuff, 6*s.* per 100, 50*s.* per 1000; also 20 fine named varieties, 8*s.* per 100.
CALCEOLARIA, Golden Gem and aurea floribunda, 5*s.* per 100, 40*s.* per 1000.
LOBELIA SPECIOSA (true), from cuttings, sturdy plants, 3*s.* per 100, 20*s.* per 1000.
HELIOTROPE, finest dark sorts, 6*s.* per 100.
PELARGONIUMS, Scarlet, White, Pink, Crimson, best sorts, from single pots, 1*s.* 6*d.* per dozen, 10*s.* per 100.
IRESINE LINDENI, fine crimson-leaved bedding plant, 6*s.* per 100.
CENTAUREA CANDIDISSIMA, silver leaf, in single pots, 20*s.* per 100, 3*s.* per dozen.
VESUVIUS, the best Scarlet Pelargonium for pots or beds, good plants, 1*s.* 6*d.* per dozen, 10*s.* per 100.
Package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

DAVID LLOYD AND CO. (LIMITED)
CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.
Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following:—
J. T. RUBERY, 8*a*, Rumford Place, Liverpool.
SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
R. AND J. TAYLOR, 17, Vachel Road, Reading.
AGENTS WANTED.

BEDDING VIOLAS for the MILLION.—Perfectly hardy, easily propagated, flower from April to October. 100 in 12 distinct named sorts for 20*s.*, 50 for 12*s.* 6*d.*, 25 for 7*s.* Also Prize Show and Fancy PANSIES and PHLOXES, own selection, 6*s.* 6*d.* per dozen. Sent free by post to all parts of the United Kingdom on receipt of post-office order.
DICKSONS AND CO., Nurserymen, Seedsmen and Florists, 1, Waterloo Place, Edinburgh. Established 1770. New Nurseries at Pilrig Park.

The Most Beautiful new Regal Pelargonium is

BEAUTY OF OXTON.
Price, 1 guinea each.
A pretty and charming novelty is the new double-flowering IVY-LEAVED PELARGONIUM, "KONIG ALBERT." Price 7*s.* 6*d.* each.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Grass Seeds.

BOLTON AND CO. have to offer fine new GRASS SEEDS for Permanent Pasture, and shall be happy to forward prices to buyers. Very liberal terms to large purchasers.
BOLTON AND CO., Seed Merchants, Wood Green, London, N.

GLOXINIAS, New, of 1875.—Six superior varieties, sent out by Messrs. Veitch & Son. Strong Plants, 2*s.* 6*d.* each; Dried Bulbs, per post, 10*s.* the set; older varieties, Dried Bulbs, 8*s.* per dozen.
ACHIMENES.—Six new varieties, sent out by Mr. B. S. Williams. Strong plants now ready, the set of six for 12*s.*
CALADIUMS, strong plants, in 4-inch pots (H. W.'s selection), 24*s.* per doz.; smaller plants, in 60-pots, 12*s.* per doz.
CAMELLIAS.—2000 ready in autumn.
CATALOGUES on application to
HENRY WALTON, Edgend, Brierfield, near Burnley, Lancashire.

THE ROYAL NORFOLK SEED ESTABLISHMENT
ESTD 1844.

SNOWFLAKE POTATO.

Having imported and grown largely of this splendid new variety last season we are in a position to offer fine English-grown seed tubers at the following rates:—

	s.	*d.*
Per pound	0	6
Per peck of 14 lb.	6	0
Per bushel of 56 lb.	21	0

Cheaper by the sack or ton.

Orders of 21s. and upwards carriage free.

P. McKinlay, Esq., Beckenham, the well-known authority, writing of this Potato in the *Gardeners' Magazine*, Jan. 15 last, says:—"My experience with American varieties has been somewhat extensive, and I find that they generally improve as they become acclimatised. . . . I have no doubt Snowflake will improve in quality, and will become one of the best in cultivation."

Upwards of Fifty other Varieties in Stock.

BEAUTIFULLY ILLUSTRATED
Catalogue of Kitchen Garden and Flower Seeds, Gladioli, &c.
POST-FREE ON APPLICATION.

DANIELS BROS
Seed Growers
NORWICH

Cedrus Deodara, 10 to 15 and 20 feet high.

WM. MAULE AND SONS now offer at this most favourable season for Planting—April and May—magnificent trees, at 10*s.* 6*d.* each, well-rooted, with good balls, from large pots. For Screens, Blinds, and immediate effect as an Evergreen Tree they are both Ornamental and Useful.
The Nurseries, Bristol.

NEW FUCHSIAS of 1875, now ready to send out, carefully selected from the best kinds sent out in 1875, in good plants. Twelve select New Fuchsias, 4*s.*; 12 best selected varieties of 1874, for 3*s.*; 12 very fine older varieties, 2*s.*; all sent post free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW DOUBLE WHITE GERANIUM "GEORGE SAND," the largest and best Double White; 12 superb varieties Double Geraniums, including "George Sand" and other new colours, in good plants, post-free for 6*s.*
NEW AGERATUM, DUCHESS of EDINBURGH, the best Dwarf Blue yet produced, 3*s.* per dozen, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW VICTORIA DAISIES.—This new strain of Double Daisies produces flowers 6 inches in circumference, on long foot-stalks 8 inches high, looking more like large Ranuncult than Daisies. They are decided acquisitions to our early spring-blooming plants. B. W. K. is now enabled to offer the following six varieties, post-free, for 2*s.*, viz.:—Albert Edward, Albert Victor, Masterpiece, Nil Desperandum, Renown, Queen Victoria; 12 newer varieties of 1873, in 12 fine varieties, for 6*s.*, post-free; also a fine mixture of colours, unnamed, at 1*s.* 4*d.* per dozen, or 8*s.* per 100, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

The Model Potato.

HARRISON AND SONS have a quantity of the above to offer, at 12*s.* per bushel; it is of robust habit, excellent quality, and fine shape. Highly recommended.
HARRISON AND SONS, Seed Growers, &c., Leicester.

GRAPE VINES.—Dr. Hogg, Waltham Cross, Ferdinand de Lesseps, Duke of Buccleuch.
H. LANE AND SON can supply strong Canes of the above at 7*s.* 6*d.* each; also a few of the older kinds.
The Nurseries, Great Berkhamsted.

AVENUE TREES.
Girth 4 ft. from ground.

LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10	inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8	„
MAPLES, Norway, 12 to 16 feet high ..	5 to 8	„
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10	„
„ Scarlet, 10 to 14 feet high	8 to 10	„
„ Double, 10 to 14 feet high	8 to 10	„
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10	„
ELMS, 15 to 18 feet	7 to 9	„

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.
Knap Hill Nursery, Woking, Surrey.

NEW VERBENAS (ECKFORD'S).
The finest ever yet offered. See
JOHN KEYNES' CATALOGUE, 1876.

NEW ROSES, 1876.
Selected varieties. See
JOHN KEYNES' CATALOGUE, 1876.

LETTY COLES (KEYNES')—the ROSE of the season—
Will be sent into commerce the first week in May.
All particulars, consult
JOHN KEYNES' CATALOGUE.

NEW DAHLIAS for 1876.
Keynes' grand flowers. See
JOHN KEYNES' CATALOGUE for 1876.
Castle Street Nursery, Salisbury.

Cranston's Nurseries (Established 1785).

TEA-SCENTED ROSES—20,000 strong, well hardened plants, in 5½-inch pots.
April and May are the best months for Bedding or Planting-out the Tea-scented, China, Noisette, and all Roses on their own roots. Selections, left to us, from 12*s.* to 15*s.* per dozen.
Descriptive Priced LISTS on application to
CRANSTON AND MAYOS, Hereford.

SILVER VARIEGATED GERANIUM, "Little Trot." The best Silver Variegated ever offered for Edging or Carpet Bedding. SILVER TRICOLORS, Eva Fish and Lass o' Gowrie.
Price per 100 or 1000 of the above on application.
W. POTTEN'S CATALOGUE of BEDDING PLANTS will be sent post-free to all applicants.
Camden Nursery, Sissinghurst, Staplehurst, Kent.

Spring Planting.

EVERGREENS of all kinds may be safely transplanted during this month. The stock of CONIFEROUS PLANTS, RHODODENDRONS, HOLLIES, PORTUGAL LAURELS, &c., is unsurpassed. See CATALOGUES.
The LAWSON SEED AND NURSERY COMPANY (LIMITED), Edinburgh and London; City Branch, 54, Bishopsgate Street Within, E.C.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham, will be glad to send their CATALOGUE for this season on application. The stock of the undernamed, in best sorts and good plants, is very large and fine:—

	Per doz. *s. d.*	P. 100 *£ s.*
Antirrhinums	3 6	1 5
Ageratums	2 0	0 12
Chrysanthemums	3 0	1 0
Carnations and Picotees, single plants	6 0	2 5
„ pairs	11 0	3 15
Clematis	15 0	5 0
Calceolarias	1 0	0 8
Coleus	3 0	1 1
Carpet Bedding Plants	1 6	0 10
Daisies, various colours	1 0	0 5
Fuchsias	3 0	1 0
Geraniums, Tricolor	3 6	1 5
„ Bicolor	3 6	1 5
„ Zonal and Nosegay, in sorts for pots	3 0	1 1
„ autumn struck, for bedding, out of pots	2 0	0 15
Heliotropes	2 6	0 18
Iris germanica	3 0	1 0
Lobelias	1*s.* to 2 0	6*s.* to 12
Succulents	6 0	
Greenhouse plants	12*s.* to 18 0	
Stove plants, 12*s.* to	18 0	
Tree Carnations	12 0	
Echeveria secunda glauca	2 0	12 0
Delphiniums, seedlings, blooming last year	3 6	
Spiræa japonica, ditto	9 0	
Rock plants	0 .. 1 0	

	Per doz. *s. d.*	P. 100. *£ s.*
Pansy Mrs. Felton, the best white	3 0	18 0
„ Clevedon, Purple and C. Blue	2 0	12 0
Viola, Golden Perpetual, the best yellow	2 0	12 0
Pelargoniums, 6*s.* to	9 0	
Herbaceous plants	3 0	1 0
Pelargonium Queen Victoria	18 0	
Pansies, show	3 6	1 5
„ bedding	2 0	0 15
Pinks	3 6	1 5
Paonies	12 0	4 10
Pentstemons	3 6	1 5
Pyrethrums	10 0	
Salvias	3 0	1 1
Sedums	3 0	1 1
Saxifrages	3 0	1 1
Violas	1 6	0 10
Violets	2 6	0 18
Roses in Pots, H P.'s	12 0	4 10
Hardy Climbing plants, in pots	12 0	
Dactylis elegantissima	1 0	4 6
Begonias	4 0	
Achimenes	2 6	
Dracæna terminalis and Cooperi	18 0	
Caladiums	15 0	
Epiphyllums	12 0	
Phloxes	3 6	1 5
Sempervivums for edging	2 0	0 12
Double Sweet Williams	3 0	1 0

SEAKALE for Forcing, fine, 60*s.* per 1000; very fine for Planting, 30*s.* per 1000. Dwarf ROSES, fine, 20*s.* per 100. For cash only with orders.
RICHARD LOCKE, Alexandra Nurseries, Redhill, Surrey.

The Best Lawn Mixture.

JAMES DICKSON & SONS' FINEST LAWN MIXTURE, for Forming New or Renovating Old Lawns, is VERY SUPERIOR to all others.
108, EASTGATE STREET, CHESTER.

LAWSON'S PASTURE GRASSES for all Soils and Situations, separately or in mixtures, according to the Original Tables, for which see Catalogues.
The LAWSON SEED AND NURSERY CO. (LIMITED), Edinburgh and London; City Branch, 54, Bishopsgate Street Within, E.C.

Cheap Bedding Geraniums.

ALFRED FRYER offers the following good Bedders at per dozen, for cash:—Golden Tricolors: Prince of Wales, 6*s.* 6*d.*; Jock o' Hazeldean, 4*s.* 6*d.*; Mrs. Pollock, 3*s.* 6*d.*: Sir Robert Napier, 3*s.* 6*d.*; Sophie Dumaresque, 3*s.* 6*d.* Silver Tricolors: Lass o' Gowrie, 6*s.* 6*d.*; Miss Burdett Coutts, 3*s.* 6*d.*; Mrs. John Clutton, 3*s.* 6*d.* Gold and Bronze: Beauty of Calderdale, 3*s.* 6*d.*; Roi de Siam, 3*s.* 6*d.* Ivy-leaf: L'Elegante, 3*s.* 6*d.*; Dolly Yarden, 3*s.* 6*d.*; 01 one of each for 5*s.* All post or package free. For Priced Lists address ALFRED FRYER, The Nurseries, Chatteris, Cambridgeshire.

SEEDS—EXTRA QUALITY.

CYCLAMEN PERSICUM MONSTROSA PLENA, 2*s.* 6*d.* and 5*s.* per packet.
CYCLAMEN PERSICUM, choice quality, single-flowered, 1*s.* and 2*s.* 6*d.* per packet.
PRIMULA SINENSIS FIMBRIATA, 2*s.* 6*d.* & 5*s.* per pkt.
,, ,, FLORE PLENA, 2*s.* 6*d.* and 5*s.* per packet.
CINERARIA and CALCEOLARIA, 2*s.* 6*d* and 5*s.* per pkt.
E. G. HENDERSON AND SON, Wellington Nursery, London, N.W.

Seed Potatos.

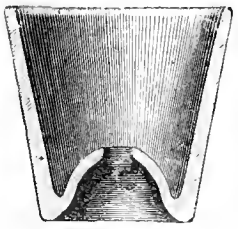
H. AND F. SHARPE have still on hand the following varieties of SEED POTATOS, which they offer at reasonable prices:—

Myatt's Prolific Kidney,	Walker's Improved Regents,
Alma Kidney,	Yorkshire Regents,
Rivers' Royal Ashleaf Kidney,	Fluke Kidney,
American Early Rose,	Paterson's King of the Flukes,
Early Climax,	Alpha,
Paterson's Victoria,	Eureka.
Model,	

Seed Growing Establishment, Wisbech.

NEW PATENT.

THE "SUTTON" RESERVOIR FLOWER POT.



Messrs. Wheeler Brothers,
STEAM POTTERY WORKS, READING,
Are now prepared to receive applications for Licenses from Potters desirous of making and selling the above in various parts of the United Kingdom.

Opinion of Shirley Hibberd, Esq.,
Editor of the *Gardeners' Magazine*, Author of "Rustic Adornments," &c.

"Amongst the many attempts made to improve the common Flower Pot this alone, as far as my experience goes, is worthy of general adoption."

BEDDING PLANTS, &c.

LITTLE & BALLANTYNE,
THE QUEEN'S SEEDSMEN,
CARLISLE,
SOLICIT EARLY ORDERS FOR
DAHLIAS, HOLLYHOCKS, LOBELIAS, VERBENAS, FUCHSIAS, PELARGONIUMS, PANSIES,
AND
An extensive Assortment of Plants suitable for Beds and Borders,
INCLUDING THE
Best Varieties of Dwarf Variegated Plants and Succulents for Edgings, &c.

KNOWEFIELD NURSERIES, CARLISLE.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.
Mr. WEBB, Calcot, Reading.

At a Great Reduction on the Usual Prices.

GREEN HOLLY, 1 to 3 feet, suitable for hedges; ENGLISH YEW, 1 to 5 feet; GREEN TREE BOX, 3 to 4 feet; PORTUGAL and COMMON LAUREL, 1 to 4 feet, and other Evergreens. Special prices on application to
CHRISTIE AND CO., Nurseries, Leatherhead, Surrey.

POTATO—BELL AND THORPE'S MODEL. Fine seed of this first-class Potato, true, 5*s.* per bushel.
Mr. W. BARNARD, High Street, Epsom.

For the Farm or Garden.

CABBAGE PLANTS, superior Bedfordshire-grown:—Enfield Market, at 4*s.* per 1000; Drumhead, 4*s.* per 1000. Early Longpod BEANS, at 8*s.* 6*d.* per bushel; common Windsors, at 16*s.* per bushel; fine new English Scarlet Runner Beans, at 20*s.* per bushel. Forcing and Planting ASPARAGUS PLANTS, at 2*s.* 6*d.* to 7*s.* 6*d.* per 100. Double Scarlet DAISIES, at 2*s.* 6*d.* per 100; splendid large Crown Daisies, 5*s* per 100. Splendid new flowering PYRETHRUMS, at 4*s.* per dozen. Beautiful Blue DELPHINIUMS, at 4*s.* per dozen. Terms, cash with orders. SEED POTATOS, and all other Seeds of best quality, at lowest prices.
CATALOGUES, &c., on application to
FREDERICK GEE, Seed Grower, &c., Biggleswade, Beds.

TO POTATO PLANTERS.

CHANGE OF SEED.

JAMES CARTER & CO.

ARE PREPARED TO SUPPLY THE FOLLOWING POPULAR AND CHOICE VARIETIES AT GREATLY REDUCED RATES PER HALF-TON OR TON.

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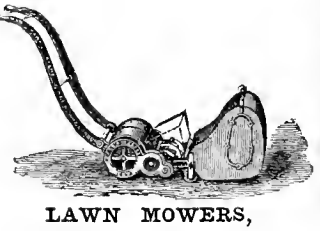

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For 1876.

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Will let out in May next the following new and distinct varieties, raised by Mr. Laxton (the raiser of Jewel, Emily Laxton, Guiding Star, and others), all of which are striking novelties, having the dwarf habit of the single Zonals :—

THE GHOST.—Flower pure ivory-white, finely formed, petals waxy and of great substance—a decided acquisition in double whites, and especially adapted for bouquets, 10*s*. 6*d*.

SOPHIA CLAPTON.—The plant has the remarkably dwarf and shrubby habit and pale green foliage of "Guiding Star." Flower very full, pretty Hepatica shaped, bright purplish scarlet, 10*s*. 6*d*.

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The set for £1 12s 6d. Trade terms as usual.

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THE KNAP HILL CYPRESS,

Cupressus Lawsoniana erecta viridis.

ANTHONY WATERER

Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices :—

3 feet high, 2½ feet in circumference, 30*s*. per doz.
4 feet high, 3 to 4 feet do., 42*s*. to 60*s*. per doz.
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6 and 7 feet high, 6 to 7 and 8 ft. do., 21*s*. to 31*s*. 6*d*. each.

No cuttings have been taken from the plants here referred to, which are simply perfect in growth and splendidly rooted.

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For Vegetables all the Year Round, order their 21*s*. *Collection, the largest and best ever offered.*

Address : 59, QUEEN VICTORIA STREET, E.C.

HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,
KNAP HILL NURSERY, WOKING, SURREY

NEW PLANTS FOR 1876.

B. S. WILLIAMS

BEGS TO CALL ATTENTION TO

THE FOLLOWING LIST OF NEW PLANTS,

WHICH WILL BE SENT OUT THE FIRST WEEK IN MAY.

They have all been selected with the greatest care, and will be found equal to the descriptions given, and cannot fail to give satisfaction.

AMARYLLIS MENDELII.

The flowers of this variety are of extraordinary size, being about 9 inches across, and the petals 3 inches in width, and of great substance. The colour is bright orange-scarlet shaded with crimson, the centre pale sulphur colour, leading off to the centre of each petal.

Price 63*s*. *each.*

ARAUCARIA GOLDIEANA.

A very handsome species, intermediate between A. elegans and A. Rulei, but superior to both, having the majestic growth of the latter and the distinct leaf of the former. The leaves are produced in whorls, and are pendulous, dark green in colour, varying in size according to the age of the plant. This will form a beautiful object both for the decoration of the conservatory and dinner-table. *Price* 21*s*. *to* 42*s*. *each.*

BEGONIA "MAGENTA QUEEN."

A garden hybrid of rather dense habit of growth. The flowers are large, and produced in great profusion, of a rich magenta colour. This variety will prove a grand acquisition both for decorative and exhibition purposes. *Price* 10*s*. 6*d*. *each.*

BEGONIA METALLICA.

A pretty addition to this large group of ornamental foliage plants. Leaves oblique angulate ; veins of a dark metallic colour ; ground colour light metallic, shining green ; under-side light green veined with bright red ; flowers produced in bunches of a pretty pink colour.

Price 10*s*. 6*d*. *each.*

BEGONIA "ROYALTY."

A garden hybrid of the bulbous section, of intermediate growth ; of branching habit, producing an immense quantity of bright orange-scarlet flowers, 4 inches across. The flowers are of great substance, and retain their beauty for a long period. Received First-class Certificate, Floral Committee, Royal Horticultural Society, October 7, 1874.

Price 21*s*. *each.*

CAMELLIA "THOMAS MOORE."

This very fine Camellia flowered some few years ago amongst a batch of unnamed imported plants, and is undoubtedly the most perfect Camellia we have yet met with. The flowers are 4½ inches across, perfectly round and well imbricated ; the petals are also round, and well filled up in the centre ; the colour is rich carmine shaded with crimson.

Price 21*s*. *each.*

COPROSMA STOCKII.

This plant is of compact habit, and forms in time a dense and handsome shrub suitable either for the conservatory or sub-tropical garden. The leaves are medium sized, opposite, obovate, beautifully varieghted in the centre with various shades of green and pale yellow, the dark green on the margin of the leaf forming a striking contrast to the pale centre. It has proved to be far hardier than C. Baueriana variegata.

Price 10*s*. 6*d*. *to* 21*s*. *each.*

DRACÆNA HIBBERDII.

A very handsome and graceful species, the result of a cross between D. magnifica and D. excelsa ; it partakes, however, more after the habit and colour of D. excelsa. Leaves 18 to 24 inches long and about 3 inches wide ; ground colour reddish green, beautifully marked with a deep rose colour, which, as the plant increases in size, becomes suffused over the entire leaf. This species will form a pretty object for the dinner-table as well as for general decorative purposes.

Price 21*s*. *to* 42*s*. *each.*

GLOXINIAS (NEW).

E. S. W. has much pleasure in offering the six following Gloxinias, believing they are far in advance of anything previously sent out both as regards flowers and growth. The flowers are much larger and of greater substance, and the colours well-defined ; the growth is much stronger and more vigorous—a feature much wanted to resist the blight which often attacks Gesneraceous plants :— E. *signifies* Erect flowers ; D. *signifies* Drooping flowers.

AVALANCHE (E.).—The flower of this splendid pure white variety is 3½ inches across, of great substance, a most profuse bloomer, and will last a long time in perfection ; the most charming variety yet produced. Price 10*s*. 6*d*.

CROWN PRINCE (E.).—Flower 3 inches across ; mouth and throat crimson-lake, and carmine lobes, a broad margin of white ; a very bold well-formed flower for exhibition. Price 10*s*. 6*d*.

CROWN PRINCESS (E.).—This is the most distinct Gloxinia we have met with ; the flowers are about 3 inches across ; the throat white, with a circle of crimson-lake, and carmine mouth, with a very broad margin of white. Price 10*s*. 6*d*.

FASCINATION (E.).—Flowers 3 inches across ; lobes round, the centre light mauve and magenta, shading to light blue and white, a broad margin of white ; extra fine. Price 10*s*. 6*d*.

MASTERPIECE (D.).—Flowers about 3 inches across ; with large and well-proportioned lobes, beautifully round, and a rich crimson-lake ; mouth rich purple and violet shaded, and spotted throat. Price 10*s*. 6*d*.

MAUVE QUEEN (D.).—Flowers 3½ inches across ; the lobes mauve and magenta, round, and of great substance ; the mouth deep mauve, with a slightly spotted throat. Price 10*s*. 6*d*.

MIKANIA PULVERULENTA.

A pretty free growing climber for the intermediate house, or for covering the walls of ferneries, stoves, &c., having dark green velvety foliage.

Price 10*s*. 6*d*. *each.*

NIPHOBOLUS HETERACHIS (Moore).

This elegant Fern, which is well adapted for basket culture, is a native of India, at a considerable elevation, and is an ally of the well-known Niphobolus Lingua (another excellent and effective basket Fern), from which it differs in its usual shorter and more ovate fronds, not tapered, but more or less rounded at the base, and in the upper surface being covered with a thin felt of starry pubescence, which is densely laid over the stipes and under-surface of the frond. It has a thin fast-creeping caudex clothed with spreading brown scales, ovate-oblong fronds, broad and rounded at the base, and tapered into a tail-like acuminate point, the fronds having a greyish or somewhat mealy appearance, from the presence of the white stellate down of vraious forms.

Price 21*s*. *each.*

POLYPODIUM DIANÆ (Moore).

A noble greenhouse Fern from Diana's Peak in St. Helena, where it grows from 3 to 5 feet in height. The plant has a thickish creeping caudex, from which the fronds spring up at rather close intervals. The stipe is stout, and thickly furnished with tortuous brown scales ; the leafy portion of the frond is ovate acuminate, or almost triangular-ovate, downy beneath, pinnatifid below, pinnatifid above ; the pinnules oblong lanceolate falbate with a squarish base, and above that cut into oblong segments, all connected by the narrow wing of the rachis. The substance of the fronds is herbaceous or firmly membranaceous, and the plant is altogether a fine, well-marked, and effective Fern where there is space for its development.

Price 21*s*. *to* 42*s*. *each.*

ZAMIA CRASSIFOLIA.

A very distinct and dense growing species ; leaves about 2 feet long, pinnate ; petioles covered with a dense tomentum of a silvery hue ; pinnæ 2 to 2½ inches long, sharp pointed, closely set. This plant will succeed well in a greenhouse.

Price 105*s*. *to* 210*s*. *each.*

VICTORIA AND PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N.

NOVELTIES FOR 1876.

JAMES VEITCH & SONS

BEG TO ANNOUNCE THAT THEY ARE NOW SENDING OUT

THE UNDERMENTIONED SPLENDID NOVELTIES.

ACALYPHA MACROPHYLLA.

A plant from the South Sea Islands, belonging to the order Euphorbiaceæ, with foliage showing a great variety of tints.

Its stem and branches are furnished at short but regular intervals with exstipulate leaves, having hairy petioles from 6 to 8 inches long, from which the leaf expands into a bold and broad blade of the obcordate acuminate form, serrate, and prominently veined. The leaves attain a length of from 12 to 15 inches, with a breadth of from 10 to 12 inches.

The colouring and markings of the leaves are exceedingly varied, tints of red, yellow, pink, brown, and green, may all be found upon one plant. The colouring is most developed in the older leaves; in some blotches of red or yellowish red are scattered over the whole leaf, in others a portion sharply marked off by the prominent veins is coloured; in others again the two preceding characters are combined. The general outline of the plant is bolder, and the colour more varied than in A. tricolor. Exhibited at the International Exhibition at Cologne in August, 1875.

Price 10*s.* 6*d. each. A few extra-sized plants*, 21*s. each.*

ADIANTUM PRINCEPS.

This splendid Fern, one of the finest of the Maidenhairs, introduced by us from New Grenada through M. Gustav Wallis, was figured in the *Gardeners Chronicle* of August 14, 1875, and described by Mr. Moore in these terms:—

"Not only does this Fern possess a degree of boldness of character on account of the size of the fronds and pinnules, but the plants are also remarkably graceful from their fulness of development, and the arching or pendent position they assume. The fronds are broadest at the base, the lower pinnæ being about a foot in length, with the lower pinnules bipinnate, so that the frond itself becomes quadripinnate. The pinnules are large, the upper corner obliquely overlying the rachis; the basal margin is entire and slightly concave, the inner side, or that turned towards the rachis being also entire; while the somewhat rounded anterior margin and truncate apex are cut into broadish shallow lobes, and are generally fertile throughout, but where sterile are minutely serrulate. The terminal pinnule is larger than the rest, sharply cuneate at the base, and spreading out into a fan-shaped figure, that at the top of the frond being fully 1½ inch across."

It is one of the finest of all exhibition Ferns. It was awarded a First-class Certificate by the Royal Horticultural Society, August 4, 1875. It was much admired when exhibited at the International Exhibition at Cologne, August, 1875, and at Edinburgh in September.

Price 21*s. each.*

ARALIA ELEGANTISSIMA.

A beautiful stove plant, introduced by us from the South Sea Islands, with a straight erect stem, furnished at short intervals with digitate leaves on long foot-stalks mottled with white on a dark green ground; the leaflets, from seven to ten in number, are filiform, deeply and unequally serrated, and gracefully pendulous. The colour of the foliage is a deep green shaded with brown; the midrib of each leaflet is of greenish white, and very distinct. A foliage plant of the first order. We consider this splendid plant a decided improvement on the beautiful Aralia Veitchii sent out by us. *Price* 42*s. to* 105*s. each.*

BEGONIA "ACME."

A hybrid of the tuberous-rooted section of Begonias, of robust habit, with medium-sized foliage; the leaves are irregularly serrate, and less acuminate than in most of this class of hybrids. The flowers are of a delicate orange-pink, tinged with a deeper shade of salmon-rose. In well grown plants the flowers are large, the male or staminate ones being of from 3 to 4 inches between the extremities of the alternate narrower petals: the petals of both staminate and pistillate flowers are beautifully veined symmetrically with the edges.

Price 10*s.* 6*d. each.*

BEGONIA "KALLISTA."

Another fine robust hybrid of the same class as the preceding. The foliage of this plant is more uniform than in most other hybrids; they are very oblique, deeply serrate, acuminate, and dark green in colour. The flowers are medium-sized, of a rich vermilion-scarlet, the deepest in colour yet obtained. This variety is very floriferous, and is an improvement on the well-known B. Stella.

Price 10*s.* 6*d. each.*

CISSUS ENDRESII.

A beautiful stove climber, from Costa Rica, collected for us by the late M. Endres, with whose memory we have associated it.

It is more vigorous than the well-known C. discolor, and larger in all its parts. Its fine large cordate-obovate and acuminate leaves are from 7 to 8 inches long, with a breadth of 6 inches; the midrib veins and connecting veinlets are prominent, and of a reddish colour; the upper surface of the leaf has a rich velvety appearance, coloured with the brightest green, a deeper shade adjoining the midrib and veins; the under-surface a reddish brown, the red predominating in the midrib and veins. The newest formed part of the stem, and the youngest leaves and tendrils are strongly tinged with crimson. The robust growth of this Cissus, combined with its ample foliage, renders it particularly adapted for covering large spaces or tall columns in a warm conservatory, and where a bold and massive foliage is required.

Price 10*s.* 6*d. each.*

DIPLADENIA HYBRIDA.

A vigorous growing plant, with bold foliage. It is very floriferous, the flowers having some resemblance both in colour and form to D. insignis, but are produced in much greater abundance. It is a very useful addition to our stove climbers.

Price 10*s.* 6*d. each.*

CROTON LORD CAIRNS.

This Croton is more dwarf in habit than C. Disraeli. Like that fine variety it has trilobate leaves, the middle lobe being considerably elongated, and with a broader expansion towards the point; the lateral lobes are unequally developed in the same leaf, and in different leaves.

The colour of the foliage is a bright but deep green, the midribs of the leaves a light yellow, the blades blotched and spotted with the same colour, the spots and blotches being irregularly scattered over the surface, and sometimes clustered towards the point of the leaf.

Price 10*s.* 6*d. each.*

CROTON DISRAELI.

The most distinct addition of late years to this popular class of foliage plants.

It possesses a new feature of great interest in the trilobate form of its leaves, the middle lobe being greatly elongated, with a broader expansion near the extremity; the two lateral ones comparatively short, of unequal size and length, and expanding from the midrib at about one-third of its length from the base.

The colouring of the foliage is rich and varied. In the new leaves the midrib and margin are of a light yellow, with the light green blade blotched and marked with the same colour; as the foliage becomes older the yellow subsides to a bright orange-yellow, the marginal line becoming more defined and the markings enlarged; in the mature leaves the margin is a bright scarlet, and the midrib is striped by a band of the same bright colour between two lines of a deep golden-yellow, and the blotchings and markings a rich orange-yellow upon a deep green ground. It is a vigorous growing variety, of compact habit, and well-furnished with foliage.

It is figured in the *Gardeners' Chronicle* of October 2, 1875, and described as "A most remarkable plant, and peculiarly distinct. Gardeners generally will find the plant a welcome addition to their decorative stoves, and exhibitors will meet in it with a new subject with which to display their cultural skill."

First-class Certificate, Royal Horticultural Society, April 7, 1875; Certificate of Merit, Royal Botanic Gardens, April 28, 1875. Exhibited at Cologne, August, 1875; also at Birmingham, Edinburgh, &c. *Price* 42*s. each. Large plants*, 84*s. each.*

Sizes and prices of specimens on application.

CROTON APPENDICULATUS.

An interesting and very distinct kind, dwarf in growth, much branched and dense in habit, and clothed with abundance of deep green foliage.

The leaves of this plant have a very marked peculiarity; the blade or lamina is divided into two segments separated by a considerable interval; the segment next the petiole or base of the leaf is tolerably constant as to form, but the terminal one assumes an indefinite variety of shape, often of a most opposite character, both on the same and different plants. Thus we find well-defined ovate, obovate, rotundate, oblanceolate forms, and even peltate and reniform, and an indefinite modification of them. So far as yet known, this Croton is an extreme instance of the leaf changes manifested in the genus. In colour the foliage is uniform. It received a Certificate of Merit from the Royal Botanic Society, April 28, 1875.

Price 10*s.* 6*d. each.*

CROTON MOOREANUS.

A free-growing variety, of noble habit and aspect.

The colour and markings of the mature foliage are rich and distinct. The midrib and margin of the leaf are of a clear orange-yellow, with the blade crossed with parallel bands and stripes of the same colour upon a deep green ground; these bands and markings show considerable regularity, and form a distinguishing feature in this variety. The whole plant has a bold and striking appearance, and is a fine addition to our foliage plants for exhibition and for the stove.

Price 21*s. each.*

CROTON PICTURATUS.

A new Croton, with long narrow leaves of drooping habit and variable outline; some showing the peculiarity of the blade divided into segments, as in C. appendiculatus, but much less diversified, and having the terminal one coloured and smaller than the others; some are hastate at the base, others again show dilations or rudimentary additional lobes at the side of the leaf.

The midrib is yellow, the blade spotted and marked with the same colour on a bright green ground. *Price* 21*s. each.*

DRACÆNA ALBO-VIRENS.

A light-coloured variety, of graceful habit, with medium-sized recurved leaves.

The colour of the foliage is varied, the ground colour being a bright green; the leaves have a double margin of light crimson and creamy white, which is continued along the upper edges of the petiole to the stem. In some leaves the creamy white markings are more developed, in others the light crimson or pink is the most conspicuous.

Price 10*s.* 6*d. each. Extra sized plants, showing colour*, 63*s.*

DRACÆNA ELEGANTISSIMA.

A dark-coloured variety, with narrow gracefully recurved leaves, and of dense habit.

The leaves are of a deep bronze with a metallic lustre, and very distinctly margined with bright crimson, in the young leaves crimson of a lighter shade entirely predominates, the bright colouring giving the plant a glowing and attractive aspect.

It is one of the best of the narrow-leaved Dracænas. It received a Certificate of Merit from the Royal Botanic Society, April 28, 1875, and a First-class Certificate from the Royal Horticultural Society, August 4, 1875. Exhibited at the Cologne International Exhibition in August, 1875.

Price 21*s. each. Extra sized*, 42*s. each.*

DRACÆNA TAYLORI.

A hybrid raised at our nursery, having for its parents D. magnifica and D. Mooreana, and in every respect superior to both.

In the breadth and depth of its fine leaves it follows the former, but they are larger, more undulated, and more effective; in the colour of the petioles and of the younger growth it follows the latter, with the colour heightened. It is a very handsome Dracæna, of dense and robust habit, with noble foliage deeply coloured, the surface having a decided metallic lustre, with a tinge of crimson; the petioles of the leaves have a light but rich crimson hue.

"The most massive and noble of all the Dracænas."—*The Garden*, August 7, 1875.

Certificate of Merit, Royal Botanic Gardens, June 16, 1875; First-class Certificate, Royal Horticultural Society, August 4, 1875. Exhibited at the Cologne International Exhibition, August, 1875; also at Birmingham, Edinburgh, &c.

Price 31*s. 6d. each. Extra sized plants*, 63*s. and* 105*s.*

VEITCH & SONS' NOVELTIES FOR 1876—*(Continued).*

POINSETTIA PULCHERRIMA PLENISSIMA.

The merit of the discovery of this wonderful plant is due to M. Benedict Roezl, who met with it in Mexico. It is unquestionably the greatest acquisition in winter flowering plants ever introduced. Its gorgeous bracts, reproduced in profusion from the repeated branchings of the flowering stem, form a massive head of brilliant colour unsurpassed by any flowering plant in cultivation. The Horticultural Press has been unanimous in awarding it the highest possible praise. It has been figured in the *Gardeners' Chronicle* (January 1), in the *Floral Magazine* (February), and in the *Garden* of March 25 of the present year; the two last are coloured illustrations of the highest merit. It has been described and commented on in all the principal gardening periodicals, and eminent horticulturists have sent us testimonials speaking of it in terms of the most unqualified approbation. It seems, therefore, to us quite unnecessary to give any remarks of our own; but from the ample descriptions already published we submit the following extracts:—

In the *Gardeners' Chronicle* of January 1, 1876, Mr. Moore, in his description accompanying the figure, says:—"The plant is of vigorous habit, with bold foliage, which has the margin very prominently angulate-lobed, a feature which may be traced in the ordinary form, but is much more strongly pronounced in the double variety, so much so that, making slight allowance for the position whence the cutting was obtained, even the young stock plants can be singled out by this peculiarity. As in the ordinary form of Poinsettia, the stem terminates in a corymbose-cymose inflorescence, this being surrounded by large lanceolate or spathulate lanceolate and brilliant-coloured floral leaves or bracts, which are attenuated towards the base, and form a setting for the heads of inconspicuous flowers."

The *Journal of Horticulture*, of December 16, 1875, announcing the flowering of this plant in Europe for the first time, remarks that "The examples which we have seen of this plant are remarkable alike for the size of the heads, their form, the distinct character of the bracts, and their marvellous brilliancy of colour. In the old type, the plant is surmounted by a single cluster of small yellow flowers, from the base of which the bracts radiate in a horizontal manner. In the new form, the central or primary cyme, which is surrounded by splendid bracts, is, as it were, the root of other flowers which spring from it on short simple stems, each surmounted by flowers and bracts; and these secondary heads become further subdivided, and forming also perfect flowers and bracts, the head in fact culminating in a multiplication of parts, each perfect and of extraordinary brilliancy. The head which we particularly noticed was 16 inches in diameter, and from the base to the apex of the cone of drooping bracts was 11 inches in depth. The bracts on this head were fifty in number, arranged on seven separate cymes, which had sprung from the primary base. The colour is superlatively brilliant, as if a delicate tinge of orange floated over the intense scarlet, imparting a more dazzling appearance than is possessed by the old species. If the designation 'a cone of fire' is applicable to any plant in existence, this is the one."

Descriptions not less glowing were published in the *Garden*, the *Gardeners' Magazine*, and the *Gardener*.

Price 21*s. each.*

NEPHROLEPIS DAVALLIOIDES FURCANS.

A beautiful and distinct crested variety of the Java Fern, Nephrolepis davallioides.

It is a noble Fern, of robust growth, sending forth as from a central tuft numerous arching fronds from 3 to 4 feet long; and both in habit and general appearance is a great improvement on the normal form. From this it differs in several striking particulars; very obvious among these is the furcation of the pinnæ. In the sterile pinnæ—which are few in number—at the base of the frond, the furcation is rudimentary; the fertile pinnæ are furcated, and the furcation is twice, and even thrice repeated in the extremities of the first division, becoming more complex towards the point of the frond.

The somewhat coarse serration of the pinnæ of the species is replaced in the variety by a crenate edge, far more pleasing in outline. It received a Certificate of Merit from the Royal Botanic Society, June 10, 1874, and a First-class Certificate from the Royal Horticultural Society, September 17, 1873. Exhibited at the International Exhibition at Cologne, August, 1875.

Price 10*s. 6d. each. Young specimens,* 42*s.*

SELAGINELLA JAPONICA.

A very pretty and exceedingly useful addition to our Lycopods, for greenhouse or fernery of medium temperature. It is caudescent, the incipient stem rising to about an inch or an inch and a half, then producing a profusion of circinate frondose branchlets, rather rigid in texture, which become horizontal as they lengthen, and are furnished with numerous lateral offshoots, the whole forming a good-sized spreading plant, with a regular but not formal outline. The colour of the plant is a rather deep green, quite distinct from any other Selaginella. It received a Certificate of Merit from the Royal Botanic Society, July 10, 1872.

Price 7*s. 6d. each.*

WAHLENBERGIA TUBEROSA.

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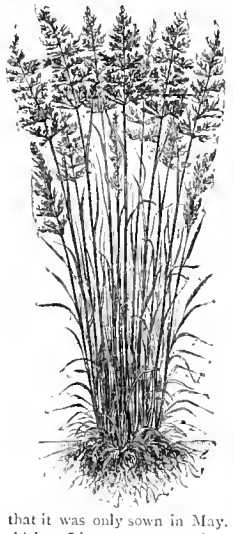

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SATURDAY, APRIL 22, 1876.

THE ALMOND.

THE Almond, like the Pomegranate, is one of the very earliest trees mentioned in ancient literature. The history of the tree is bound up with that of the original annals of mankind; we have a reference to the produce in the beautiful old narrative in Genesis xliii. 11, the events related in which took place considerably over 3000 years ago.

The native country of this charming tree, though the region has been pretty well ascertained, cannot be pointed out quite as precisely as one would wish. De Candolle thinks that the area may have extended from Persia westwards to Asia Minor and Syria. Like many other trees of South-Western Asia, it certainly became diffused along the shores of the Mediterranean at a very early period. It was well known in Greece in the time of Theophrastus, B.C. 350, this author making copious mention of it, and thence probably it would be that the tree was conveyed to Italy. M. Porcius Cato, 150 B.C., and Columella, in the reign of Claudius, refer to the nuts under the names of Avellana græca and Nux græca, Cato remarking that the taste is acrid, which would seem to imply that the variety he was alone acquainted with was the bitter one. At the present day the Almond occurs in hedges everywhere in Greece, Anatolia, Barbary, &c., not to mention Palestine, Turkestan, Mesopotamia, Kurdistan, and other localities probably primæval. In Egypt it did not grow in the very olden times, or, at all events, it was rare, as indicated by Jacob's sending Almonds as part of his present to Pharaoh's Prime Minister—a proceeding which seems to indicate, collaterally, that it was a tree which in Canaan was always prosperous, flourishing and bearing fruit even in seasons when the cereals failed. In England the Almond is believed to have been cultivated since the days of the later Plantagenets, the original plants coming from Barbary, but nothing can be stated positively. Our climate is ill-adapted to its success as an orchard tree. Hence, although encouraged everywhere for the sake of its lovely vernal bloom, our market supply of the produce is derived from warmer latitudes. The so-called Jordan Almonds come, not as the name would seem to indicate, from Palestine, but from Malaga.

How beautiful is the spectacle of an Almond tree in the opening spring! Pliny speaks of it with the delight at once of a naturalist and a poet in heart. So does every old writer upon the amenities of living Nature. In England no herald of the season is more welcome, for though in the hedgerows we have the Hazel, the cheerful golden and silver-grey Sallows, the knotted Elm, and the Poplar, ruddy and glorious in its topmost branches; and though in the garden we have the fragrant Mezereon, the Cornelian Cherry, and the Forsythia, all bringing to mind those sweet little souls who come into bloom, smiling and sparkling, while barely twelve years old, the leaves to make their appearance by-and-by; still it is the Almond, every branch decked with tender pink, that seems before all others to constitute spring. In part this comes, no doubt, of the bloom answering more perfectly than that of the Sallows, &c., to our accustomed ideas of

flowers, as opposed to simple catkins. There is something also in the profusion and in the delicacy of the hue, so intrinsically its own; and, along with everything else, there is the pleasant under-current of remembrance that potentially it is likewise a fruit-tree. It is just the same in Palestine, where the flowers open in January, the tree, while in bloom, constituting a harbinger of the "time of the singing of birds," when "the voice of the turtle is heard in the land, and the Vines, with the tender Grape, give a good smell."

This early blooming is manifestly the clue to the meaning of those Scriptural allusions to the Almond, in which it appears as a poetical image or which associate it with some spiritual fact. Essentially, the Almond stands in Scripture as the emblem of promptitude, thence of leadership and supremacy. In Numbers xvii., for example, preparations are made for the appointment of a chief priest. Moses lays rods or wands in the tabernacle of the witness, one apiece for the princes or heads of the ruling families from whom the selection is to be made by Divine showing; and on the morrow Aaron's rod, though long cut from the tree, is found to have "budded, and brought forth buds, and bloomed blossoms, and yielded Almonds." The miracle confirms the priesthood for ever in the family of Aaron and his sons. In Jeremiah i., 11, 12, the Almond is introduced in the account of one of those wonderful lessons which, under the ancient theocracy, were communicated by Jehovah in the shape of visions, and which were, in the very nature of things, symbolical. While the prophet is under the Divine instruction he is asked, "What seest thou? And I said, I see a rod of an Almond tree. Then said the Lord unto me, Thou hast well seen, for I will hasten my word to perform it." The Hebrew name employed for the Almond in these two passages is *shâkêd* or *shôkêd*. Almonds (the ripe nuts) are *shâkêdim*. The word is particularly interesting, being derived from a root which signifies to be wakeful, and which, in a congenerous offset, is employed in the verse which says that, "Unless the Lord keep the city the watchman waketh in vain." Vigilance, promptitude like that of the Almond, it is intended to say, avail nothing in default of heavenly aid.

In Eccles. xii. 5, one of the accompaniments of old age is denoted by the phrase "the Almond tree shall flourish." Ordinarily this is believed to refer to the blanching of the hair when people grow old. The flowers of the Almond tree do certainly, in individuals, sometimes exchange their accustomed roseate for nearly white; but if the figure is to carry any significance, they are required to be always purely and unmistakably white, and for the popular interpretation to be the true one there must be the further consistency in the hair of all people turning white in old age, whereas it is only an occasional phenomenon, and at the same time is one not unfrequent in people who have not even reached their meridian. The figure, rightly regarded, makes no reference whatever to loss of colour in the hair. That which it refers to is man's new life. Death is the completion of a given period of our existence. It is every bit as much a beginning as an ending. The new phase of life which commences upon the close of the first is spring once again, and it is the approach of this, when men grow old, that is so beautifully declared in the statement that the Almond tree, the herald of spring, "shall flourish."

Almonds were employed as models for some part of the ornamentation of the golden seven-armed candelabrum which Moses was commanded to make for the Tabernacle (Exod. xxv., xxxvii.) Some idea of the general form of this magnificent work of art is obtained from the representation of it upon the Arch of Titus at Rome, whither it was carried, with other spoils, after the destruction of Jerusalem, but in what precise way the Almond ornament was introduced does not appear. Of course there is no direct connection between the two things, but it is interesting to observe that the pieces of rock-crystal which are employed for the ornamentation of the candelabra of modern times are called, in our own day, by the same name, or "Almonds."

In addition to the name of *shâkêd* the Almond had with the Hebrews that of *luz*, still current in Arabic. It is mentioned under this appellation in Gen. xxx. 37, the authorised version mistakenly giving "hazel." Remembering the poetical and figurative tendency of the Oriental languages, it is easy to understand how duplicate names should exist for objects so striking. *Luz* perhaps, was the original term, and *shâkêd*, or the early riser, a poetical synonym, just as in England to-day we have, in addition to Hawthorn and Meadow-Cardamine, May and Cuckoo-flower, May-flower also, Sweet Vernal Grass, Pasque-flower, Farewell Summer, and many another, the names superadded by the heart and loving fancy, whence all things that have comeliness and immortality receive their life.

The self-same suddenness of the bursting into floral beauty of the Almond which in Scripture gives it place as an emblem of promptitude, is recognised also in the position it holds in mythology. Phyllis, Queen of Thrace, hospitably entertains Demophoön while on his way home from the Trojan war. Love soon follows of course, and then comes the old, old story. Called away to his duties to his own people, the prince takes his departure with many promises to come back, sincere no doubt, but difficult to keep. During his absence, Phyllis writes to him one of the most exquisitely tender epistles existing in any language, ancient or modern. Word is brought to her, untruly, that Demophoön is unfaithful, and she dies of grief, the gods in pity changing her into an Almond tree. The prince returns, now for the first time to hear what has happened. He embraces the tree, which, still warmed by woman's affection, shoots forth instantaneously the abounding sweetness of its bloom. Call it only a silly fable if you will—Phyllis has loved and died a thousand times, in every age and country, and the wanderer, on his return, has never failed to find the poet's Almond tree awaiting him.

The history of the Almond tree carries with it the rise of the Peach, which latter is probably only a sport from the primitive type, immensely improved by cultivation. Believing this fruit and its variety, the Nectarine, to be a distinct and absolute species, Linnæus gave it the name of Amygdalus persica. But the distinctness of the two plants has long been doubted, and the tendency of modern observation is quite in favour of their being developments from a single original. The idea was first broached by Mr. T. A. Knight, in the Horticultural Society's *Transactions* for 1822. It is needless to say that in our own day it has the support of Mr. Darwin.*

Of course, in instituting the comparison, the Peach is not to be thought of from the garden wall, where, arbitrarily trained and pruned, its natural habit is effaced; but from the orchard, or when grown as a standard, its natural condition, as in the great Peach orchards of the United States, those likewise of China, and of the eastern slopes of the Andes, then it is perceived that the trees correspond in dimensions and physiognomy; the long, lanceolate, acuminate, and serrate leaves are alike; and in both trees they are deciduous. The flowers agree in structure; they open at the same period of the year, varying only in the unimportant particular of colour, the Peach assuming the deeper hues. The fruits differ only in the amount of sarcocarp or intermediate fleshy layer, which in the Almond is scanty, in the Peach excessive—a difference greater than that between the wild and cultivated Cherry. Much more stress might be laid, were there occasion, upon the circumstance of the ripe Almond opening down one side, so as to liberate the stone, while the Peach remains permanently indehiscent, presenting only a groove. The structure and qualities of the seeds or kernels are again alike. In problems like this of course we cannot look for positive proof. We cannot expect to see the changes go on before our own eyes. The test of the probability of such changes having taken place is found in multitudes of analogous occurrences, in the history not only of fruits, but of plant and flower-forms. Look, for instance, at the diversity in the fronds of the Hart's-tongue Fern. If the fact be obvious in one instance it is but reasonable to suppose that there is some underlying principle in Nature which induces similar variations elsewhere, since, as far as science can judge, Nature acts by uniform laws. In the particular case of the Almond and Peach it is needful only to assume that the change commenced at a period sufficiently early to give time for the establishment of the new condition before any cultivator thought of asking questions as to the pedigree. The Peach has been carried all over the temperate world, and gives pleasure wherever it thrives. When will there will be a Legion of Honour, constituted of those who have diffused what is good and excellent? "Why," says Humboldt, "have not everywhere the names been preserved of those who, in place of ravaging the earth, have enriched it with plants useful to the human race?" *Leo Grindon.*

* *Animals and Plants Under Domestication*, i. 337.

A SYNOPSIS OF THE KNOWN SPECIES OF IRIS.—I.

The genus Iris has always been a great favourite with cultivators. Many of the species are extremely beautiful, and nowhere amongst the hardy petaloid monocotyledons can we obtain such variety in colouring and habit and such a continuous show of bright-coloured flowers with so little expenditure of money and trouble. As a synopsis suitable for the use of cultivators is greatly needed at the present time, I propose in this paper to classify the known species under their groups, to describe them in English, and to give references to the figures which are scattered so copiously through the *Botanical Magazine* and other gardening periodicals. Nearly all the known species have been figured, though unfortunately here, as in the case of the Lilies, the octavo size of the periodicals is not large enough to do them full justice, but it is to be hoped, that now that the taste for them has revived, that some one will undertake to do for Iris what Mr. Burbidge has done for Narcissus, and what Mr. Elwes is doing for the Lilies.

Literature of the Genus.—Although Iridaceæ as a natural order have been, considering their beauty, botanical interest and popularity with cultivators, wonderfully neglected by botanical monographers, the literature of the genus Iris is very extensive. Leaving out of count the pre-Linnean writers (and an account of what was done in the genus before the time of Linnæus would form by itself the material for a very interesting article), and leaving out also Floras that relate to special countries, the following are the principal general works which the student of Irises requires to consult. In the first edition of the *Species Plantarum* of Linnæus, published in 1753, eighteen species are characterised. In the second edition, bearing date eleven years later, there are twenty-two. In Thunberg's *Dissertatio*, published in 1782, about twenty extra-European species are added, and the number is raised to forty-five, but Thunberg, in his circumscription of the genus, includes not only what we call Iris now, but also Morœa, Vieusseuxia, and the American Lansbergia. Still using the term in the same wide acceptation as Thunberg, Willdenow gives fifty-four species of Iris in the first volume of *Species Plantarum* in 1797, Persoon sixty-five species in the first volume of his *Synopsis Plantarum* in 1805, and Roemer and Schultes ninety-

two species in the first volume of their *Systema Vegetabilium* in 1817. There are also excellent monographs by Lamarck in the third volume of the *Encyclopédie* in 1789, and by Vahl in the second volume of his *Enumeratio* in 1806. Gawler in the first volume of the *Annals of Botany* of König and Sims took out of Iris the mass of Cape species placed there by Thunberg and placed them under Moræa, a genus first named by Miller, which was kept up by Linnæus, but in which Thunberg had placed a different set of plants. Gawler (who afterwards took the name of Ker) was the principal authority in England on the genus for the first quarter of the present century, and although he never wrote a complete monograph of Iris, he figured and described a great many of the species in the *Botanical Magazine*, gave an enumeration of all the known species under tab. 986, and still later a full list, with full synonymy, both pre-Linnean and post-Linnean, which occupies twenty-five pages of his *Genera Iridacearum*, published at Brussels in 1827. Of modern monographs of the genus there are two, the first by Spach, which is printed in three different places—in the fifth volume (beginning at p. 89) of the third series of the *Annales des Sciences Naturelles*, in the first volume (p. 816) of Walper's *Annales*, and in the thirteenth volume of Spach's *Végétaux Phanerogames* (p. 12); and the second by Dr. Klatt, of Hamburg, in the thirty-fourth volume of the *Linnæa*, and revised as regards classification in the *Botanische Zeitung* for 1872. I wrote a paper on the group with a bulbous root-stock (Xiphion) in the ninth volume of *Seemann's Journal*, 1871, p. 10.

As the genus stretches in the Old World from Britain and Scandinavia to the Canaries, Abyssinia, the Himalayas, Japan, and South China, and in the New World from the arctic circle to California and the Southern United States, it enters more or less into all the innumerable local floras of the Northern hemisphere. Of these the book that contains an account of the largest number of species is Ledebour's *Flora Rossica*.

Circumscription of the Genus.—As I have just said, Thunberg and the monographers that wrote in the early part of the century gave the genus Iris a far wider extension than we do at the present time. It is very difficult to settle where the bounds of the genus should be placed. There is, in point of fact, no well-defined line of limit between the plants that Thunberg included, if we leave out the American Lansbergia (Iris martinicensis, Linn.). All of them have distinctly dissimilar outer and inner perianth-segments, and petaloid stigmas with a deep bifid crest, opposite to and overwrapping so as to hide the anthers. The following are the principal subdivisions into which Iris, in a Thunbergian sense, has been separated, with their leading characters and geographical range :—

I. *Iris.*—Root-stock a rhizome. Tube above the ovary absent or present. Inner segments of the perianth erect, outer reflexed. Filaments always quite free. Confined to the northern hemisphere.

II. *Xiphion.*—Root-stock a tunicated bulb. Tube above the ovary absent or present. Outer segments of the perianth just as Iris, the inner either erect or, in the section Juno, spreading horizontally. Filaments free, or in section Gynandriris, loosely connate with the style. Mediterranean region, Orient and Abyssinia.

III. *Dietes.*—Root-stock a rhizome. Tube above the ovary none. Inner segments of the perianth less different from the outer ones than in Iris, and spreading with them falcately. Stamens free. Cape, one species United States, and one Australian.

IV. *Moræa.*—Root-stock a tunicated corm or bulb. Tube above the ovary none. Flowers more fugitive than in Iris, the inner segments generally spreading falcately with the outer ones. Filaments usually joined in the lower part, sometimes entirely free. Many species. All plants of the Cape.

V. *Helixyra.*—Exactly Moræa, except that there is a long tube between the ovary and perianth-segments. One species. Cape.

VI. *Vieusseuxia.*—The Peacock Irises of the Cape. Root-stock a tunicated bulb; tube above the ovary none; inner segments of perianth minute, erect, usually with a distinct claw and three distinct cusps; flowers fugitive; filaments united up to the very top. Six or eight species, all Cape.

If Iris be divided at all I think these are the most satisfactory subordinate genera. Both in Liliaceæ and Iridaceæ it is a great help to the memory to be able to marshal the genera into a bulbous and non-bulbous series, and if we use this subdivision, Iris and Dietes go into the second, and Xiphion, Moræa, Helixyra, and Vieusseuxia represent them amongst the bulbs; but, as I have already indicated, there is really no clearly defined line of limit in floral structure between the six. But many recent authors go still further in the way of subdivision. Iris, as above characterised, answers to four of the genera of Dr. Klatt's monograph—Oncocyclus, Neubeckia, Hermodactylus, and Iris; and Xiphion to three—Xiphion, Coresanthe, and Gynandriris. In this present paper I intend to use Iris and Xiphion in the sense indicated above, and to confine my synopsis to these two, of which the species now known are not far short of a hundred.

Sub-genera of Xiphion and Iris.—The following are the groups or sub-genera, very unequal in size, under which I intend to arrange the species :—

Genus Xiphion of Tournefort and Miller.

Section 1. *Euxiphion.*—Inner segments of the perianth erect, nearly as long as the outer; filaments free. Examples—X. vulgare, X. latifolium, X. reticulatum.

Section 2. *Gynandriris.*—Inner segments of the perianth erect, nearly as long as the outer; filaments loosely joined to one another and the style. Example—X. Sisyrinchium.

Section 3. *Juno.*—Inner segments of perianth minute, spreading horizontally between the claws of the outer ones. Examples—X. persicum, X. caucasicum.

Genus Iris of Tournefort and Linnæus.

Section 1. *Hermodactylus.*—Outer segments of the perianth, or, as Miller calls them, "falls," neither bearded nor crested; root-stock a digitate tuber. Example—I. tuberosa.

Section 2. *Apogon.*—Falls neither bearded nor crested. Examples—I. Pseud-Acorus, I. lævigata, I. sibirica.

Section 3. *Oncocyclus.*—Falls hairy on the surface but not regularly bearded. Examples—I. susiana, I. iberica.

Section 4. *Pogoniris.*—Falls bearded down the claw. Examples—I. pumila, I. florentina, I. germanica.

Section 5. *Evansia.*—Falls crested down the claw. Examples—I. cristata, I. japonica, I. tectorum.

Section 6. *Hexapogon.*—Outer and inner segments of the perianth both bearded down the claw. Examples—I. filifolia, I. falcifolia.

In distinguishing the groups and species the following are the principal points to which attention should be directed :—

Root stock.—The difference between a rhizome and tunicated bulb furnishes the most tangible difference between Xiphion and Iris, as here understood. In Xiphion, as in Crocus, the nature of the tunics, whether membranous or fibrous, furnishes a good mark of distinction. Compare, for instance, in this respect X. reticulatum with X. vulgare. In Iris only I. tuberosa stands out from the rest by its digitate tuberous root-stock.

Leaves.—There are three principal types of leaf—the narrow tetragonal type, shown in Iris tuberosa and Xiphion reticulatum; the linear type, shown in Iris sibirica and prismatica; and the sword-shaped or ensiform type, as shown in Iris Pseud-Acorus and germanica.

Stems.—A small set of species have no leaves to the stem, but the great mass are furnished with leaves on the stem, like those of the basal rosette reduced below the spathe-valves. Iris pumila and a few others never produce more than a single flower from a stem, but the great majority of the species have a forked corymbose inflorescence and two or many flowers.

Spathe-valves.—The spathe-valves are always at least two-valved, and greatly altered in shape and texture from the original foliar type. Their shape and texture furnish often good specific characters.

Flower.—It is in the perianth that the main distinctive characters of the different kinds are to be found. In the structure of the ovary all the kinds are substantially alike. The absence or presence of a tube above the ovary, and its length, and the proportion it bears to the segments, is a point to be carefully noticed. The segments are always six in number, in two rows of three each. The outer three are always reflexed when the flower expands, in shape obovate, with a distinct claw, and nearly always larger than the three inner ones. The best differential character in the genera is furnished by the way in which these three outer segments are decorated down the claw and the keel of the lower part of the face. Sometimes, as in Iris tectorum and cristata, they have a distinct petaloid crest; sometimes, as in Iris germanica and florentina, a keel of dense hairs, which is called in the descriptions a beard; sometimes, as in Iris Pseud-Acorus and spuria, neither crest nor beard. Miller calls the three outer reflexing segments of the perianth "falls," and the three inner ones, which, in all the plants with which we are concerned, except the section Juno of Xiphion, stand straight up in the fully-expanded flower, "standards;" and, although these terms have been little used by later writers, they are so convenient and expressive that I should like to revive them again, and intend to use them in my descriptions. Mr. Barr at my suggestion has used them in this sense for the last two or three years in his catalogues.

Stigmas and Stamens.—It is not necessary for me to take up space here by describing the peculiar structure of the stigma, but I often find that gardeners who have a fair knowledge of botany do not understand the organography of an Iris flower—which parts are floral wrappers and which reproductive organs. I need scarcely say that any one who wants to understand these plants ought to begin at the very outset by getting clear ideas upon this head. The very special form of the stigma is uniform through both Xiphion and Iris, though there is considerable modification in the size and shape of its two crests.

Ovary and Fruit.—The capsules often furnish good specific marks by size and shape, and this set of characters has been greatly overlooked. A set of drawings of Iris capsules [and seeds] made from fresh specimens would be a useful contribution to our knowledge of the genus. *J. G. Baker.*

REPORT ON RED AND WHITE CURRANTS FRUITED AT CHISWICK, 1875.

There is, perhaps, no class of fruits in ordinary cultivation in this country in which so much confusion exists in regard to their nomenclature or their distinctive merits as in that of Currants. Names exist in plentiful variety, but the fruits of all the kinds are very similar, so that it has been impossible to distinguish them. The varieties may vary to some extent as to the size of the bunches, berries, their colour, cropping qualities, &c.; but as these are considerably affected by cultivation, situation, &c., their comparative and distinctive merits can only be ascertained when all the varieties are grown together under the same conditions, as in the present instance.

The collection, consisting of forty-five reputed distinct varieties, was got together from various quarters, and represents most of the names to be met with in English nurseries and a few of the French. Altogether there exist about sixty distinct names as applied to the Red Currants and about fifteen to the White, so that the remainder have to be collected and described.

The classification is based chiefly on the appearance of the plants, their foliage, habit of growth, &c. This is very decided, distinct, and easily to be recognised. The typical names adopted may not in every instance be correct, but the varieties given as synonyms are all identical the one with the other as they have been received by the Society. There is no means of distinguishing any of the varieties by their fruit alone.

Reds.

1. *Red Dutch* [syns., Fertile, Fertile d'Angleterre, Fertile de Palluau, Fertile de Bertin, La Hâtive, Hâtive de Bertin, Bertin No. 9, Belle de St. Gilles, Chenonceaux, Grosse Rouge de Boulogne, Queen Victoria, Red Grape]—This is one of the best varieties in cultivation. A most abundant bearer, and ripening early. The bunches are long and the berries large, full, and juicy, of a bright red colour. The plant is of a dwarf and somewhat slender habit of growth, never attaining a large size. The leaves broad and flat, deep green, having a sort of metallic glaucous hue, which renders it in appearance quite distinct. The synonyms here given are all referable to this one variety, and which is the one generally grown and known in this country as the Red Dutch.

2. *Knight's Large Red* [syns., Knight's Sweet Red, Goliath, Fielder's Red, Palmer's Late Red, Pitmaston Red, Pitmaston Prolific, Large Sweet Red, Bertin No. 1, Dancer's Selected].—This variety is not quite so early as the Red Dutch. It is a most abundant bearer. The bunches are long, and produced in immense clusters. Berries of medium size, of a bright red colour. The plant is of strong and

vigorous growth, the shoots growing mostly erect. Leaves pale green, rather small, somewhat deeply cut and crumpled in appearance. This variety is the one in most general cultivation in the market gardens around London, having probably been selected for its fine vigorous constitution. Messrs. Krelage, of Haarlem, sent fruiting branches of this variety as the true Red Dutch Currant as grown in Holland.

3. *Old Red* [syn., Rouge Commune].—This greatly resembles the preceding. The plant is of most robust growth, but a poor cropper, and with small berries. It is most probably the original stock from which Knight's Large Red, the present common variety, has been selected.

4. *Red Cherry* [syn., La Versaillaise] —The berries of this variety are very large and handsome, almost like small Cherries; but they are produced very sparingly, the bunches frequently consisting of only one berry, and from twenty to thirty berries on a plant. The plant is of a gross spreading habit of growth. The shoots pale, very gross. Leaves very large, broad, deep green. It is unsuited for cultivation in the open ground, as the shoots, from their gross nature, break off so easily, that no plant is formed. The buds do not break freely after pruning. Grown against a wall it is more satisfactory.

5. *Houghton Seedling* [syns., Houghton Castle, Orangefield].—This is a late variety, the berries of medium size, deep red, and rather acid. Bunches long, produced in very thick clusters. A most abundant cropper. The plant is of a very robust, close-growing, sturdy, stubby habit, very rarely producing long shoots. The leaves are small, deep dark green, somewhat deeply cut and crumpled in appearance. Very distinct. This variety, from its close compact habit of growth and sturdy constitution, is very suitable for growing in exposed situations, and for training as an espalier or pyramid.

6. *Gondouin* [syns., Raby Castle, May's Victoria, Imperiale Rouge, d'Hollande à grappes longues].—This is a remarkably strong-growing late variety. The bunches are very long. Berries large or above medium, of a bright red colour with a sharp acidity. As a bearer it is only medium. The plant is of a most robust growth, soon forming large bushes. Shoots strong, reddish. Leaves large, dark green, with reddish veinings, flat, deeply cut, very showy, and very distinct. The flowers have also a reddish tinge. This is one of the latest Currants to ripen and hang well on the plants afterwards. The plant, from its strong vigorous growth, is very suitable for growing as a standard or large bush.

7. *Verrières Rouge.*—This appears to be a compact dwarf-growing form of the Gondouin.

8. *Mallow-leaved* [syn., New Sweet Red].—This is a strong-growing late variety. Bunches long. Berries small, of a pale red colour. Late in ripening, and a somewhat poor cropper. The plant is of very distinct appearance, strong, tall-growing, with pale shoots. Leaves large, flat, soft, downy like a Mallow, of a pale green colour, something like the Black Currant.

9. *Lace-leaved* [syns., Large Sweet Red, Large Red, d'Hollande a feuille bordée].—A fine, compact-growing, bushy variety. Bunches of a medium size. Berries medium, of a pale red colour. A most abundant bearer. Shoots dark, spreading. Leaves dark green with a glaucous hue, and the greater portion, more especially those in the shade, having a narrow silver lacing or border, giving the plants a slightly variegated appearance. A very excellent good-habited variety.

10. *Cut-leaved* [syns., Feuille laciniée, Eyatts Nova].—Plant of somewhat slender spreading growth. Bunches of medium size. Berries small, of a pale red. A very poor cropper. Leaves small, deeply cut or laciniated and pointed, rendering it very distinct in appearance.

11. *Variegated* [syn., Feuille panachée].—This is a variegated-leaved form of the common Red. A poor cropper. The leaves are prettily variegated on their appearance in spring, but soon become dull and dingy.

12. *Strip.-fruited.*—This in appearance resembles the common Red. Berries small, pale in colour, with one or two darker stripes, rather pretty. A very poor cropper. The Gloire des Sablons is stated to be a White variety, prettily striped with red. At Chiswick it proved the same as Gondouin.

13. *Champagne* [syn., Couleur de Chair].—This is remarkable on account of the colour of the berries, which are pale flesh, and their sweet flavour being exactly similar to the White varieties. Bunches short. Berries small. The plant is of dwarf bushy habit and robust. Leaves broad, flat, having the appearance of the Red Dutch. It is an abundant bearer. A desirable variety.

Whites.

14. *Common White* [syn., Blanche Commune].—Plant of dwarf bushy habit. Leaves small, deeply cut and crumpled in their appearance. Bunches small; berries small.

15. *Wilmot's Large White* [syn., Blanche d'Angleterre].—Plant of free somewhat erect growth. Leaves large, flat. Bunch of medium size. Berries large, white. A good cropper.

16. *White Dutch* [syn., Blanche d'Hollande].—Plant, leaves, &c., of exactly the same appearance as the Red Dutch—dwarf, compact, bushy. Bunches large; berries large or very large, of a yellowish-white colour, very fine, juicy, and sweet. A great cropper. *A. F. Barron.*

A HARDY PROTEAD.*

The subjoined letter will be of interest to many who are interested in hardy shrubs. We have, for instance, in Grevillea rosmarinifolia—well-known as a greenhouse plant—a shrub which is evergreen, perfectly hardy, in a not very favoured site in Kent, either as to soil or climate :—

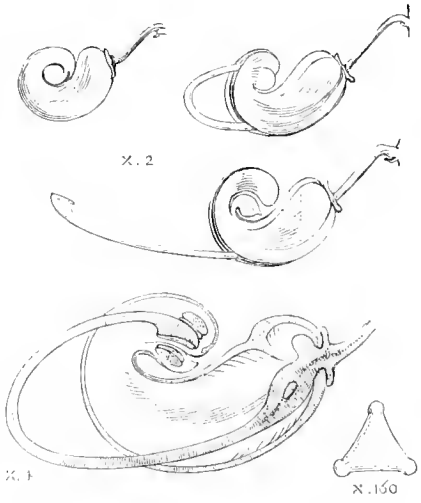

Fig. 93.—Details of the flower and pollen of Grevillea rosmarinifolia, enlarged.

"In the garden of Mr. T. B. Stow, which is situated in the highest and most exposed part of the town of Tonbridge, I have just found a fine bush of this plant, which he turned out of a pot in the autumn of 1872. It is planted on a bank of stiff clay, raised about 2 feet above the level of the lawn. At the back of the bank there is a screen of evergreen shrubs, which protects the plant from northerly and easterly winds, but it is fully exposed to the south and west. About 40 feet distant there is a fine Oak tree, from the foliage of which during the summer the plant would be in shade, as nearly as I could guess, from 11 until 1 o'clock. The stem at the base is nearly an inch thick. The habit of the plant is that of a low spreading bush; it is fully 5 feet wide, and would probably have been as thick as it is wide, but for the evergreens behind it. Its height is about 2 feet. Shoots made last year at the ends of the branches are from 12 to 15 inches long, and most of these have immature racemes of bloom on them. Frost has slightly touched these more exposed inflorescences, but there is a profusion of open and opening flowers on the shorter growths, nearer to the stem of the plant, where the dense foliage has protected the blossoms from any ill effects of this long-continued winter. One of the characters which pervades all the genera in the natural order Proteaceæ (to which this plant belongs), is the possession by each flower of only one style. On this plant, however, very many of the blossoms have two styles, and in some I have found a rudimentary third style. Where two styles occur the difference in the form of their stigmata is remarkable; the normal form of the vertical stigmatic disk is circular, with a very slight rise to a central green point; but the second style has a spathulate stigma without any central elevation. The anthers have no filaments, but are contained in cavities, one at the apex of each of the four sepals. The styles burst through the side of the calyx, forcing apart and curving out between two of the sepals, while the stigmata are still firmly held by the apices of the sepals (which contain the anthers) until some of the pollen grains have adhered to the stigmatic surfaces; and it would seem impossible to invent a more effectual method of insuring self-fertilisation. When this has been accomplished, the stigmata are released, and the styles spring from a curved into an erect position. The colour of the styles is so decided that it contributes materially towards the colour-effect of the inflorescence, which, though small, is visible a long way off. *Paxton's* and the *Cottage Gardeners' Dictionaries* both rightly describe the flower as red, whereas in *Loudon's Encyclopædia* it is called lilac. The latter work gives the time of flowering from May till August, while the other two books mention June. If this be true of the species when grown in a greenhouse—and on this point perhaps Mr. Baines or some other "hard-wooded greenhouse" correspondent will kindly give his opinion—it is very extraordinary that this plant, after growing out-of-doors in heavy clay for three and a-half years, should be in bloom all through March, and it seems likely to continue in blossom up to May, and this after an unusually long winter, in a spring which is a month later than the average. Exposure usually retards flowering; can it have made it nine months later? By Mr. Stow's permission, I am enabled to send you branches showing the health of the plant, the length of its shoots, and the freedom with which it flowers, and also to send you a sample of the soil, which, as you will see, is very unlike the orthodox compost of peat, loam, silver sand, and charcoal. It is mentioned in the *Cottage Gardeners' Dictionary* that both Grevillea rosmarinifolia and G. acuminata 'have stood out in sheltered places, with little or no protection.' Probably Mr. Mongredien doubted this when he stated in his *Hardy Trees and Shrubs*, and again in his list of the Heatherside Nurseries, that Lomatia longifolia is the only Australian proteaceous plant which is hardy in England. [Embothrium coccineum is hardy in the south-west.] But now that another has proved equal to the vicissitudes of our fickle climate, it may be worth while to experiment upon some other New Holland plants, and see whether there may not be several more greenhouse shrubs which can be added to the contents of our sheltered shrubberies, and which will there blossom as freely as the Indian Azaleas, and the subject of this notice. *W. T. T.*"

[We may supplement the remarks of our correspondent by giving a few additional particulars as to the structure of the flower. The receptacle, as shown in fig. 93, is dilated into a flat plate beneath the flower, much as in Eschscholtzia. The perianth, as in many Proteaceæ, is so contrived that its four tips remain in juxtaposition for a long while, and confine the style and keep it in close proximity to the anthers. The interior of the perianth is lined with hairs, pointing downwards towards the honey-secreting glands at the base. Although at first sight, as stated by our correspondent, the retention of the style in juxtaposition with the anthers would favour the supposition that the pistil was fertilised by the pollen from the same flower, yet the fact that the stigma is not ripe (though, it is true, dusted over with pollen) till after it escapes from the flower, together with the position of the insect-guiding hairs before alluded to, and the honey, all go to show that the plant in its native country is adapted to insect fertilisation. The pollen is triangular, like that of a Fuchsia. It is singular that in some Proteaceæ the pollen is elliptical and smooth, in others triangular. This, again, is doubtless connected with the adaptation of the flower to wind- or insect-fertilisation, as the case may be.

As to the double carpel, an examination of the normal flower of this and many other Proteaceæ shows a scale at the base of the ovary, and in the present case this scale has developed itself into a second pistil. At right angles with the two carpels is a pair of small glands, which secrete honey, and which, no doubt, are also rudimentary carpels, so that were the floral symmetry complete there would be four carpels instead of only one; the carpels would then correspond, as they should do, in number with the other parts of the flower. Perhaps some early progenitor of Grevillea had four carpels, but as one was found more advantageous, uni-carpellary Grevilleas prevailed. Baillon, *Adansonia*, ii., p. 292, mentions a similar case in Lambertia formosa.

We may further add that the only portion of the flower injured by frost was the stigma, which was blackened. Eds.]

* Cunningham in App. to Field's *Geograph. Memoir on N. S. Wales*, p. 328; Sweet, *Flora Australasica*, 1827, t. 30; Loddiges' *Botanical Cabinet*, vol. xv., t. 1479.

NOTES ON GARDEN VEGETATION FOR MARCH, 1876.*

March, it may be said, was very rough, attended with much snow, rain, wind, and frequent frosts, which proved a great hindrance to the progress of vegetation and all out-of-door works. On twenty-one mornings the thermometer was at or below the freezing point, indicating collectively 98° ; the lowest markings being on the 13th, 16th, 17th, 19th, 20th, and 21st, indicating 23°, 25°, 24°, 25°, 23°, and 20°. The highest morning temperatures occurred on the 1st, 2d, 3d, 4th, 6th, and 30th, when 38°, 36°, 37°, 38°, 37°, and 38° were respectively indicated, all being under the morning temperatures for January. During March, 1875, the thermometer was ten times at or below the freezing point, indicating in all 45°. The following table shows the amount of frost that occurred during the months of March for the last thirteen years:—

March, 1864	.. ..	71	
,, 1865	.. ..	52	
,, 1866	.. ..	66	
,, 1867	.. ..	77	
,, 1868	.. ..	29	
,, 1869	.. ..	57	
,, 1870	.. ..	50	
March, 1871	.. ..	28	
,, 1872	.. ..	23	
,, 1873	.. ..	25	
,, 1874	.. ..	37	
,, 1875	.. ..	45	
,, 1876	.. ..	98	

Herbaceous plants this year are rather behind an average, and those which have flowered are far from being in a satisfactory condition, both February and March having been much against them. In the next column is a list of spring plants, the dates of which are annually reported.

In the rock garden seventy-four species were counted in flower on March 31. The most conspicuous were Iris reticulata, Scilla sibirica, S. bifolia, S. b. major, S. b. alba, Sisyrinchium grandiflorum album, Gagea lutea, Helleborus angustifolius, Hepatica angulosa, and all the varieties of Hepatica triloba, also the varieties of Saxifraga oppositifolia ; Aubrietia grandiflora, Primula vulgaris rubra, P. purpurea, P. denticulata, P. nivalis, and P. viscosa ; Draba aizoides, Dondia Epipactis, Andromeda floribunda, Erica hibernica spicata, E. herbacea alba, and Epigæa repens. Up to the end of March no perceptible difference was noticed in the arboreous vegetation. Perhaps the most remarkable feature observed was in the case of those coniferous plants which take on a brown hue during the late autumnal months, and remain in this condition during winter ; as the season advances they pass into green, and finally into the golden tint peculiar to them, and which they retain during the summer months. In my report up to January 31 it is there stated that, owing to the unusual mildness of that month, Thuja aurea, T. elegantissima and others, had parted with the brown winter hue, and were on January 31 perfectly green. Since that time the backward state of the weather, attended with a series of low temperatures, has been the means of partially bringing back the brown tint, but not to the extent observed during the early winter months, still a very perceptible brown hue is visible on each of them. It is now evident that many plants have suffered severely during this long and very changeable winter, particularly those species belonging to the natural orders Caryophyllaceæ and Cruciferæ.

	1876.	1875.
Scilla bifolia major	March 2	March 14
Arabis albida	March 5	Feb. 10
Tussilago alba	March 8	Feb. 15
Mandragora officinalis	March 12	Feb. 28
Iris reticulata	March 13	March 19
Symphytum caucasicum	March 15	March 31
Narcissus pumilus	March 15	March 13
Scilla bifolia alba	March 15	March 17
Tussilago nivea	March 18	March 6
Muscari botryoides	March 18	March 26
Corydalis solida	March 25	March 23
Symplocarpus fœtidus	March 25	March 30
Erythronium dens canis	March 28	March 21
Ribes sanguineum	March 30	March 30

It is somewhat remarkable that during the last three months we have had the thermometer on fifty-two mornings at or below the freezing point, indicating altogether 314°, and notwithstanding this low average, no ice at any one time has been seen at Edinburgh sufficiently strong for skating or curling purposes, nor yet have any of the frosts been sufficiently severe to reach the small vermin now in the ground, not even the slugs, which at the present time (March 31) are particularly numerous and destructive.

* Read by Mr. McNab at the April meeting of the Botanical Society of Edinburgh.

Fig. 94.—Grevillea rosmarinifolia.

Florists' Flowers.

Carnations and Picotees: *Personal Explanation.*—Permit me to beg your indulgence while I refer to a matter personal to myself.

Late last autumn and early in the present year it was my misfortune to be in controversy with a writer who adopts the *nom de plume* of "D., Deal," on the subject of dressing Carnations and Picotees. I entered upon that controversy in deference to the wish of brother florists who had elected me by acclamation to the honourable post of President of the National Carnation and Picotee Society, and I know from extensive correspondence that in that controversy I represented the views of every influential grower of the flowers ; and I am well assured that the views put forth by my anonymous antagonist represented himself only.

That controversy appeared in your columns, and that fact alone is sufficient assurance to all acquainted with your pages that it was free from all personal or offensive allusion. My surprise was, therefore, very great when I learnt that in the issue of the *Journal of Horticulture* for March 23 the same writer—"D., Deal"—in an article on Carnations and Picotees, which, commencing with his statement that "amongst the florists' flowers for which he had ever had a 'sneaking fondness' (the term is his own) are these fragrant and lovely, but at the same time very troublesome flowers," clearly showing him to be

hopelessly out of accord with every grower of them, went on to say, "Into the vexed question of dressing I do not intend to enter. I have had an unusual amount of abuse heaped upon me by Mr. Dodwell in a contemporary for some statements made by me last year in the *Journal*. I cannot say I admire his style of controversy, although it is a perfect matter of indifference to me how abusive any one is, for if, according to the Eastern proverb, 'Curses come home to roost,' language such as he has used will rather injure him than me."

On March 27, my absence from home having prevented my becoming earlier acquainted with this most wanton and unwarranted attack—for "D., of Deal," an anonymous writer, could have expressed his views without introducing my name—I wrote to the Editors of the *Journal*, relating a circumstance which made it especially offensive, commented upon the absence of harmony of "D., of Deal," with the growers of Carnations and Picotees, as exemplified in his opening paragraph, and asserting "D., of Deal," could not produce "a line or a word even" from my letters susceptible of a "personal or coarse construction."

To my great surprise my letter is not published, and a second letter, under date April 11, in which I appealed to the justice of these gentlemen to be allowed to vindicate myself from such a charge, remains also without notice.

I desire to be allowed to state this fact merely—comment, I am persuaded, is needless.

In my closing letter in the controversy in question I said, "I honour 'D.' for much good work he has done for florists." I alluded to his work as secretary of the Metropolitan Society of Florists, instituted and maintained, as I supposed, by him. But, to my great regret, I am told, and on authority I cannot question, that this Society has ceased to exist. I am compelled, therefore, to recall the expression above recited, and to believe, not only that I am hopelessly at issue with "D., of Deal," as to sound principles of cultivation, but also as to the mode of setting such principles forth.

Sincerely hoping I may not again have occasion to trespass upon your indulgence, I am, &c., *E. S. Dodwell*, 11, *Chatham Terrace, Larkhall Rise, Clapham, S.W., April* 17. [As both controversialists have before now intimated their intention to close this controversy, we trust they will carry out their intentions; at any rate we cannot give them any further opportunity. Eds.]

—— In these days, when double flowers find much favour, the claims of the fine old Double Yellow Auricula should not be overlooked. A quarter of a century ago it used to be grown largely in the neighbourhood of Manchester, and now it is difficult to be met with there, so largely has it died out of cultivation. It is again coming to the fore, borne there by the rising tide of favour which appears destined to float again into popularity many good old things that have become neglected. It has three great advantages: it is easily grown, it flowers with great freedom, and the blossoms, in addition to being of a fine golden hue, are fully double, and deliciously fragrant. Has its origin ever been declared?—for it is supposed to be a garden sport from Primula Auricula lutea, introduced from Switzerland two centuries ago. With it well deserves to be associated the fine double dark variety. The flowers, which are regularly double, are of a shaded plum colour, the petals closely arranged in the form of a rosette. It is not so floriferous as the double yellow form, or so showy, but it is yet handsome and interesting, and well deserves a place in a select collection of hardy Primulaceæ. When are we to see the new double white variety, which has been announced for distribution on the Continent? And is it indeed double, and pure white in colour? If it is as good as those in cultivation in this country, a valuable trio will then be at the service of cultivators.

—— There is much reason to believe that we have not nearly so far progressed in the matter of improving the Alpine Auricula as a florist's flower as some have supposed. True it is that Mr. Charles Turner and others have raised during the past six or seven years many splendid varieties, but it is worthy of notice that they are to a great extent repudiated by the Auricula cultivators and exhibitors of the North, and that on the ground that they are not true-shaded alpines, but self flowers of an intermediate character. The Northern growers have been charged with being too particular in the matter, but their ideal of a true alpine Auricula is one with a clear and permanent golden centre, and a dark ground or body colour, with a paler shading distinctly and regularly displayed, and they assert that there are very few flowers of this character to be met with. Thus it is that many of the superb varieties raised by Mr. C. Turner—superb in their brilliant colouring and high decorative value—and to which the Royal Horticultural Society have awarded First-class Certificates, have no chance on the exhibition-tables in the North. In the South we are less exact. It is only within the last year or two that alpine Auriculas with white centres have been admitted to competition in the North of England, and so much importance and greater value is attached to a fine, clear, smooth golden centre, that the flowers having white centres stood no chance with the former, and a class for white-centred flowers is now provided. A true white-centred alpine should be destitute of any white meal—a common fault with many. The presence of meal on the centre is looked upon as giving it the character of a bastard self Auricula. Another marked defect with some of the new flowers is that the golden centre changes to a white one, and not always the clearest; and a truss of flowers can show the older ones with pale centres, and the younger ones with golden centres. A true white-centred alpine should be white to the end, and a golden-centred alpine golden to the end. There is much to be advanced from the stand-point of the rigid requirements of the Northern fanciers; they have their ideal, and improvements must approximate as nearly as possible to it. They want exhibition flowers, and not merely those suited for decorative purposes. It is always noticeable at the annual exhibition of the National Auricula Society that, notwithstanding the scarcity of the fine edged and self staged varieties, they are yet much more numerously produced than the alpine flowers. Northern raisers are doing their utmost to improve the race of shaded flowers, and in the case of some of Mr. Turner's newer productions there is the promise of some beautiful shaded flowers, which, besides being of fine quality, have also the additional advantage of displaying new and attractive tints of colour.

—— We have received from Mr. B. S. Williams flowers of the new Camellia Thomas Moore, which was figured in the *Florist and Pomologist* in the course of last year. The blooms are even finer than those represented, the specimens before us being fully 5 inches in diameter, closely and evenly imbricated to the very centre with about twelve rows of petals, and of a pale carmine-crimson. The petals are solid and even, the outer ones fully 2 inches across, broadly obovate, and diminishing to the centre. The foliage is of a correspondingly bold and ample character. It is one of the finest new varieties we have met with for a long time.

The Villa Garden.

The Vinery.—This somewhat presumptuous title is employed to designate a greenhouse which is used both as a place for growing a few Grapes and cultivating a few plants. Such a house has come to be an appendage to many a Villa Garden, and though it is sometimes difficult to grow decent Grapes in a house filled with plants, it yet has, and can be done. In most cases the Vines are not pushed on into growth, but break at the regular time in the year, in April.

If one or more Vines are planted in the house the aim of the cultivator should be to have a good strong rod to each rafter between the lights, and be content with that. If plants are to do fairly well below the Vines, provision must be made for as much light as possible falling on them, else the plants will become much drawn and generally unhealthy. Sometimes the desire to have a crop of Grapes over-rides every other consideration, and useful plants are spoiled in consequence. We are treating of a house in which it is required to keep plants all the summer, or plants that may require house-room during that period. If all the plants in the house can be removed to the open air, and kept there all the summer, the chances of a crop of Grapes are rendered much more probable.

The Main Shoot or Leader.—If the Vine or Vines have been planted long enough to be well established, and capable of bearing a full crop of Grapes, the leader, as the leading shoot is termed, may be suffered to ascend the roof and reach the span of the roof of a span-roofed house, or the top of the back wall if it be a lean-to house, and there ramble unmolested for a few weeks, although it may crook and twist in this somewhat confined space. The reason for this is a simple, but sufficient one—the extension of the main leader is beneficial, as giving a greater impulse to the root than the side branches can do, because so much more vigorous in action. The time must come when the leading shoot will have to be stopped, and that will be when the lateral shoots have made growth and an abundance of foliage is thoroughly developed all over the tree.

The Side or Lateral Shoots.—The invariable rule with Vine cultivators is to stop the lateral shoots at the next joint beyond the fruit. In cases where it is necessary to cover with the growing shoots a good space of glass, after the first stopping, the shoots intended to fill such places are allowed to produce three or four shoots at a time without stopping. A neighbour of ours who grows good Grapes, and whose practice, therefore, is vindicated by the results, always allows the spray of his Vines to grow freely after the first stopping, and until the Vines are in full blossom; then regular but not close stopping is commenced, and continued until the stoning of the fruit is nearly complete, when, if it is still desirable to cover any further surface of roof, it is allowed to become clothed with foliage. We have endeavoured to set this forth in plain terms, and hope the details of the practice will be comprehended. We may further add that in the case of the practice just set forth, as soon as the fruit begins to change colour close stopping is followed up, and continued until the fruit is perfect, when the terminal points may be allowed to ramble, provided it is not later than the middle of August.

Cropping Vines.—Any caution given now as to this matter may be regarded as now looking a-head farther than is actually required; but it is a matter of some importance, and it is well it should be stated in this relation. Over-cropping is a common fault, and needs to be guarded against. But as Mr. William Thomson observes in his treatise on the *Cultivation of the Grape Vine*:—"It is impossible to lay down an exact rule as to the number or weight of bunches that ought to be left on Vines occupying a given area: so much depends on the vigour of the Vines, the state of the border, and the supplies of liquid manure that can with safety be given to the roots." As in the case of many of the houses these remarks are intended to apply to, stimulants of this kind are not given, and the Vines have to draw their sustenance, in many instances, from ordinary soil, they should be sparingly cropped. It is far better to have a few fair-sized and pretty well developed bunches than a larger number of indifferent quality. Mr. Thomson states that one bunch on every alternate lateral is a sufficient crop. This is what he prescribes for Vines in a high state of cultivation, and so, where the cultural process is of a more homely character, it might be necessary to reduce the crop even more. The cultivator should guard against exhausting his Vines just when they should be in the full vigour of their productive powers; and when this stage of exhaustion is reached it is difficult to get the Vines back to their original and full-producing power.

Garden Operations.

PLANT HOUSES.

Plant Stove.—Dipladenias.—Apart from the estimation these plants are held in by those who grow them for exhibition, there are no subjects that can occupy a place in the stove that are more deserving of general cultivation. Yet how seldom are they seen, or, if existent, it is rarely that they are met with in a condition that gives any idea of the effect produced by well-managed plants. Not only are they most effective as decorative subjects in the stove—where, if well-grown, they will flower from the beginning of May, and continue without intermission until the end of September, or even longer, were it not necessary to cut them back so as to prepare them for the ensuing year, but during these five months, there is not a day that a well-grown plant will not furnish flowers for vases or bouquets which in their colour, form, and texture harmonise with any other flowers. The principal cause of failure with them is their being treated as to water too much in the manner of the other occupants of the stove, whereas, as I have before urged, there are no plants in existence, not even the hardest-wooded Heaths, that require the soil being kept so dry as these Dipladenias. Even when in

full growth it should be allowed to get drier than other things would bear. As the season advances, and in common with other plants, they need more water, still they must be kept comparatively dry.

Tuberous Begonias that were started some time back should, as soon as they require it, be moved into their flowering pots. These need not be proportionately so large as wanted by many things, as they can be assisted by the use of manure-water—a 9 or 10-inch pot is big enough for a large bulb. There are few plants that have been introduced that are more generally useful for conservatory decoration than these, not only for their bearing without injury being stood much closer amongst other things than many plants, but from their continuous habit of flowering, and also for their suitability for using in a cut state.

Winter-flowering Gesneras ought now to be started. Each variety should be put separately in ordinary seed pans, in light sandy peat, to which has been added a good portion of leaf-mould. In a mixture of this kind they can be moved, when an inch or two of growth has been made, into their flowering pots without injuring the roots, which will occur if the soil is of a heavy nature. They may be grown either several in a 10 or 12-inch pot or singly in a 7 or 8-inch, in which latter way they look better than when several occupy one pot. In the growth of these fine winter decorative plants there is one thing essential—that is, they must be kept free from insects.

Cuttings of the different winter-flowering plants that were advised to be put in some weeks ago will now be struck and in condition for potting on, both such as were placed several together in pans as well as those that were put singly in small pots. In the cultivation of all plants of this description that are struck from cuttings annually, and have to be grown up to a flowering state in one season, the condition they will be in at the time of blooming will depend upon their being kept continually going from the time of their being placed in the cutting-pots, for if the roots are allowed to become matted, or the plants to suffer for want of timely shifting, no after management will give them the robust appearance they should have, or enable them to produce their full complement of flowers. This especially refers to Euphorbia jacquiniæflora, Justicia, Sericographis, Plumbago rosea, Eranthemum pulchellum, and others of a like character. As soon as these are well-rooted, at once move them into 4 or 5-inch pots, according to their requirements, using good fibrous soil, and as soon as they have got over the shift, and the roots have got fairly to work in the new material, they should be placed as close to the glass as they can be got. For this reason a light pit is better than an ordinary house, where there is more difficulty in getting them sufficiently near the roof. Give as much air as is consistent with keeping the requisite moisture in the atmosphere, and no more shade than is absolutely necessary. The principal thing to observe with the latter is never to allow it to remain on when the sun does not shine, or the plants are sure to become more or less drawn. Another important matter is not to attempt to grow more than the space at command will do justice to.

Poinsettias that have been kept dry after flowering should now be placed in a temperature to induce them to grow, cutting them back before putting them in heat. Where large, full-sized heads of their effective bracts are aimed at, they should be struck sufficiently early to get the plants up large and strong before autumn. The small dwarf plants that are preferred by some growers will not produce such heads as larger more fully-grown ones, but there is no reason why plants should not be prepared for each purpose. The white variety, although not so effective as the red, is, nevertheless, liked by some, and forms a contrast to the high-coloured kind. *T. Baines.*

Orchids.—One of the most singular in its manner of growth, and yet when managed successfully one that is exceedingly attractive, is the small-growing Burmese Phalænopsis Lowi. This plant almost invariably loses its leaves during the winter months, and when in that state but little water should be given; but now, with the return of a more congenial temperature, it will be exhibiting signs of renewed activity. It will be noticed with this species that it generally first pushes away some new roots from those of last year's growth, then the young dark-coloured leaves will start up from the crown, and as these get well advanced new roots will start away from the collar of the plant, and considerably assist in the development and maturing of the growth. The roots of this must be carefully watched, for at the best the quantity of roots that will be formed during the season is but small, so it becomes doubly necessary to guard against snails and woodlice, that would soon check and destroy them. This species is best grown in a pan or basket suspended from the roof in the East India-house; a small quantity of moss only should be used, and some charcoal or crocks placed in the basket among the moss, the roots evidently liking to cling to a hard substance. When growing it must be very frequently dipped, but care should be taken that no water is permitted to remain in the centre of the young leaves. By July or August, if sufficiently established, it will throw up one, and sometimes two spikes of bloom; the flowers generally appear on a single stem, but if the spike is very strong, it will form lateral shoots, and when two or three of these are formed, each bringing several of its showy blooms, the rich rose colour of the column make it an object at once interesting and desirable. P. Luddemanniana will now be pushing up its new spikes, and the flower-buds to the number of six or eight showing at the end; it also will throw out side flowering shoots from the old spikes, often two or three appearing on the spikes of the previous summer, and by this means a much greater number of flowers are produced than if it were only permitted to flower from the new spikes. The size and vigour of the plant must of course be taken into consideration, as to whether it is advisable to let the old spikes remain or no. When all the flowers are gone off, young plants will form at the tip of the spikes. These, as soon as they form a root, should be pegged down into small pots, and cut off as soon as they are strong enough and sufficiently rooted to support themselves, the spike still remaining on the old plant. This succeeds best in a pot, roots very freely, and requires plenty of water during the growing season, which, with good-sized flowering plants, will generally be found to commence about July, and continue growing later into the autumn than most of the others. Small plants that are not permitted to flower will start earlier, and cease growing sooner than the large plants. P. amabilis, grandiflora, and Schilleriana, must, as they come into growth, be well supplied with water at the roots, and occasionally sprinkled overhead lightly with a syringe. Care must be taken that the direct rays of the sun do not fall on them, and since they prefer a shady situation it will be useful in some cases to tack a piece of thin tiffany on the roof over where the plants are placed. The majority of the Zygopetalums will now be growing very freely, these will succeed best in the Cattleya-house, grown in pots, and well supplied with water; crinitum and Mackayi, about once a week should have some liquid manure given to them. Z. rostratum should be grown in the East India-house, and once established it grows and blooms very freely, the flowers lasting good for six weeks. Be very careful now with the blinds; run them down that nothing on blocks or in baskets may be scorched, and by free ventilation on all favourable opportunities keep up a sweet, light, free atmosphere in the different divisions. In the Odontoglossum-house fire-heat may be almost dispensed with, and air should be left on the bottom ventilators night and day. *W. Swan, Fullerofield.*

FRUIT HOUSES.

Orchard-houses.—In the past week the weather has been of the most wintry character, snow lying 2 inches deep on the morning of the 13th, and on the 15th 6° of frost were recorded here. Such weather must have been very trying to the orchard-house trees in bloom in unheated structures, unless some kind of protection was applied to the glass outside. Some hot sunny days have prevailed since, after the clear morning frosts, and been the means of making the atmosphere of the houses dry, and giving out latent heat from the back walls at night, so as to raise the temperature a little. As soon as the fruit is well set on the Apricots, Peaches, and Nectarines, syringing the trees daily must not be omitted, and whilst such weather and cutting N.E. winds last, the early shutting up of the houses will help to economise heat. The pots of Cherries, as soon as the trees are in flower, should be placed in the most airy part of the house, as the fruit sets badly where the ventilation is too confined. In the earliest forced houses the fruit of Peaches, Nectarines, and Apricots will soon be having their stoning period over, and when the second swelling commences, the trees will be benefited with some manure-water given once a week. Keep the red-spider in check with daily syringings in favourable weather, and should any aphis appear on the young shoots dress them with tobacco-water, or, what is more effectual, fumigate the house. Where the shoots have been stopped, laterals will be again appearing, which must be stopped again, before they get any length to shade the fruit too much. *William Tillery.*

Peaches and Nectarines.—An indication of the completion of the stoning process will be plainly apparent not only in the appearance of the fruit but likewise by its rapid progress in growth afterwards. Should any further thinning of fruit be deemed necessary it should be done now, and the quantity of it to be left on regulated according to the size and condition of the trees, bearing in mind that mediocre Peaches are usually very plentiful, which makes those of larger size more valuable and much more highly esteemed. In the case of trees which are very robust a heavy crop should be taken off these, which in some degree will abate that excessive vigour and probably prevent the necessity of having recourse to other means to render the trees more fruitful. Although it is indispensable at all periods to bestow careful attention on keeping the border where the roots exist in a healthy state, yet at no season is this matter of more importance than immediately preceding the ripening of the fruit, when a thoroughly moist condition about the roots is most essential. Inside borders are undoubtedly far preferable for early forcing operations than others. These will, however, require more attention in this respect, and where they are well drained very copious supplies of water should if necessary be applied now at a temperature of about 80°, mixing with it some stimulating agent in proportion to the requirements of the case. In regard to the ventilation at this period, a crack of air should be put on early in the day at the apex of the house, and a liberal circulation allowed through the house during sunny periods. We avoid the practice of entirely closing the house at from 80° to 90°, but let it gradually fall to about 70° before doing so altogether. Where Peaches are rapidly advancing towards maturity, employ rain-water only for syringing purposes; the incrustation resulting from other water in particular localities is such as will very much mar the fine appearance of Peaches when ripe. Keep the ordinary work in successional houses, as stopping, tying, disbudding, and thinning out the fruit, well under control; in the latter case, select the best placed fruits and those on the sunny side of the trellis. Syringe the trees copiously twice every day, unless very adverse weather exists, and ventilate abundantly under favourable circumstances. *Geo. Thos. Miles, Wycombe Abbey Gardens.*

Melons.—The earliest Melons, and particularly those in pots, will now be swelling off their fruit. Sometimes one takes the lead to the detriment of the others; when this is the case it should be removed, to allow of three or four of equal size swelling off together. These should be supported on small pieces of board, 4 to 6 inches square, with a wire passed through each corner to the trellis. Let the pots be top-dressed with a rich material similar to that recommended for exhausted Cucumbers, and water freely with tepid liquid manure to aid the rapid swelling of the fruit. It is not always advisable, at least where a crop of fruit is required, to allow successions to carry fruit on the first laterals, particularly if they are planted out in beds; the aim should be a well covered trellis, with plenty of female blossoms ready to open about the same time. These should be carefully fertilised, water having been for some time withheld from the roots, and if atmospheric and bottom heat can be increased, other conditions being satisfactory, success will be certain. It might be interesting to hear if advocates of the syringe have found hydropathic treatment favourable to the setting of Melons. *W. Coleman.*

HARDY FRUIT GARDEN.

It will be necessary now for the fruit trees on walls to have all the exposure possible on bright, mild days. The state of the previous weather, however, must be studied to some extent, as it would be bad policy to give free exposure after a week of dull, sunless weather. It may not be quite safe to remove the coverings altogether for another fortnight, but after that time every sort of obstruction to the free course of atmospherical influences should be removed. The disbudding of both Apricots and Peaches may now be entered upon more freely, but at the same time it is not good practice to remove too much at once—sufficient, that is, to cause a severe check on the flow of the sap. The attention, therefore, in the earlier stages of disbudding should be concentrated upon the absolute removal of all buds which will not be required to keep the trees furnished; but as the growth progresses disbudding will become assimilated with thinning the fruit, and will hence require considerably more care in the manipulation, and, I may add, an experienced knowledge of the object in view. The trees should be occasionally syringed with clear water, with which, if there are any signs of aphides, a solution of tobacco-water should be mixed. It is always best to be early in applying preventives, as, if the pest once gets a firm hold, it is difficult to dislodge it. The recent stormy weather will probably have displaced many of the newly-planted trees, and these must be attended to by pressing the earth firmly about the roots, and, if necessary, fastening them securely to stout stakes. In anticipation of what we may call a more growing time I would call attention to the fact that most stone fruits, but more particularly Peaches, Nectarines, and Apricots, require an abundance of water in the growing season; and it is a good plan at this time to mulch old-established trees with a good dressing of horse-droppings, which should be so placed as to form a large basin round the stem, into which, during the prevalence of dry weather, several gallons of soft water may be poured with great advantage very frequently, and occasionally a handful of salt mixed with the water will be beneficial. Some quicklime strewed over the surface of the soil under Gooseberry bushes will assist in keeping in check the fly which produces that pest, the Gooseberry caterpillar. *John Cox, Redleaf.*

THE

Gardeners' Chronicle.

SATURDAY, APRIL 22, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

Monday,	April 24	Sale of Orchids from Mr. Bull, at Stevens' Rooms.
Tuesday,	April 25	Manchester Botanical and Horticultural Society's Auricula Show.
Wednesday,	April 26	Royal Botanic Society's Second Spring Show. Sale of Flowering Orchids from Messrs. Backhouse & Son, at Stevens' Rooms.
Thursday,	April 27	Royal Horticultural Society of Ireland: Spring Show. Sale of the Second Portion of Mr. Rucker's Collection of Plants, at Stevens' Rooms.

SOME time since we had occasion to speak of some experiments made by Mr. MAULE, of the Bristol Nurseries, with the object of endeavouring to arrive at certain "fundamental principles" in which a cure for the POTATO DISEASE may be found. Since that time Mr. MAULE has printed, for private circulation,* a small book illustrative of his views, and containing photographs showing the results of his experiments. Of this book Mr. MAULE has obligingly sent us a copy, and from it as well as from communications received from him we are enabled to trace the course of reasoning followed by him, and to see clearly the results of his experiments.

We may say at the outset that the facts which Mr. MAULE has brought to light by his careful and ingenious experiments have for us a much greater value than his theories, to which we cannot assent. We will endeavour to lay before the reader both the ideas that prompted Mr. MAULE'S experiments, and the results to which he has attained.

Mr. MAULE sets out by asking, What is the Potato? Is it a vegetable tuber or a vegetable tumour? meaning by the latter word a diseased growth. In his opinion, what some call the "noble tuber" is a "morbid excrescence thrown off from the sap of the plant." He suggests that it is probable that the tuberless Solanum etuberosum is the parent plant of the tuber-bearing S. tuberosum, which has become in some way diseased, and thrown out tubers. This leads the author to the probable cause of the disease, which he finds either in the plant or in the atmosphere; and though we cannot change the atmosphere, we can, he argues, change the plant by calling in the aid of the cultivator, and adopting means hereinafter mentioned.

Before we go further into the details of Mr. MAULE'S experiments, we must clear the ground, so far as we are concerned, by demurring entirely to Mr. MAULE'S notion that the tuber is of necessity a morbid excrescence. That it may become so is, unfortunately, only too palpable, but that it is not necessarily so is, we think, also sufficiently obvious. The tuber is, as every botanist knows, merely a bud or a collection of buds in the form of a thickened shoot, differing from most buds in its subterranean position, and in the large development of cellular tissue filled with starch. In all this we see nothing morbid. On the contrary, we look upon it, in the first instance, as a provision for securing the reproduction or multiplication of the plant under circumstances when ordinary reproduction by seeds might not be so easily effected, or when the results might be endangered by climatal or other adverse influences. In the hot, rainless districts of Peru, of which the plant is native, germination of seeds or the progress of the seedlings might be seriously impaired by the heat and drought, and hence some other means of reproduction would be advantageous.

Assuming (what is not proved) that Solanum etuberosum is the parent plant of S. tuberosum, then, according to the doctrine of natural selection, the tubers might have been formed in this wise: We may suppose that S. etuberosum, being already gifted by hereditary endowment with the tendency, under certain circumstances, to form tuberous buds, exercised that tendency. The formation of the tuber proved beneficial by enabling the plant to withstand adverse climatal or other influences, and so the tendency became a "habit," greatly to the benefit of the plant, and greatly to the advantage of the human race. If the tuber-forming property was, then, the result of natural selection, it was also providential and beneficent. An animal tumour, such as Mr. MAULE speaks of, might indeed be perpetuated, but it would be to the detriment of the animal. It would take us too far into the domains of pathology to discuss this matter at length, suffice it to say that the analogies traced by Mr. MAULE are merely of a superficial character, and this remark applies even more forcibly to the case of the Truffle, to which also Mr. MAULE compares the Potato.

Turning now to Mr. MAULE'S experiments, we find that he has all along followed the deductive plan. He considered first of all that if we could give a European foliage and constitution to the South American plant, we should so strengthen it as to adapt it to the conditions under which it grows in Europe, and thus avert disease. Acting on this impression, he, as early as 1846, crossed the Potato with Solanum Dulcamara and S. nigrum, and raised a batch of seedlings. This experiment was so far successful, but it was not so as regards Mr. MAULE'S principal object, for, he tells us, all the seedlings "partook of disease as much as their parents." Not disheartened by this result, but reflecting on the matter more and more, Mr. MAULE determined to try the effect of grafting. In his former experiments he had endeavoured to inoculate the Potato with the hardier properties of the Bitter-Sweet and of the black Nightshade by means of cross-breeding, he now tried to bring about the same result by grafting. If, reasons Mr. MAULE, a hardier foliage can be given to the Potato its liability to disease will be lessened. Mr. MAULE seems to lay great stress on the texture and covering of the leaf as an important element in the matter, and perhaps he is right in this, although we are not aware that the character of the foliage, which is very different in different kinds of Potatos, has any proportionate effect in warding off the disease or *vice versâ*, though it seems reasonable enough that it should be so.

Mr. MAULE'S photographs show, first, a spray of Solanum nigrum grafted on to a shoot of the Potato. On the underground branches of this latter a tuber was formed in the ordinary way. That tuber must presumedly, but not necessarily, have been formed by the aid of the leafage of the Solanum nigrum. It remains to be seen what this tuber will produce, and this is a point to which we look forward with lively interest.

Next, we have a case where a portion of the Potato was grafted on to the Bitter-Sweet, or woody Nightshade, "Solanum Dulcamara." In this case tubers were formed on the Potato shoot in the axils of the leaves, a position in which they may occasionally be found where no grafting has taken place. These tubers, having received their sap through the roots and stock of the Dulcamara, may, however, be assumed to possess some of the qualities of the stock. Lastly, and most interesting of the whole, we have a case where the Potato shoot was, as in the preceding case, grafted on to Solanum Dulcamara, and from the roots or underground shoots of this latter tubers were formed, exactly as in the case of the Potato in an ordinary condition. Here, again, we await with great interest the result and fate of these Potato tubers produced on Dulcamara roots. But whether Mr. MAULE'S anticipations as to relative immunity from disease be realised or not, it is impossible not to see that in his hands the process of graft hybridisation has received a most important confirmation, supposing the facts to be rightly interpreted. It would, however, have been more satisfactory if the actual specimens had been sent for examination; but we confess that the explanations offered by some who saw the photographs appear to us less probable than the notion that the tuber really was the direct result of the grafting, as Mr. MAULE believes. A new fact gained or confirmed for science in this way is almost sure to be the starting-point of new discoveries of great ultimate practical value, though very possibly not in the way surmised by the original experimenter.

* *The Potato: What is It? The Probable Cause of the Disease and the most likely Means to employ to Effect a Cure.*

—— THE illustration which we give on the opposite page will serve to show the great value in an artistic point of view of certain species of Bamboo, as an adjunct to the scenery of lakes. Our illustration (fig. 95) is taken from a photograph kindly forwarded us by the Secretary of the Queensland Acclimatisation Society. Although what may be done in the youngest and most tropical of the Australian colonies is not to be taken as a guide for more temperate climates, yet there are various species of Bamboo or of ornamental grasses hardy enough to be made use of for similar purposes in this country. Messrs. VEITCH have a collection of such plants by the side of a little rill at Combe Wood, near Kingston, Surrey, and in many places in our southern and western counties and in Ireland hardy Bamboos might, and in some cases are grown with great advantage; unluckily they rarely flower, hence it happens that there are many species in cultivation which are as yet undetermined and only known under provisional names. In the garden of the Queensland Acclimatisation Society many hundreds of the rarest tropical and subtropical trees, Palms, &c., are yearly added to the garden, while a large area is devoted to experimental gardening, with a view of increasing and distributing thoughout the colony the large numbers of rare and valuable plants reaching the Society from India, China, Japan, the South Sea Islands, &c. A simple shed of brush-wood suffices in that climate to give the necessary protection to tens of thousands of young plants. The winters, however, prove too sharp for some plants coming from moist, hot climates, hence a glasshouse has been erected to shelter all such plants during the first winter, and to enable them to obtain strength and size enough to hold their own in the open air during the second winter, more especially when sent to the northern parts of the colony, where the slight white frosts felt around Brisbane are not known. For some notes on hardy Bamboos, the reader may be referred to those by Signor FENZI in our columns for 1872.

—— It is not long since we had to record the mishap that had occurred to a friend from the use of coal-tar. In the current number of the *Gardeners' Monthly* (American), we find a record of a similar disaster in the case of wooden frames coated with coal-tar, and heated with hot-water pipes, the heat from which sufficed to melt or vaporise the tar and injure the plants.

—— It will interest exhibitors of POTATOS to know that the Council of the Birmingham Cattle Show have just decided on a most attractive prize list, the prizes offered to be competed for at the great show at Birmingham in December next. The experiment made last year of arranging classes for "types of kinds" was so thoroughly successful that it has been decided to continue it. Thus Ashleaf Kidneys, known by innumerable synonyms, are to be exhibited in one class; to Lapstone Kidneys, which are also known by a number of names—*e.g.*, Haigh's Seedling, Pebble White, Hedley's Nonpareil, Yorkshire Hero, &c.—another class is set apart. Regents or Dalmahoys, or any variety of this class or type, no matter by what name known, are provided for in another class. Classes are also provided for (1) Paterson's Victoria, (2) Vermont Beauty or Brownell's Beauty, (3) for Snowflake or other white-skinned American variety, including Bresee's Climax, Bresee's Peerless, American Breadfruit, Early Goodrich, &c.; (4) for "any white-

skinned variety not provided for in the other classes;" and (5) for "any coloured-skinned variety nor provided for in the other classes." There are also classes for three, six, and twelve varieties respectively, choice of sorts left entirely to exhibitors, and in the latter (twelve varieties) the prizes are so good that we imagine the competition will be large and severe, for in addition to £5, £3, and £2 for 1st, 2d, and 3d prizes in money, a cup value ten guineas will be awarded to the winner of the 1st prize, the cup being given by George Wise, Esq., J.P., Woodcote, Warwick—a gentleman who for some years past has most intelligently and generously encouraged the cultivation of our most important tuber. Other valuable prizes are offered by the leading seedsmen. The prize list will be shortly ready. Those of our readers who may desire to possess a copy should sent their names and addresses to the secretary, Mr. J. B. Lythall, Bingley Hall, Birmingham.

—— Mr. Anthony Waterer's Exhibition of American Plants at Philadelphia, to which we referred a few weeks since, may be set down as likely to be a most successful one, as he has received intelligence of the safe arrival of the plants, which look as fresh as if they had but just been taken up.

—— Though the French are noted for the preparation of their coffee, it seems that they do not always obtain the genuine article, and that Acorn Coffee is still a thing of frequent occurrence. In confirmation of this, Consul Playfair tells us that, owing to a system of high duties which have been levied in Algeria, a brisk trade has taken place between that country and France in sweet Acorns, which are slightly treated in Algeria to prevent them from germinating, after which they are exported to France for the sole purpose of adulterating coffee. It has been surmised, we know not how truly, that "Pelotas berries" and Acorns are one and the same thing.

—— The following Orchids are in flower at the Orchid showhouses of Mr. Serjeant Cox, Moat Mount, Hendon, under the care of Mr. Beattie, gr.:—Vanda tricolor superbum, V. cristata, Dendrobium Wardianum, D. Farmeri aureum, D. crassinode, D. primulinum, D. lituiflorum, D. heterocarpum, D. Pierardii latifolium, D. japonicum, D. densiflorum, D. Devonianum, D. Jamesianum, D. infundibulum, D. erysanthum superbum, D. nobile, D. barbatulum (new and very pretty), D. capillipes, Odontoglossum triumphans, O. Alexandræ, O. gloriosum, O. luteo-purpureum, Epidendrum recurvatum, E. crassifolium, E. dichromum striatum, E. vitellinum majus, Masdevallia ignea, Cattleya mutabilis, C. species, Oncidium Batemanni, O. barbatum, O. ampliatum majus, O. Papilio, O. nebulosum candidulum, O. cucullatum maculatum (the importation of last year, very fine), O. triquetrum, Ionopsis paniculata, Eria species (bought unnamed—a spike of fourteen large flowers, greenish yellow, with rich brown labellum), Ada aurantiaca, Lycaste Skinneri, L. Harrisonii, Maxillaria leptosepala, M. luteo-purpurea, M. picta, Cypripedium Bullianum, C. niveum, C. hirsutissimum, C. venustum, C. barbatum, Brassia maculata, Phalænopsis rosea, P. grandiflora, P. Schillerianum, and Leptotes bicolor.

—— The next meeting of the Institution of Surveyors will be held on Monday evening, April 24, when a paper will be read by Mr. W. H. Michael, entitled "The Working of the Sanitary Acts in Rural Districts." The chair to be taken at 8 o'clock.

—— The *Athenæum* says that in *Reimann's Farber Zeitung*, No. 7, for 1876, attention is called to the fact that a decoction of the peel of Onions produces a fine orange-yellow upon glove-leather, which fixes itself with great permanency.

—— The Messrs. Cole, of the Holly Nursery, Hundleby, Spilsby, inform us that the magnificent tree of Magnolia conspicua growing in their grounds has now more than 5000 blooms upon it. The tree measures 90 feet in circumference, and is 18 feet high. It must be a grand sight.

—— How rarely one meets with the Costmary (Pyrethrum Tanacetum) in gardens, and yet a properly furnished herb garden would be incomplete without it. We met with it the other day in the interesting herbary at Castle Ashby—a department of the kitchen garden that is much neglected now-a-days—and were informed by Mr. Beech that the leaves are dried, then rubbed to powder, and used for flavouring rice puddings. At Castle Ashby the herbary is a distinct part of the kitchen garden, of semicircular shape, the beds representing the segments of a circle. It is always well-furnished and carefully tended, and therefore at all times during the summer repays inspection.

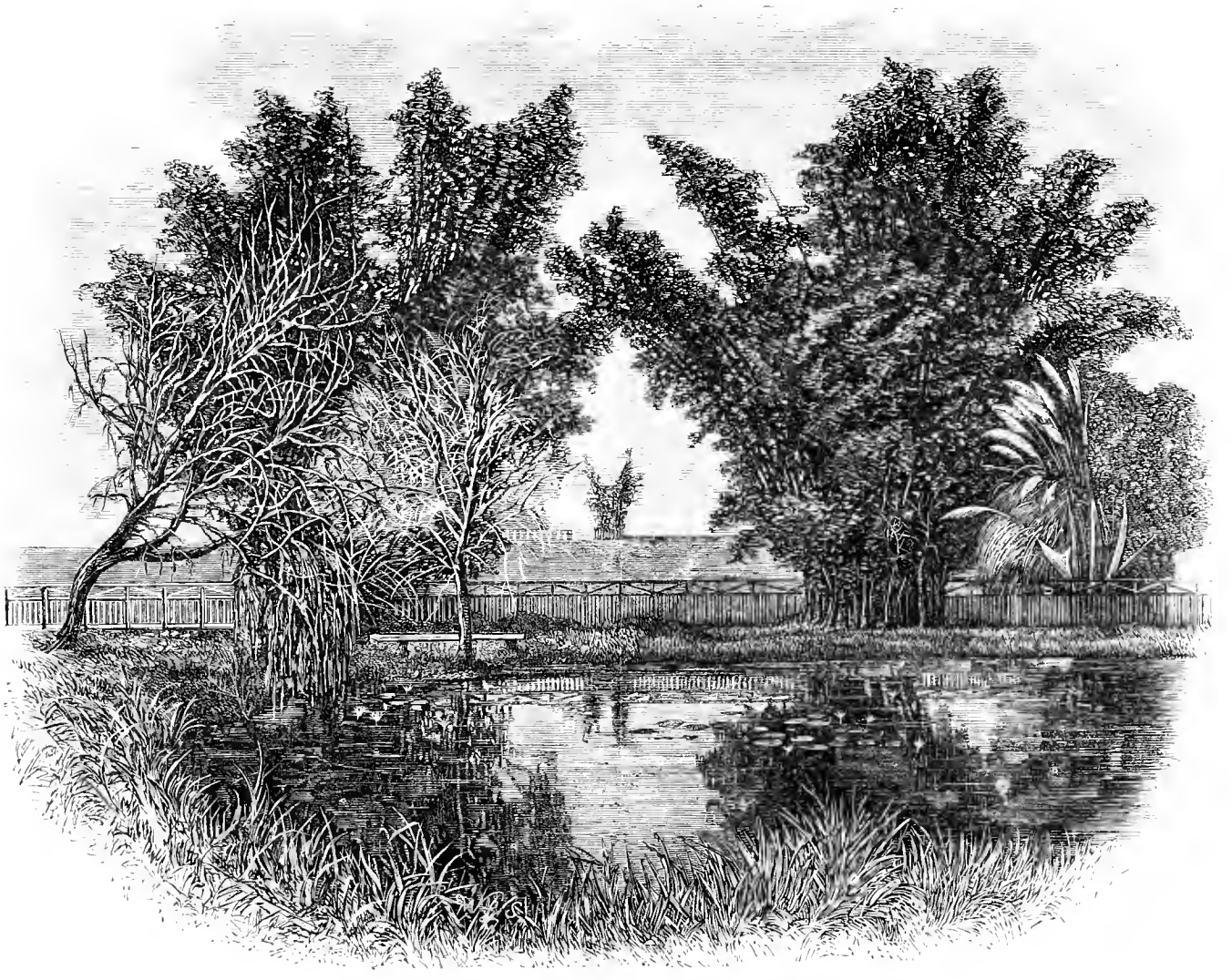

Fig. 95.—Lake with Bamboos and Pampas-grass.

—— The Sweet Briar can be forced in order to have its young growths for use at this season of the year. We recently saw some plants that had been raised from seed, and forced the winter following the second year. The plants should be planted out in the open ground during summer, and lifted in October and November and potted in medium-sized pots, and placed in a warm greenhouse. During March and April an abundance of young shoots will repay the labours of the cultivator.

—— Several ridge-and-furrow roofs are now being glazed on Rendle's Patent System at the Paddington Station of the Great Western Railway Company. They have a very light and elegant appearance, and can be seen from the roadway leading to the departure platform.

—— The next meeting in connection with the horticultural department of the Bath and West of England Society will be held at Hereford. The Steward of that department, the Hon. and Rev. J. T. Boscawen, Lamorran, Probus, Cornwall, asks us to remind exhibitors that, in order to obviate the objections so often made against the system of exhibiting plants in competition for money prizes, it has been determined to give sums of money, in proportion to the importance and value of the plants exhibited, as gratuities to exhibitors' gardeners, and also to enable them to pay the expenses of transit, &c. Exhibitors are requested to forward to the Steward, before May 10, a description of the plants proposed to be shown, and the name of the gardener who will be in charge. All plants must be staged in their alloted places on Saturday, June 3, or not later than 10 A.M. on Monday, the 5th. Any further information may be obtained on application to the steward.

—— It may interest Orchid growers to know that the splendid specimen of Odontoglossum cirrosum, figured by us in our last issue, will be on view at Stevens' saleroom during the sale on Monday next, April 24. It may be well to note that this word cirrosum has been almost universally misspelt cirrhosum. The "h" is certainly superfluous, and we doubt not that Latin scholars would tell us that cirratum was a better rendering than cirrosum, except in cases where an excessive degree of "curling" is intended.

—— Sparmannia africana is one of those neglected Cape of Good Hope plants that well deserve a restoration to public favour. It is a fine old greenhouse subject, blooming freely from the old well-ripened wood at this season of the year. The flowers are produced in lengthened bunches, and are white in colour, with yellow and red stamens. We recently saw it in one of the greenhouses at Castle Ashby blooming freely from cut-back plants. In the same house were some huge examples of Brugmansia sanguinea, a magnificent plant suited to the noblest conservatory, and producing numerous trumpet-shaped orange-red flowers. Hæmanthus puniceus, the scarlet blood-flower, is largely grown, big examples in large pots, which are now throwing up their stems with great vigour. These have a very showy effect when in full bloom. One of the evergreen Viburnums, V. rugosum, is now a conspicuous feature in the palatial conservatory. This is a useful greenhouse flowering plant, and the rugose downy leaves on the underside have a certain attractiveness when the plant is not in bloom. Lasiopetalum ferrugineum is literally clothed with small bunches of Nightshade-like flowers, white, with a dark centre, which contrast well with the rusty-coated leaves. This is an excellent greenhouse plant, well deserving of more general cultivation. A huge plant of Clianthus puniceus, trained against the wall, was loaded with large bunches of the immense flowers it bears; and close by was the curious hermaphrodite, Ruscus androgynus, producing its flowers on the edges of the leaves. On the opposite side, in a sunny position, was Hibbertia dentata, with its dark leaves, golden-yellow flowers, not unlike those of a Portulaca, while the young growths were of a bright red tint. The large conservatory contains many subjects of interest, and at all seasons of the year there is something to challenge attention.

—— We learn that Mr. W. B. Hemsley has been appointed Lecturer on Botany at St. Mary's Hospital, in place of Dr. Trimen, resigned. Mr. Hemsley is the Lindley Librarian of the Royal Horticultural Society, and is the author of a Handbook of Hardy Trees and herbaceous plants, which we find very serviceable for reference.

—— At the meeting of the Horticultural Club on Wednesday last, Mr. Maurice Young showed specimens of a new process for printing on wood invented by Mr. Thomas Whitburn, of Guildford, which is likely to become exceedingly popular for decorative purposes, such as panels, dados, skirting boards, cabinets, &c. The designs, which were in this case in excellent taste, are drawn and engraved on wood in the ordinary way. An "electro" is taken from the block, and from this cast the design is imprinted on thin slabs of deal exactly as they would be on paper in letterpress printing. The specimens shown were indeed printed in this manner in an ordinary printing-press. This new process, then, promises to be as inexpensive as it is useful, durable, and elegant, and the houses of the middle and lower classes may, through its means, be decorated in as good taste as the mansions of the wealthy. A vote of thanks was unanimously voted to Mr. Young. A discussion on the best trees to plant in towns then took place.

New Garden Plants.

Calanthe vestita (*Wall.*) igneo-oculata.

This is a nice variety of the well-known plant. The texture of the flower would appear to be a much stronger one. The base of column is purplish; over it comes a dazzling fire-colour, and the bloteh in base of lip is just of same colour. It comes from the collection of Sir Trevor Lawrence. Mr. Joseph C. Spyers, the grower, writes thus:—"Received from Borneo last spring. It grows much stronger than the ordinary vestita rubra. It retains its foliage in the present instance till now, and it has been in flower three weeks." The flowers came quite so fresh, as if just opened. It is undoubtedly a very commendable variety. *H. G. Rchb. f.* [A fine specimen was shown at the Floral Committee on Wednesday last. Eds.]

Spathoglottis Lobbii, *Rchb. f.**

It is a great satisfaction to see alive, in a splendid specimen, a plant one has named as long ago as 1862, from rather poor materials. It is a pretty thing, though a terrestrial Orchid. It has a slender peduncle, elegant and firm, with loose hairs, with a few very distant sheaths. At its end it bears a lax raceme of six flowers on long stalks, each flower covering very nearly a half-crown piece. Both sepals and petals are oblong, nicely pubescent outside, the lateral ones not spread but very near the lip. The colour is sulphur-yellow, and the lateral sepals show some three or four brown lines on their interior surface, opposite the other inferior sepals. The lip is tripartite, the side laciniæ oblong and upright, the one on a long linear nearly rounded and bilobed at the apex. There is a projecting small angle with hairs on each side of its base—a bilamellar callus with brown dots and whitish as it stands at the basis of that part. The column is arched and very broad near its summit. The anther is oblong and beaked, and bears two pairs of long stalked pollinia. There is a "*je ne sais quoi*" in the flower that makes me think of a Phalænopsis, no doubt the tripartite lip with the callus. If I name the plant S. Lobbii, there is no doubt that I am right. There is, however, a very disagreeable older statement, that might be taken to apply to it; and yet it would be a mistake to give the plant the name from the published documents—I mean Spathoglottis affinis, De Vriese, *Illustration*, t. 15. If you look to the plate you find very much longer bracts, very large streaks on the peduncle, and the lateral sepals spread outwards. The side partitions of the lip appear to be much broader. The description is made up from the representation (always a terrible proceeding, that should be avoided if possible), and while the plant as it stands is one of those desperate impediments to a steadily working real monographer, as they are adopted by so many who work only for their own glorification. The plant came from Sir Trevor Lawrence's collection. At my request as to its origin, Mr. Joseph Spyers, the Orchid grower of Sir Trevor, kindly informed me that it came from Messrs. Rollisson. Messrs. Rollisson were so good to write me that they had the plant from Burmah. Dr. Lindley in his herbarium noted the plant to come from Java. But there are several great mistakes about his statements of the origin of W. Lobb's plants. Thus Dendrobium scabrilingue, indicated from Borneo, comes from Burmah, and I cannot think it grows in Borneo. Thus I feel almost certain that D. peguanum never came from Borneo, but from Pegu and Burmah. *H. G. Rchb. f.*

* *Spathoglottis Lobbii*, Rchb f.; Walp. Ann. vi. 455—Pedunculo gracili valido flaccido sparseque villoso; vaginis parvis valde distantibus; racemo laxiflore; bracteis lanceis pilosis ovario pedicellato puberulo multoties brevioribus; sepalis tepalisque sublatioribus oblongis obtuse acutis; sepalis lateralibus labello approximatis; labello tripartito partitionibus baseos ligulatis obtusis erectis, partitione media longe unguiculata antice dilatato flabellata biloba; angulo piloso utrinque in unguis basi; callo bilamellato piloso in ima basi partitionis medianæ; columna arcuata apice dilatata.—Flores sulphurei striis 3—4 brunneis in sepalis lateralibus ac punctis, quibusdam brunneis in callo et ante callum.—Burmah. *H. G. Rchb. f.*

Albuca juncifolia, *Baker.**

A native of the eastern portion of Cape Colony, sent by Mr. Hutton to the Kew collection, where it flowered this year in March. It is allied to A. fibrosa, Baker, in *Gardeners' Chronicle*, 1874, p. 386, but differs from that species by its more numerous leaves, deltoid raceme, stiffly spreading lower pedicels, obscurely vittate outer perianth segments, and bulb coats truncate at the top.

Bulb ovoid, an inch thick, without any setæ at the crown. Leaves 6—10, terete, erect, bright green, 12—15 inches long, $\frac{1}{12}$—$\frac{1}{8}$ inch thick, deeply channelled down the face, obscurely pubescent in an early stage. Scape a foot long, terete, glaucous. Raceme deltoid, 5–6 flowered, about 3 inches long and broad; lower pedicels spreading at a right angle, 1—$1\frac{1}{4}$ inch long, cernuous at the tip; bracts lanceolate, scariose, $\frac{1}{2}$—$\frac{3}{4}$ inch long. Flowers yellow, not at all fragrant, drooping; outer segments of the perianth oblong, erecto-patent, 9—10 lines long, yellow, with an obscure green keel; three inner rather shorter, with incurved callose points. Filaments $\frac{3}{8}$ inch long; three outer entirely without anthers, style as long as the ovary, triquetrous. *J. G. Baker.*

* *Albuca juncifolia*, Baker.—Bulbo parvo ovoideo apice haud setoso; foliis 6—10 viridulis teretibus pedalibus facie canaliculatis primum obscure pubescentibus; scapo pedali tereti glauco; racemis laxis pauciforis deltoideis; pedicellis patulis apice cernuis infinis flore longioribus; bracteis lanceolatis scariosis; perianthii luteo-viridulo segmentis exterioribus obscure vittatis; antheris tribus exterioribus obsoletis; stylo prismatico ovario æquilongo.

OLD MAPLES.

(*Continued from p.* 172.)

Acer campestre.—Occasionally, when the Maple has not been tampered with by the hand of man, and its foliage is less dense than usual, it presents an appearance that an artist would approve of, as in a tree that I observed in a dingle near Sapley, Herefordshire, on the banks of Sapley Brook, where it was conjoined at the base with a Hawthorn, the branches of both trees mingling together, though so different in character (see fig. 97).

A very curious rifted and contorted Maple stands in the Severn meadows, two miles south of Worcester, only branched at the top, and having but scanty foliage upon it at the time it was sketched (see fig. 98). This tree measured 9 feet in girth, and must have borne the brunt of wintry tempests for centuries.

Maples are numerous enough in the Midland and western counties of England, especially in old hedgerows and the borders of woods and coppices, though seldom making part of the woods themselves, and not being felled for the timber merchant, and the turner no longer requiring them as formerly, the farmer hacks at them most unmercifully, so that nearly all—unless fortunately within the enclosure of a park—get reduced to pollards. As specimens of the tortured, wenny, stubby, and ugly shapes to which this discipline subjects them, I have here given representations of two pollard Maples that I observed not long since near Eastnor, Herefordshire. Unlike the Willow, that soon gives way to the pollarding process and is easily upset by winds, the Maple stands only the firmer after all assaults, and like the Lernean Hydra, soon puts forth a hundred new branches to replace those it has lost. It cannot be said, however, that the tree has gained in beauty from the savage mutilation the farmer bestows upon it, but it survives all wounds, and lives on resigned to the adversities attendant upon tree life (see fig. 96). *Edwin Lees, F.L.S., Green Hill Summit, Worcester, March* 29.

LOWTHER CASTLE:

The Seat of the Earl of Lonsdale.

(*Concluded from p.* 498.)

From the lawn near the conservatory is a flight of steps leading to the terrace; at the foot of this commences a broad walk, overhung by rows of Yews, that meet overhead, forming with their dense deep green foliage a shady canopy, at all seasons presenting a

pleasing feature. The trees that overshadow this walk are not alone remarkable seen as a whole, but more so for their individual excellence, and the dimensions they have attained; they are not in the condition in which this tree is often seen, consisting of a number of stems that have divided near the base, or a little above it, and grown, as is usual, so close as to touch in an upright position, but they have single trunks, straight and clean; one measured was 60 feet in height. A yard from the ground its girth was over 10 feet, its lowest branch was 14 feet from the ground; many others there are little inferior. Taking them collectively it would be difficult to find their equals. Speaking more particularly of this terrace, a simple mention of it conveys but a faint idea of its size; it is not, as often met with, a narrow strip of ground more or less in length, but occupies altogether some 25 acres. A considerable portion is occupied by wooded belts, planted for shelter, some of which have unfortunately suffered for want of timely thinning; this is the more to be regretted where, as here, the trees individually, of almost every kind, if allowed sufficient room, attain a very great size. Where there are existent soil, climate, and other essentials to the full development of trees, it is a great pity that they should ever be allowed to suffer through over-crowding; each should be given enough space to exemplify its natural habit and proportions. The general character of the trees in the more important portions of this ground was such as to admit of their recovering from the effects of being too close by free but judicious thinning out; this has been done with the best results, by not only giving space for the remaining lower growers to increase in size, but also by opening up to view some magnificent trees—particularly Scotch Firs—that must before have been imperfectly seen. There is here a large number of this Pinus that have attained a size and beauty of proportions such as are seldom met with, many measuring from 8 to 10 feet in circumference at 4 feet from the ground, with stems as straight as a gun-barrel, and clear from branches up to 50 feet of their height. Here, too, are Larch 9 feet in circumference. The interior portion of this terrace is intersected by broad beautiful avenue of Beeches. The trees have fine clean stems, and are in the healthiest possible condition.

Leading from here we come to the outer extremity of the terrace, which consists of an open stretch of closely shaven turf three-fourths of a mile in length, and broad enough to admit a cavalry charge; it runs high up above the adjacent ground, the descent precipitous to the river at the bottom. No description can do justice to the charming prospect over the distant country, enhanced by the beauty of the immediate surroundings. Here at a glimpse is brought

Fig. 95.—Old pollard distorted maple, Eastnor, Herefordshire.

number of feet these trees are in girth, especially the Oaks, conveys a very imperfect idea of their size and condition. Throughout the kingdom there are numbers of gnarled old trees, often in a state of decay, with short, immensely thick trunks, the latter frequently not extending more than 10 or 12 feet before they divide into huge limbs. The Oaks at Lowther are, with very few exceptions, of a completely different character, remarkably tall, mostly with trunks clear of branches up to a height of from 25 to 40 feet. There are numbers that girth from 17 to 21 feet at 4 feet from the bottom. I noticed two in particular not far apart: the first girthed 17 feet at 4 feet from the ground, and measured 24 feet to the first branch; the second, 21 feet in girth at 4 feet from the base, was some 40 feet to the lowest branches, 70 feet in height, and as fresh and vigorous as if not half a century old. Such trees contain an immense quantity of valuable timber. At Yanwath, a more distant part of the grounds, are a number of remarkable Scotch Firs, larger even than those already mentioned on the terrace. In the younger plantations there is everywhere evidence of skilful management, the general condition being highly creditable to the intelligent forester, Mr. Baty.

I may here mention that the present Earl is a great lover of trees, and has had planted some three years ago a very wide avenue, commencing at a distance from the north front of the Castle, and extending southwards from it across the park some 2000 yards.

The kitchen garden is about 7 acres in extent, and is reached by a broad walk 1000 yards in length: in it are the plant and fruit houses, the first of which is a lean-to stove, devoted to the growth of small and moderate-sized decorative plants, which are here of more use than large specimens. There were some very nice examples of different varieties of Yucca, such as Y. variegata, Y. quadricolor, and Y. filamentosa variegata. The latter, although long in the country, still keeps scarce. It is one of the comparatively few plants that will continue to grow under a widely different range of temperature. It will live and grow in the open air in this country, and it will

Fig. 97.—Conjoined hawthorn and maple, near Sapley, Herefordshire.

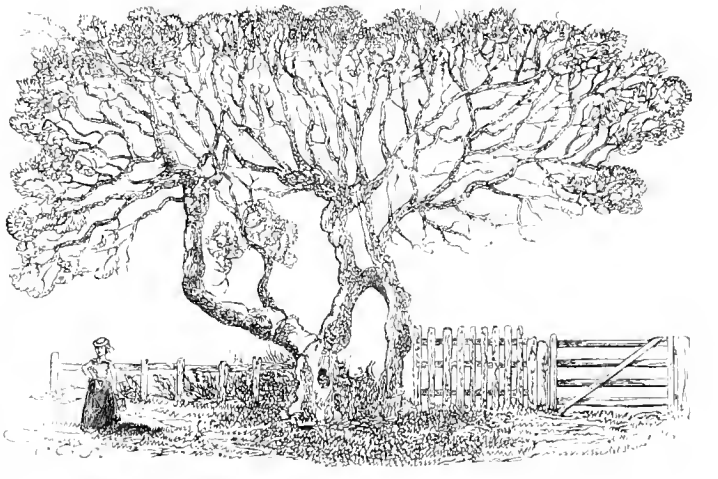

Fig. 98.—Riffed and distorted maple, 9 feet girth, in the Severn Meadows, two miles south of Worcester.

walks that run in different directions; a portion of these are planted on each side with Yews. No wonder at this tree being a favourite at Lowther, considering the way in which it grows.

In addition to the fine examples of indigenous trees, or those of remote introduction, a liberal use has been made of others that have been more recently known amongst us. Amongst quantities little less in dimensions may be named the Douglas Fir (Abies Douglasii), 75 feet in height, 6½ feet circumference a yard from the ground, and 49 feet across from point to point of the branches; Abies Menziesii, height 65 feet, girth 6 feet at 3 feet from the ground; Picea cephalonica, 50 feet high, girth 4 feet at a yard from the base; Abies canadensis, 42 feet in height, girth 3 feet; Picea Pinsapo, 40 feet high. At some distance from the lower end of the Countess' garden is a under the eye an immense broad expanse over which are dotted numerous homesteads with sufficient timber at intervals to vary the scene. Near the bottom of this terrace are two very large Ash trees, known as Adam and Eve, the largest girths 21 feet at 5 feet from the ground. Broad grass drives extend for miles through the park, from which at every turn something attractive, not before seen, meets the eye. To the right a group of majestic Oaks that have kept sentry here for hundreds of years, still full of health and vigour; to the left a huge Beech or Ash with individual branches equal in size to a goodly tree. Ash, although, as in most places, not present in such quantities as the King of the Forest, grows proportionately larger here than the Oak. There is one I noticed that measures some 22 feet in circumference at 6 feet from the ground. A simple mention of the

also bear being continuously kept in as high a temperature as required for tropical plants, and so treated, it is much handsomer, and attains four times the size it ever gets in the open air. There are many hardy plants that will bear heat for a time, but they usually dwindle away if continuously kept in it; it is not so with this Yucca. With these were Palms, Dracænas, Cordylines, Beaucarneas, Gardenias, and tuberous-rooted Begonias, the latter are amongst the most useful subjects that can be grown, being of easy culture and possessing the good qualities of continuous flowering as also answering well for cutting.

Adjoining this is a similar house in which are grown larger plants, such as Crotons, Allamandas, Bougainvilleas, Stephanotis, Anthurium Scherzerianum, Dendrobiums, Eucharis amazonica, Caladiums, &c., and quantities of Adiantums. From this

is a long narrow house mostly filled with plants for conservatory decoration, Azaleas, Statices, Achimenes, and Coleus. At a short distance is another range, the first of which is a Peach-house, mostly old well-proved kinds, except Prince of Wales and Dr. Hogg; the trees were in good bearing condition, occupying a low trellis, in which position they are much handier to get at than when very near the glass; the back wall is also covered with Peaches.

From this we enter a house occupied by plants for the conservatory, consisting of Aphelexis, Phœnocomas, Kalosanthes, Pelargoniums, and a very large quantity of Fuchsias.

Next is a house filled with Azaleas, Camellias, and a splendid lot of Lilies, of which Mr. Shand has reason to be proud; they were beautifully grown, with the leaves as green as possible down to the pot—a condition never to be seen unless they have received unremitting attention in watering.

The Countess, we understand, takes a great interest in the garden, and it is in contemplation to erect here some extensive ranges of plant and fruit houses.

In a sheltered light corner outside, plunged in pots, were a quantity of large well-managed plants of Humea elegans used for staircase decoration; these also require close attention to grow them well with their leaves intact and healthy as these were, and without which half their appearance is destroyed. In the front of the range, and extending across this garden 250 yards in a length, is a broad border filled with Hollyhocks, Dahlias, Asters, Stocks, and other bedding plants, in excellent order, in front of which is a wide walk running the entire length; the walks in the whole of this garden have a very substantial stone edging sunk in the ground about 18 inches. Where stone can be procured at reasonable cost it is much preferable for a kitchen garden, as it looks well, is durable, and does not harbour insects.

On the walls Plums do remarkably well, especially the better sorts, such as Green Gage, and Coe's Golden Drop, which were carrying splended crops, the trees models of good management, as also are the Pears. The principal sorts grown are those found to do the best in this district: they consist of such kinds as Marie Louise, Louise Bonne, Williams' Bon Chrétien, Beurré Diel, &c. The dry, high-lying ground here—this garden is 760 feet above the sea level—suffers little from spring frosts. The adjoining division of this garden was originally an orchard, until Mr. Shand removed most of the worn-out trees and broke the land up for vegetable crops. The quarters are divided by broad grass walks, kept as closely mown as a lawn, the surrounding walks are gravel, with a stone edging, as in the preceding garden; inside this edging are rows of Pansies and Roses. The appearance is much improved by the introduction of rows of coloured Beet, and similar things on the edge of the grass paths. In such a situation these not only improve the effect, but are in character, which is more than can be said for them when used in the flower garden. Vegetable culture, as carried out by Mr. Shand, receives the attention it deserves; the crops one and all are in an unexceptionable state, and the quarters and walks perfectly free from weeds. The kitchen garden was in a condition equally pleasing to look upon with the rest of this well-managed place. *T. Baines.*

Home Correspondence.

Vernal Crocuses.—In the article on this subject in the *Gardeners' Chronicle* of the 8th inst. reference is made to the Scotch Crocus, supposed to be a cultivated form of Crocus biflorus, and so I believe Mr. Baker considers it. The Scotch Crocus is certainly very unlike the ordinary form of C. biflorus occurring at Rome, Florence, Naples, Caserta, and elsewhere in Central and Southern Italy, and known in Italy under the name of pusillus (Tenore). This is a weedy looking plant, much smaller and less ornamental than the plant known in English gardens as the Scotch Crocus, which I believe has had another origin. In examining the Croci in Tenore's and Gussone's herbaria at Naples, I found two specimens of annulate Crocuses—one in Tenore's herbarium, labelled "C. biflorus, named Scotch Crocus in English gardens," with no habitat given; and another in Gussone's herbarium, exactly resembling our Scotch Crocus, labelled "C. pusillus var. Tenore, gathered by the road between Ariano and Monte Calvello, near Salerno." Dean Herbert, in his monograph, also mentions "a variety found at Ossolone in the Neapolitan territory, very superior to all others in Italy, having larger flowers and a beautiful bluish ground." I think, therefore, there is little doubt that the cultivated Scotch Crocus had a wild origin in South Italy, and that it is not merely an enlarged form of the common C. biflorus of Central Italy. I must take exception to the Cloth of Gold Crocus (C. susianus, Ker.) being lumped with C. reticulatus, a very distinct species. The two plants were confounded both by Herbert and M. Bieberstein under the name of reticulatus, but they have nothing in common except the fact of the reticulated corm coat, and in this point the structure of the reticulation is very different. The well known Cloth of Gold Crocus, C. susianus, Ker., is a Crimean plant with golden-yellow blunt segments, the outer surface of these exterior segments bronzed with rich chocolate nearly to their margin. C. reticulatus (M. Bieb.), C. reticulatus var. variegatus (Herbert), the Crocus variegatus of Hoppe and Hornsch, has a much wider distribution, extending as far west as Trieste, where I observed it on the Corso, a limestone plateau to the east of the city, in great profusion, in the end of February. The perianth segments are much narrower and more acute than in susianus, with a ground varying from white to lilac, and distinctly striped with purple lines on the three other segments. The two plants are unquestionably distinct, and I believe there is no instance of a yellow Crocus varying with either white or lilac flowers, unless Gay's Crocus luteus is a variety of one of the species of the yellow group, including C. aureus. *Geo. Maw, F.L.S., Benthall Hall, Broseley.*

Helleborus niger.—I see there has been a question raised about Helleborus niger and the maximus form, as to whether they bear seed. We have them both here with fine seed-pods. *A. Waterer, Knap Hill Nurseries.*

The Weather and our Fruit Prospects.—Excepting the last three or four days, the weather during the month of March was very severe. Here we had a succession of violent cold storms, varied with frost, hail, rain, and snow. Vegetation received a great check; and, though some things suffered, the chances of a good crop of fruit were very considerably augmented, owing to the retardation of the blossom. From March 28 until the 9th inst. the weather was very favourable, and led to the hope that we were to have a continuance of it for a little time, but with the change of the moon came a change of weather. During Saturday night and Sunday the glass fell rapidly, and on Monday morning it began to rain, and continued most of the day. In the morning the wind was south-west, but during the day it veered to north-west, and the weather became exceedingly cold—in fact, a regular return to the depth of winter, with biting winds and showers of snow. On Tuesday morning the trees were white, and the ground covered with snow. On Wednesday, Thursday, and Friday mornings there were several degrees of frost, with ice of some thickness. At present (Saturday, April 15) the weather is a little better, being drier and a little warmer, though the wind, which is north-east, still continues very cold. Fortunately, nothing has suffered much here as yet, as there are not many things in blossom except Gooseberries and the wall trees; the latter are so far safe. In many places in the neighbourhood Plums are in full blossom, also Currants, and it is to be feared they will have suffered. Cherries are scarcely in full blossom yet, and Pears are still backward. Wall fruit will be a fair crop, unless extraordinary cold weather should prevail. Apricots were a light crop in this neighbourhood last year; this year, though some of the early blossom was destroyed, they promise to be a fair crop. Peaches also promise to be a good crop. Apple trees in general are not very full of flower-buds; some trees are pretty full, whilst others are very thin, especially trees that bore heavy crops last year. My impression is that Apples will not be a heavy crop in this neighbourhood. The blossom promises to be late, and if the weather be favourable there may be a moderate crop, but not a heavy one. Gooseberries and Currants promise well, but I fear the late frost will have done them considerable injury. Raspberries look well, and Strawberries, though much cut up by the cold winds and frosts of March, promise fairly. On the whole, should the weather prove tolerably favourable, there are reasonable hopes of fair crops of most kinds of fruits. We shall most probably have more or less of these cold northerly winds for some time. I have for some years noticed that when the wind is north at the equinox we generally have north winds for some time after. During the late equinox the wind was for several days full north, so that I looked forward for them for some time. I was agreeably surprised when the weather at the end of March and beginning of April set in so mild and favourable. *M. Saul, Stourton, Yorkshire.*

The Potato Fungus and De Bary's Observations.—Little good comes from prolonged controversy, and I hope the present note on the Potato disease may be the last I shall be called upon to write for some time, especially as my answer to De Bary's observations and criticisms will be printed elsewhere. You have given a correct summary on p. 506 of the *Journal of Botany* reprint, and one or two points must be answered. You refer to the "perennial mycelium," a subject which has been put forward as a novelty to those who do not know things, and De Bary certainly claims in his paper to have been "perhaps" the first to call attention to it in the Potato disease. But De Bary was only a lad when the Rev. M. J. Berkeley, in discussing this very subject, wrote (so long ago as 1845), "It should seem certain, then, that the mycelium or elements of the fungus must have pre-existed in the tuber." Elsewhere, in the same essay, Mr. Berkeley distinctly states that he has satisfied himself of its existence in some cases. The nature of Pythium was discussed in your last number (p. 504), and the accuracy of my illustrations is sufficiently attested by my photographs and Mr. Berkeley's recently published letter (p. 436). I need not, therefore, notice De Bary's unworthy insinuations. The suggestion that the resting-spores of the Potato fungus may ultimately be found in some plant distinct from Solanum tuberosum is very old. The same thing has been suggested over and over again, and was repeated by me in your columns last year. Certainly De Bary suggests (as you say) the natural order Scrophulariaceæ as the one where the resting-spores may possibly be found, but he confessedly does this on the strength of the fact, well known to British botanists—that the Rev. M. J. Berkeley (*Ann. Nat. Hist.*, series 2, vol. viii.) was the first to point out that the Potato fungus was to be met with on one of the Scrophulariaceæ, viz., upon Anthocercis viscosa. The *Journal of Botany* reprint is better than the original as printed in the *Journal of the Royal Agricultural Society*, as the editors of the former have corrected such shallow mistakes as "tubers of the mycelium," "a Saprolegniea," "a Peronosporea," &c. The reprint would have been more valuable, however, had the editors corrected some of the less superficial inaccuracies; as, for instance, the one where it is stated (De Bary, p. 243) (*Journal of Botany*, p. 108), that after the antheridium has pierced the oogonium, the globular mass within ceases to grow, "and a cellular membrane surrounds the surface of the globule." It is more probable that (instead of "a cellular membrane") the Professor wrote—or at least meant—"a thin deposit or membrane of cellulose." A membrane consisting of cells, and a membrane formed by a deposit of cellulose, are different things, and the latter is the phenomenon which takes place after impregnation. *W. G. Smith.*

Dendrobiums in Flower.—In a small collection of Orchids, I have now in flower the following species of Dendrobium:—

Dendrobium Devonianum	Dendrobium nobile
,, Pierardi	,, rhodocentrum
,, lituiflorum	,, M'Carthiæ
,, pulchellum	,, senile
,, Dayanum	,, luteolum
,, crepidatum	,, albo-sanguineum
,, Dalhousianum	,, formosum giganteum
,, chrysotoxum	,, crassinode
,, fimbriatum	,, chlorops
,, densiflorum	,, aggregatum
,, eburneum	

And in bud:—

Dendrobium Parishii	Dendrobium nodatum
,, transparens	,, crumenatum
,, dixanthum?	,, moschatum
,, crystallinum	,, sanguinolentum?

The following have gone out of flower since the beginning of the year:—

Dendrobium macrostachyum	Dendrobium lasioglossum
,, secundum	,, Wardianum
,, Boxallii	,, thrysiflorum
,, cretaceum	,, Farmeri
,, heterocarpum	,, Schröderi
,, Cambridgeanum	,, Jenkinsii

P. H. Gosse, Sandhurst, Torquay, April 13.

Umbellate Primroses.—I see that "D." states that Primroses which throw up scapes and single flowers on the same stem are classed as "hybrid Primroses." It surely is not very uncommon for the yellow Primrose to do so in its wild state. I enclose one gathered to-day in a wood in Cheshire. [A characteristic specimen. Eds.] The many-flowered scape was surrounded on the same plant by single-flowered stalks. *C. W. D.*

New Plants for the Sentimental.—Some recent paragraphs published in the *Gardeners' Chronicle* have reminded me of a recently published *Language of Flowers*, "completely revised from the best authorities," and published by Warne & Co. If the sentiments in this book are old, I think it must be conceded by your readers that many of the plants must be new. The two first are the "Abecedary" and the "Abatina;" then comes the

"Acalia," the "Angrec," and the "Austurtium." Passing many examples of extraordinary spelling, the searcher for sentiments soon lights on the "Cosmelia," the "Grammanthus," and the "Imbricata," rapidly followed by the "Lote Tree" and a novelty pleasingly named "Malon Creeana." The "Marianthus" indicates (for Mary Ann) "hope for better days," and the "Machineal tree" points to "falsehood." The "Moving Plant" strikes us as being a little indefinite—it, however, signifies "agitation." In the letter "S" we recommend the "Schinus" and the "Senvy" to enterprising nurserymen. It would appear that cryptogams are bad-meaning plants, to judge from the sentiments they express. We have the Mushroom, the Champignon, the Truffle, the Lichen, and the "Tremella Nestoc." In "part second" of this volume we get the genus "Amethyst," and are informed that "Rhubarb" indicates "advice" (medical?), the "Gooseberry" "anticipation," and "benevolence" points to the "Potato." For "delicacy" the "Bluebottle" is an equivalent," for "frugality" "Chicory." To express "irony" a sprig of "Sardony" is necessary, and "profit" (Oh ye tailors!) is expressed by "Cabbage." "Youthful love" and the "Red Catchfly" are, we need hardly say, the same with each other. *W. G. S.*

Vandas in Flower in the Liverpool Botanic Gardens.—The collection of Vandas in the Liverpool Botanic Gardens present the most ornate appearance of any that I have seen for a long time. The term "exquisite" will scarcely convey to your readers anything like an idea of the state of these plants. What struck me most was the freedom with which both young and old plants were flowering. It is not every day one sees Vandas in such a young state flower so freely, to all appearance, as a Tom Thumb Pelargonium. Upon asking Mr. Richardson his mode of treatment he declared it was very simple; so is everything in this world when once one "knows the way." A sharp season of growth and a perfect rest is the cause to which Mr. Richardson attributes what I must call an immense success in the flowering of these most beautiful plants. I am sorry that my visit was too short to enable me to note in a general way the many things of interest upon which a most interesting paper might be written. One thing, however, is strikingly evident—that under the present management the Botanic Gardens of Liverpool are destined to take a prominent place amongst the public collections of plants under corporate jurisdiction in this country. Some four years ago the glass department underwent a reformation which has added considerably to the facilities for plant-growing. In the new Palm-house are to be seen samples of Palms and Musas, which for rapidity of growth stand unrivalled in the history of elephant plant growing. New Zealand and other tropical Ferns are in robust health, and only require head-room to become the most magnificent specimens in the kingdom. The visit was to me a singularly refreshing one. One always meets with many old acquaintances in a botanic garden which are well-nigh forgotten, and which afford pleasant reminders of boyish days, when less care and anxiety pervaded the mind now engrossed with all the responsibilities which enlightened practice and scientific research entail upon us. As an addendum to the above remarks I may say that the summer bedding-out is a great feature in these gardens, and that all the colours of the rainbow, and all the latest fashions of the day in this particular branch of gardening, are to be found carried out in a masterly style by Mr. Richardson, whose efforts in this direction seem to be highly appreciated, not only by the Town Council, but by thousands of the ratepayers as well. *W. Hinds, Otterspool, Liverpool.*

Peaches and Nectarines, &c.—Like most of your readers I have been long familiar with Mr. Radclyffe's name as a Peach-grower of repute, and I think I have read nearly all he has written on such subjects without finding anything much opposed to my own experience, after making allowance for the difference of circumstances in all cases. His criticisms on setting fruit with the syringe in the *Gardeners' Chronicle* for April 8 are perfectly legitimate and fair, and, if you will allow me, I would like to answer them as shortly as possible, and, if I do not make a convert of Mr. Radclyffe, I shall, at least, put the matter in a light in which he has, perhaps, not seen it before. I am, it may be, not far out in supposing that Mr. Radclyffe's experience has been confined chiefly to late Peaches. I think I do not remember ever seeing anything from him on early forcing, at all events. Now, with late Peaches I have never had much trouble in the setting, they being in every way more favourably placed for fulfilling all their functions properly without assistance, but with early Peaches it is a very different thing. And here I must go back to what was once, and still is, a very general practice in their culture, though some now tell us that they keep their houses "moist and genial," as at other times, when their trees are in bloom. The custom was to keep them dust-dry from the time the first flower showed signs of expanding till all were set. In addition to this a constant current of air was established between the back and front ventilators, and, to aggravate all, the temperature was raised and the pipes kept hot day and night, according to the outdoor temperature. If any doubt exists as to the truth of these statements, read the weekly or monthly Calendars in any horticultural paper up to within five or six years ago, or even now. Now, after twenty-four hours of such parching treatment (far more a week or a fortnight) go into a Peach-house, and if your nose alone and general sensations do not tell you that such a state of things is unnatural and destructive you are not very sensitive. Though I do not go by this test alone, I find my face and hands are always as good a guide to me as a thermometer. It must be borne in mind, that the growth of early Peach trees is pushed on under very adverse circumstances: it has not the stamina of later growth made under the influence of light and air in abundance. Go into the house on a sunny day, about noon, in the month of February or March and you will see both foliage and flowers flagging and showing every sign of distress under the combined influence of a bright sun, hot pipes, and the more air which one is compelled to admit at such times. Now, after nights of hard firing, and after days during which not a drop of moisture has been spilt in the house, I ask Mr. Radclyffe, is it either a natural or reasonable practice to shut up dry, and to still further prolong the torture by following up with a night's hard firing which is sure to follow after a bright day, for then we have usually hard frosts at night—and can he point to any parallel in Nature for such treatment? It is of the highest importance to sustain the energies of the trees at such a critical period; and when their energies are relaxed under the influence of a parching atmosphere, whether produced by artificial heat, bright sunshine, or dry air, the antidote is moisture, and the syringe affords the readiest means of applying it. This is one reason for syringing. Another is to distribute the pollen. Mr. Radclyffe says water makes it pasty. If he will take a syringe, for experiment's sake, and dash his Peach flowers with it, he will see the pollen flying in clouds, and he will shortly afterwards find it lying in abundance on both flowers and branches dry enough. But why should wet pollen not fertilise? In a former discussion on this subject the Editors of the *Gardeners' Chronicle* appended this remark to a letter of mine: "Certainly, if the water fell on the pollen grain, the latter would burst and set free its contents. It would, therefore, depend where the pollen was, whether good or bad results followed. If close to [on] the stigma, well—if not, *nil*." Now, I maintain that the syringe deposits the pollen grain "close to" and upon the stigma, and the necessary drop of water as well; and here, at once, we have all the essentials. The Editors' argument is conclusively in favour of the syringe, it seems to me, and wants to be set aside before my opponents can advance one step in the matter. Mr. Radclyffe thinks the fruit is set "before the application of the water." I would ask him how this could be, when the trees are drenched once every day all the while they are in flower? Further, the petals drop soon after the fruit is set, never before. I noticed this long ago in fertilising Calceolarias for seed; the impregnated flowers always dropped first, and I find it to be the same with Peaches. In fact, one thing which has struck me as much as anything is the quickness with which the setting process is completed when the syringe is used; whereas flowers that are not syringed keep their petals for a long time. Tap the branches a few days after syringing and you will see the petals begin to fall. Tap another tree on which the flowers are of the same age but where they have not been syringed, and you will find they do not move. In conclusion, with regard to syringing trees with water below the temperature of the house, I may state, as a matter of fact, though I am not here recommending the practice, that I have thoroughly drenched Muscat Vines, at shutting-up time, in full flower, with water more than 20° below the temperature of the house without the slightest apparent injury, and have done so repeatedly; and I will permit any one else to do so, under my directions, and let them report the result. This leaves a sufficient margin for those "usurpers" who are apt to use the water in too cold a state. *J. Simpson.* [We ought to add that, although the water would cause the pollen grain to burst and liberate its contents, as above stated, yet the emission of the pollen tube and its passage down the style to the ovule, or rudimentary seed, would be much more certainly ensured by the moisture from the stigma itself. We apprehend, from this point of view, that the benefit of the syringing would be mainly mechanical, just as shaking the branches would be. Eds.]

Earth-closet Manure.—The Rev. Mr. Moule would not have replied to my letter on earth-closet manure in your impression of the 1st inst., had he not considered it "of importance to your readers and to the public that in the present advanced state of the dry-earth system they should be better informed" than I appear to be "of the nature of the manure which may be produced from house-refuse." Had I not been tolerably conversant with the nature of the manure in question, my letter should not have appeared. However, with your permission, I will add a few remarks upon Mr. Moule's pamphlet, entitled, *Town Refuse the Remedy for Local Taxation*, a copy of which he was good enough to send you last week, and for the perusal of which I am indebted to your courtesy. I would first repeat that I have no feeling of antagonism whatsoever towards the author's meritorious invention, and cheerfully admit its sanitary advantages over other systems in vogue where a thorough water-sewerage is impracticable. I believe, however, with Dr. Voelcker, that its application to densely populated cities like London would be attended with too many practical difficulties to render its adoption probable. To turn again to the economical side of the question, I may perhaps be allowed to quote a remark made at the Society of Arts at a recent debate on the sewage question by the late Dr. Letheby: "He would not describe sewage as a thing absolutely valueless, but he did say it was a false notion to imagine that sewage was of such value that, instead of costing the population something to get rid of it, it ought to realise something towards the payment of the rates. . . . The sooner local authorities were made to understand it was their duty to regard the disposal of sewage entirely as a sanitary question, the sooner would they come to an end of their differences." Now this, of course, is a position directly opposed to that taken up, not only by Mr. Moule, but by a long succession of "sewage utilisers," and, therefore, one which has been vigorously controverted. Even, however, if we assume it to be a correction, it is the merest common sense to counsel in all cases the adoption of such mode of disposal as shall be in each district, consistently with its nearest approach to sanitary perfection, the most economical. The pitfall into which Mr. Moule has fallen is that which has entrapped only too many sanitary economists—the over-rating of the value of his sewage manure. I have carefully read from beginning to end the pamphlet above referred to, and, as far as I am able to gather, the author admits that analysis may altogether fail to reveal the fertilising powers of earth-closet manure; that its value depends, not upon its absolute chemical constituents, not upon the proportions of nitrogen, phosphoric acid and alkalies contained in it (for these are small indeed compared to the bulk of the material), but, as he argues, upon the homogenous distribution of such small quantities of manurial ingredients as it does possess amongst the particles of the mass of earth. He likens the application of manure, and its subsequent decomposition and absorption by the land, to the processes of mastication and swallowing in the animal body. We are told that "the earth in fact digests and assimilates the manure for the plant," and provides it with a properly prepared sap, which is compared to the chyle of the animal. And this digestion consists in the distribution of the manurial substances throughout the soil and their adhesion to its particles in a state of sufficiently minute division to enter the sap-vessels of the plant. This state of things is attained in an eminent degree in frequently used and turned earth-closet manure, and hence the practical value which Mr. Moule claims for it over fertilisers rich in all the more important requisites of plant food. Now I cannot help thinking that Mr. Moule's theory is open to important points of attack. That it is of advantage to have as perfect a distribution of manure as possible throughout the soil in which plants are to seek it is a just and tenable argument. But does not the idea of the assimilation of absolute particles of solid food by the roots of plants belong to a past view of vegetable physiology? It is now usually accepted as fact that plants take in their food solely in the liquid and gaseous conditions—the inorganic materials being absorbed from the earth in a state of solution by endosmotic action. Again, I think that the comparison between the manure as presented by the soil and the chyle of animal economy is not altogether admissible; the selective power possessed by the roots of different plants, whereby each absorbs the constituents best fitted for its maintenance, is against it; and it is far more probable that, so far from absorbing a ready elaborated sap, plants take up their food in its simplest state of solution—all elaborative and assimilative processes taking place subsequently within the system of the plant. One of the recognised differences between the higher forms of animal and vegetable life is that while the plant can form its tissues and cell contents from almost raw materials—two plants of different kinds under identical treatment yielding, the one a nutritious food, the other a deadly poison—the animal possesses this power in a far less marked degree, demanding its food in a condition already elaborated (at some previous stage) by the intervention of some vegetable organism. In comparing the fertility of various soils, too, Mr. Moule seems to go out of his way in order to support his "digestive" theory. Pure chalk, he tells us, has little "digestive" power; sand

none. Clay, on the other hand, does possess "digestive" powers. Mix, therefore, some of your clay and chalk with your unproductive sand, and the chances are that the result will be a fruitful soil. In all this Mr. Moule strangely overlooks the most rudimentary truths of agricultural chemistry. Sand is unproductive, because it only supplies plants with silica, and that in minute quantities; chalk, because it only furnishes lime. Add a good clay, containing alkalies, phosphoric acid, &c, and you supply the chemical constituents needed by the crop. It is thus that the manure acts, and the more soluble and concentrated the manure the better, for it then the more readily spreads its effect throughout the soil. Earth-closet manure is the exact reverse of a concentrated manure, and its fertilising ingredients are far less soluble than those of farmyard manure. If, as has been frequently pointed out, you have plenty of it close at hand, it may possibly prove more efficacious than certain forms of artificials, but that it is to be compared with a judicious blending of the latter in point of economy where carriage has to be paid, is simply an illusion. Mr. Moule adduces certain experiments to show the practical value of earth-closet manure over artificials. One, for instance, is detailed in which distinct plots of Swede Turnips were manured on the same field with equal weights of superphosphate and earth-closet manure respectively, the results being a heavier crop by one third on the latter manure than on the former. Very likely; but then superphosphate alone is not necessarily a proper manure for Swede Turnips, which require, like other crops, a supply of nitrogen and alkalies. Had dissolved bones been used, or some nitrate of soda or guano, with the superphospbate, probably a very different result might been obtained. But in order to be persuasive, such experiments must be scientifically and accurately carried out, the soil being analysed, and the crops not only being carefully weighed, but also submitted to analysis. Meantime the teachings of science are not such—as Mr. Moule would have—as to show that earth-closet manure is useless, but to show that its value is restricted by certain conditions, the nature of which is to render it unprofitable as a marketable commodity far away from the district where it is produced. Before concluding I would add that Mr. Moule's pamphlet points to broken earthenware and glass (see p. 26) as adding, amongst other substances, to the value of town refuse manure! *Bernard Dyer, F.C.S., 32, Burghley Road, Highgate Road, London, N.W.*

Dendrobium Wardianum candidum.—Referring to your notice of the above in last week's issue, I send a bloom from a plant I obtained from Messrs. Low & Co., of Clapton, which appears to be identical with Mr. Wrigley's plant. I also enclose a bloom from a plant I had at the same time from Messrs. Low, which I think is intermediate between D. Wardianum and crassinode. The flowers are borne in clusters of three all up the stem, and are very fragrant. *Charles Winn, The Uplands, Selly Hall, near Birmingham.*

Notices of Books.

THE April number of the *Gardener* opens with a capital paper on hardy fruit culture; next follows one on potting, wherein the absolute necessity for care in the matter of "crocking" is duly insisted on. Both these articles are of the high character for which the practical articles in this journal are renowned. We intend no disparagement by not specifying the other articles; suffice it to say they are all original, well written articles, neither borrowed nor stolen. A feature of recent numbers of this periodical consists in the chapters for young gardeners, wherein a beginning is made at the beginning.

—— The *Villa Gardener* for April is too diffuse for professional gardeners, but contains some good articles for the class for whom it is more especially intended. Cucumber culture in the open air and the culture of Tea Roses in villa gardens are cases in point, so is that on early spring flowers, from the pen of Mr. Ingram, of Belvoir.

—— The current number of the *Gartenflora* contains coloured figures of Dracocephalum altaiense—an old-fashioned hardy perennial with rich blue flowers, and highly to be commended to the notice of lovers of this class of plants, the more so as it is not so often seen as its merits demand. Odontoglossum Insleayi var. β leopardinum is a variety of a well-known species with much deeper-coloured brown spots than usual. Professor Hoffmann continues his observations on the geographical limits within which cultivation of certain plants is practicable, the illustrations given being Catalpa syringifolia and Cedrus Libani. Dr. Regel continues his list of cultivated Cycadeæ.

—— The *Annual Report of the Director of the Melbourne Botanic Garden for* 1875 has reached us. It details the steps taken for the improvement of the garden in a landscape point of view. As many as 1122 new species were introduced, exclusive of varieties. It is curious to read that the gold-fish in the Lagoon are preyed upon to such an extent by cormorants, that the Mayor of Melbourne had to be solicited to permit the use of firearms, and "numbers of these rapacious birds were shot, but this seemed only to encourage others to fill the places of the defunct." Of the Buffalo-grass—Stenotaphrum glabrum—Mr. Guilfoyle speaks in high terms, not only for its ornamental character, but more particularly as a fodder plant, adapted to hot, dry climates. Appended is a descriptive list of vegetable products selected and prepared at the Botanic Gardens for the Philadelphia Exhibition.

—— M. E. Morren has published in a separate form his observations on Drosera binata laid before the Academy of Belgium. They are entirely confirmatory of the results obtained in other species by Mr. Darwin and other observers. The same author has also republished his discourse on the "Theory of Carnivorous and Sensitive Plants," which is a lucid exposition of the present state of our knowledge on these points, together with references to the literature of the subject. It may be commended to those who desire to obtain in a condensed but accurate form a general idea of the subject on which it treats.

—— Dr. Schomburgk has published in a separate form his remarks on the Flora of South Australia from the *Handbook of South Australia*. It forms a very interesting essay, from which we may be tempted to make extract at a future time.

—— *Over the Sea and Far Away*, by Mr. T. W. Hinchliff (Longmans), is a book that we must lose no time in commending to the notice of readers fond of the literature of travel, and with a taste for plants into the bargain. We are compelled to defer a longer notice at present, but hope soon to revert to the subject.

—— Another work to which a longer notice is due on a future occasion is M. Vetillard's *Études sur les Fibres Végétales textiles employées dans l'Industrie* (Vegetable Fibres used in the Arts). Paris: Firmin-Didot & Co. London: Asher & Co.

Reports of Societies.

Royal Horticultural: *April* 19.—Colonel Trevor Clarke in the chair. In the absence of the Rev. M. J. Berkeley, Dr. Masters announced the awards made by the committees, and commented upon some of the more interesting subjects brought before the meeting, including the results of some curious experiments in Potato grafting made by Mr. Maule, of Bristol, and which are more fully alluded to in another column.

SCIENTIFIC COMMITTEE.—A. Murray, Esq., in the chair. The minutes of the last meeting having been read, Mr. Alfred Smee opened a discussion on

Aphides and the Potato Disease, à propos of the observations made at the last meeting, and with special reference to the relation of fungi to the aphides. He held the opinion that the aphides attack the immature shoots, suck their juices, and so predispose them to the attacks of fungi, which latter also prey on the insect, which by its flight may disseminate the disease. An animated debate followed, Mr. McLachlan and others strongly controverting Mr. Smee's views as to the aphides attacking weak growths. Moisture is prejudicial to aphides, and hence, as the plant grows vigorously under such conditions, the aphides mostly disappear, but those which do remain become covered with fungus.

Mr. W. G. Smith said he had examined about a hundred more slides of aphides prepared by Mr. Smee. The insects did not come from Potato plants, and they presented no trace of the fungus found upon the Potato aphides. On the aphides from Apple leaves Mr. Smith had, however, detected a large number of nematoid worms, which seemed to be parasitic upon the dead insects. These worms appeared to belong to the genus Anguillula, and were about twice the size of the nematoid worms discovered by Mr. Berkeley in the nodosities of diseased Cucumber roots.—Mr. Smee said the Apple leaves had not been touched with water, but that the aphides had been taken direct from the Apple leaves and dropped into balsam.

Potato Disease.—Mr. W. G. Smith said, in reference to this subject, that he had recently had an opportunity of examining some fresh material sent to him from Mr. C. Edmund Broome, of Batheaston. It appears that Mr. Broome put a number of diseased Potato leaves under a bell-glass last autumn, with the idea of seeing what they would ultimately produce. The leaves are now all in a mash, and most of the Peronospora threads and conidia have vanished. The Peronospora has, however, been replaced by an immense number of resting-spores, identical with the bodies described and illustrated by Mr. Smith in the *Gardeners' Chronicle*. Mr. Broome's resting-spores show a tendency to become echinulate, or covered with small knots. They are brown in colour, with three distinct coats, and, like the similar bodies discovered by Mr. Smith, they are still hibernating. As soon as these resting-spores show signs of renewed activity and live, experiments will be made with them on sound Potatos.

Experiments with Relation to the Grafting of Potatos. Dr. Masters exhibited photographs from Mr. Maule, of Bristol, who had succeeded in grafting Solanum nigrum on to the Potato, and Solanum tuberosum on to S. Dulcamara, with the result in one case of producing an aërial or stem-tuber on the scion (Potato), and in another of inducing the formation of tubers on the root of the stock, Solanum Dulcamara (see p. 532).

Arrest of Growth in Vines.—Dr. Masters showed contracted shoots of Vines, and puckered and otherwise malformed leaves, with a view of eliciting the opinion of the committee as to the probable cause of the deformity.

Sport of Sedum elegans.—Dr. Masters showed a sport of Sedum elegans from a plant in his garden, and which had assumed nearly the characters of Sedum Forsterianum, and presented a great contrast to the foliage of S. elegans.

FLORAL COMMITTEE.—R. B. Postans, Esq, in the chair. The largest contributors on this occasion were Messrs. Paul & Son, of Waltham Cross, who staged a nice group of Roses in pots, and Mr. B. S. Williams, Holloway, who sent a good group of flowering and fine-foliaged plants. Votes of thanks were accorded in both instances. Messrs. W. Paul & Son also showed a new Zonal Pelargonium, named Vanessa, cerise or pale salmon-red in colour, with a faint shade of purple round the eye, the pips large and of good form, and the truss fine in size. A First-class Certificate was awarded to it as a decorative plant. It was raised by F. Miles, Esq. Certificates of the first class were also awarded to Messrs. James Veitch & Sons for Croton Macafeeanus, one of the largest-leaved and strongest-growing sorts yet introduced; the leaves are about a foot long and 4 inches broad, with a bright green ground colour, and large blotches of yellow, the young stems being also of the latter colour. Also for Phyllanthus roseus pictus, a very prettily variegated plant, resembling P. nivosus in babit, and which, like the Croton, comes from the South Sea Islands. The same firm also received a vote of thanks for a plant of Dendrobium densiflorum superbum, with one magnificent spike of flowers. F. Whitbourn, Esq (gr., Mr. Douglas), was awarded a First-class Certificate for Auricula Alexander Meiklejohn (Kay), a show variety, and one of the finest of the grey-edged section; the ground colour is nearly black, and the paste dense white—a very fine variety. It was 1st in the single grey-edged class at Manchester last year. Mr. Turner showed a few alpine Auriculas, and received the highest awards for Bessy Ray (Turner), very dark shaded crimson, and fine bright gold centre; and Slough Rival, a fine smooth flower with a gold centre, edged with purple and shaded with violet; this is a beautiful flower, but a little too weak in the flower-stalks. Mr. R. Dean, Ealing, received a vote of thanks for a nice batch of seedling varieties of Primula cortusoides amœna lilacina, in which were one or two desirable new forms; these were accompanied by a plant of the old double yellow Auricula. A Cultural Commendation was voted to J. T. Peacock, Esq., Sudbury House, Hammersmith (Mr. Croucher, gr.), for the singular Euphorbiaceous Xylophylla falcata, which produces a profusion of minute rosy flowers at the edges of the leaf-like branches. Sir George Macleay, Bendell Court, Bletchingly, received a vote of thanks for a small group of Roman terrestrial Orchids; and Sir H. Peek, Bart., M.P. (Mr. Ollerhead, gr.), for a small group of fine Orchids. Sir Trevor Lawrence, M.P., showed a plant of Calanthe vestita ignea oculata with a spike of twenty-two flowers, noticed by Professor Reichenbach in another column. W. Terry, Esq., Peterborough House, Fulham (Mr. Roberts, gr.), received a vote of thanks for two plants of Dendrobium chrysotoxum, the one with eighteen, the other with ten good spikes.

Natural History.

SQUIRRELS.—In the charming account given of those pets at p. 473 of the *Gardeners' Chronicle* I do not find it mentioned that they are partial to bird's eggs. Many persons bring this charge against the squirrel, and an old friend of mine (a good naturalist, and one of the best authorities on all matters connected with sport), says in his *Life and Recollections* that he has actually caught squirrels near his place in Dorsetshire in the act of dragging off some young Pochard ducklings. He had up to that period protected them, but his keepers have now orders to shoot them—a thing which sportsmen will probably approve of, but I do not, as I love to watch them in their wild state. There used to be a great many in the woods near Bournemouth, and I had one given me a few years ago by the gentleman alluded to above (the Honourable G. F. Berkeley), which I succeeded in taming. *Helen E. Watney.*

Obituary.

ON the 12th inst., at the Holt, Farnham, Surrey, GILES MUNBY, aged 63. The gentleman whose death we record was a keen botanist and an ardent horticulturist. Having resided for many years as a colonist in Algeria, Mr. Munby possessed an extensive knowledge of the flora, and compiled a list of the plants of that country, drawn up in French, and a "Catalogus" in Latin, including 2964 species, which has reached a second edition. Mr. Munby's knowledge was not only extensive but critical, and was not confined to herbarium specimens but was checked by his experience as a cultivator. We believe that in Algeria he cultivated many of his favourite plants, and at Alice Holt he continued the practice, and brought from time to time before the Scientific Committee of the Royal Horticultural Society, of which he was a member, numerous specimens of the flora of Algeria, cultivated by him in Surrey. Mr. Munby was an occasional correspondent of this journal, and one of his most noteworthy contributions was that in which he related the extraordinary persistence of vitality in the bulbs of Narcissus (§ Corbularia) monophyllus.

—— From the *Basler Nachrichten* we learn that Dr. HEINRICH BETA, a well known popular writer on scientific subjects, died at Berlin on the last day of March, after a long and painful illness. The deceased took a prominent part in the rising in Berlin in 1848, and was obliged to flee the country with his countryman Freiligrath, in order to escape the consequences of this act of treason. He found an asylum in London, but he spent many years of hardship and privation before he succeeded in making a name and gaining a comfortable livelihood by his pen. Here he made himself well acquainted with English literature, and eventually became one of the most popular contributors to the *Gartenlaube, Ueber Land und Meer, Illustrirte Zeitung*, &c.; and he was engaged to the last upon the popular scientific works that have made his name widely known and appreciated in Germany. But soon after his return to his native land in 1868, when there was a general amnesty of political offenders, he lost the use of his hands and feet, and it was his wife who acted as his amanuensis in preparing his numerous works for the publishers.

—— We have this week the melancholy task of announcing the death of RICHARD HEADLY, Esq., of Stapleford House, near Cambridge, at the ripe age of 81, which sad event took place on the 14th inst. Mr. Headly, who was a Fellow of the Royal Horticultural Society, has long been known in the world of horticulture and floriculture, and was, we believe, one of the original members of the Floral Committee—a body from which he was compelled to dissociate himself, after a short period, on account of his distant residence and increasing infirmity. As an amateur grower of Tulips, Auriculas, and other florists' flowers he occupied a prominent position. Among Auriculas, the following varieties raised by him are found in the current catalogues of the leading florists:—Alderman Wisbey and Conductor, green-edged; George Lightbody, Alderman Charles Brown, Stapleford Hero, Hilda, Splendour, Superb, and William Linton, grey-edged; and Cantab, Petronella, and Royal Purple, selfs. Of Carnations, we are indebted to him for Rose of Castile and Rose of Stapleford, rose flakes; and of Picotees, Chancellor, King James, Mrs. Brown, and Prince Albert, red-edged. Mr. Headly was in his younger days fond of sport as well as of flowers, and possessed all the geniality and hospitality of a thorough English gentleman. His collections, which are very extensive, had already been announced for sale at an early date, before the news of his decease came to hand. As at present arranged, his collections, stages, show-boxes, &c., will be sold by auction early in May, unless previously disposed of by private treaty.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, APRIL 19, 1876.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr	Barometer. Departure from Average of 16 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Dew Point.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
April	In.	In	°	°	°	°	°	°			In.
13	29.31	−0.49	40.3	30.1	10.2	34.1	−12.0	32.0	91	S.W.; WSW.; N.W.	0.19
14	29.75	0.00	44.3	32.0	12.3	36.8	−9.5	33.7	89	N.E.; E.N.E.	0.36
15	30.06	+0.32	56.2	33.4	22.8	44.2	−2.3	35.1	70	E.N.E.; E.	0.00
16	29.84	+0.09	53.5	35.2	18.3	43.0	−3.6	35.3	75	N.E.; N.N.E.	0.00
17	29.31	−0.41	49.6	30.8	9.8	43.6	−3.2	41.4	92	S.; S.S.W.	0.00
18	28.94	−0.82	59.7	39.1	20.6	47.0	0.0	42.8	86	S.S.E.; S.	0.02
19	28.80	−0.95	55.8	41.9	13.9	46.8	−0.4	44.5	92	S.; S.S.W.	0.20
Mean	29.44	−0.31	51.3	35.9	15.4	42.2	−4.4	37.8	85	N.E.; S.	sum 0.77

April 13.—A dull cloudy day. Occasional hail and snow. Cold day. Wintry.
— 14.—Dull, with frequent snow till 1 P.M. Fine afterwards. Cold. Depth of snow at 6 A.M. = 1½ inch.
— 15.—A fine cloudless day. Cool breeze.
— 16.—A fine day, light clouds. Windy.
— 17.—Overcast, dull day. Very thin rain at times.
— 18.—A dull showery day. Fine at times.
— †19.—A cloudy day. Frequent heavy showers of rain.

—— During the week ending Saturday, April 15, in the vicinity of London the reading of the barometer at the level of the sea decreased from 29.91 inches at the beginning of the week to 29.24 inches by the afternoon of the 10th, increased to 29.93 inches by the night of the 12th, decreased to 29.50 inches by the afternoon of the 13th, and increased to 30.26 inches by the end of the week. The mean reading for the week was 29.79 inches, being 0.47 inch below that of the preceding week, and 0.13 inch below the average.

The highest temperatures of the air observed by day varied from 60½° on the 9th to 40¼° on the 13th; the mean value for the week was 50⅛°. The lowest temperatures of the air observed by night ranged from 30° on the 12th and 13th to 46½° on the 9th; the mean weekly value was 34½°. The mean daily range of temperature in the week was 16°; the greatest range in the day was 22¾°, on the 15th, and the least 10¼°, on the 13th. The mean daily temperatures of the air and the departures from their respective averages were as follows:—9th, 52°.7, + 7°.1; 10th, 44°.2, − 1°.5; 11th, 40°.1, − 5°.7; 12th, 35°.7 − 10°.2; 13th, 34°.1, − 12°; 14th, 36°.8, − 9°.5; 15th, 44°.2, − 2°.3. The mean temperature of the air for the week was 41°.1, being 4°.9 below the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo placed in sun's rays, were 107° on the 15th; on the 13th it did not rise above 55°.

The lowest reading of a thermometer on grass with its bulb exposed to the sky, was 26¾° on the 12th; the mean for the seven low readings was 32°.

The direction of the wind was variable, and its strength brisk. The weather during the week was dull and cold, with the exception of the 9th and 15th, which days were fine. The week was remarkable for snowstorms, which prevailed on the 11th, 12th, 13th, and 14th, and during these four days it was very cold and wintry. Whilst snow was falling on the afternoon of the 12th, frequent peals of thunder were heard, and a few flashes of lightning were seen. A strong gale of wind prevailed on the 10th. Rain or melted snow was measured on three days in the week to the amount of 0.89 inch.

In England the highest temperatures of the air observed by day were 70° at Leeds, and 69½° at Nottingham; at Liverpool the highest temperature in the week was 56°; the mean value from all stations was 60¾°. The lowest temperatures of the air observed by night were 26° at Sunderland, and 26°.9 at Nottingham, at Truro the lowest temperature in the week was 34°; and at Plymouth 33°; the general mean from all stations was 29½°. The range of temperature in the week was the greatest at Nottingham, 42½°, and the least at Liverpool, 24½°; the mean range of temperature from all stations was 31¼°. The mean of the seven high day temperatures was the largest at Manchester, 53°, and the smallest at Liverpool, 46¾°; the mean from all stations was 49½°. The mean of the seven low night temperatures was the smallest at Eccles and Sunderland, both 33½°, and the largest at Truro and Plymouth, 39°; the mean value from all stations was 35¼°. The mean daily range of temperature in the week was the greatest at Manchester, 19¼°, and the least at Brighton, 11¾; the mean daily range from all stations was 14¼°.

The mean temperature of the air for the week was 41°, being 2¾° lower than the value for the corresponding week in 1875. The highest was 44° at Truro and Plymouth, and the lowest 39¼° at Liverpool.

Rain or snow fell on five and six days in the week at most places. The amounts measured varied from an inch and nine-tenths at Leicester, an inch and eight-tenths at Manchester, to seven-tenths of an inch at Hull and Newcastle-on-Tyne. The general average fall over the country was an inch and one-tenth.

The weather during the week was dull, though at times fine. Frequent snow and hail fell from the 11th to the 14th. There was a gale of wind on the 11th. At Leicester the observer says:—"From the several measurements made of the snow at 10 A.M. on the 13th the average depth was 8 inches."

At Rugby, it is said, the ground was covered with snow for 4 miles round to the depth of 12 to 18 inches. All over the country snowstorms have been more or less prevalent, and much interruption has been occasioned to telegraphic communication in consequence.

In Scotland the highest temperatures of the air ranged from 61° at Dundee to 51¾° at Glasgow; the general average value was 56½°. The lowest temperatures of the air varied from 24° at Paisley to 27° at Leith; the mean average value was 25°. The range of temperature in the week was 31½°. The mean temperature of the air for the week was 40½°, being 7° lower than the value for the corresponding week in 1875. The highest occurred at Paisley, 46½° (this value seems to be too high), the next in order was 39¾°, at Dundee, and the lowest at Aberdeen and Leith, both 38¾°.

Rain or snow was measured to the amount of an inch nearly at Leith; at Glasgow, Dundee, and Aberdeen half-an-inch nearly fell, but at Paisley none was measured; the average fall over the country was half-an-inch.

At Dublin the highest temperature of the air was 60°; the lowest, 22½°; the range, 37½°; the mean, 39¼°; and the fall of rain, 1.04 inch.

JAMES GLAISHER.

Barometer reading at 9 A.M. = 29.073 in., noon = 29.016, 1 P.M. = 28.998, 2 P.M. = 28.952, 3 P.M. = 28.927, 4.30 P.M. = 28.900, midnight = 28.859.

† Barometer reading at 9 A.M. = 28.751 in., 10 A.M. = 28.743, 11 A.M. = 28.735, noon = 28.746, 1 P.M. = 28.753, 2 P.M. = 28.759, 3 P.M. = 28.759, midnight = 28.941.

Answers to Correspondents.

AZALEAS: *W. Sharpe.* There are so many finer varieties in cultivation, that those you send are scarcely worth propagating. We think No. 4 is the most promising.

BEES: *F. A.* You have no cause of action against your neighbour. Ligurian bees are not more aggressive than English bees. Your stocks were doubtless weak or queenless, and so their stores became the natural plunder of their stronger neighbours. Your remedy for the future is to keep none but strong colonies, which, whether English or Ligurian, will be able to hold their own.

CINERARIAS: If "Florist" will send his address, we will reply to his question by post.

FASCIATED ASH: *M. K.* By no means uncommon. The Ash and the Asparagus are the plants most commonly affected in our experience. Sedum cristatum is another case. An unusual number of buds are produced, and these, instead of separating, remain attached to each other for a certain distance.

FUNGUS: *A. Fairall.* Morchella esculenta—the common Morel.

HOLLY LEAVES BLOTCHED: *E. T.* The leaves are blotched by the larvæ of Phytomyza Ilicis, a small two-winged fly. We know of no other remedy than picking off the leaves and burning them.

HYBRIDISING: *W. J., Paisley.* It is not at all likely that all the seeds in the pod are fertilised artificially, though it happens in Nature.

INSECTS: *W. B.* Your spider ‼ is a moderate sized exotic species of Longicorn beetle (about an inch long), which has been reared in the stem of one of your foreign plants, probably a Vanda or Phalænopsis, and then gnawed its way out on assuming the perfect state. *J. O. W.*

Names of Plants: *A Subscriber.* 1, Picea Pinsapo; 2, Pinus excelsa; 3, P. Massoniana.—*R. E. E.* Kerria japonica.—*Novice.* We cannot undertake to name florists' flowers.—*Ignoramus.* Polygala Chamæbuxus, Switzerland.—*A. Boyle.* Omphalodes verna. Anemone hortensis varies in colour from scarlet to lilac.—*Amateur, Windsor.* 1, Coleonema alba; 2, Impatiens (specimen not good enough to name); 3, Goodyera discolor; 4, Cologyne flaccida; 6, Cypripedium venustum.—*J. M.* Primula verticillata, var. sinensis. — *W. M., Castlecraig.* 1, Primula erosa; 2, P. japonica; 3, Narcissus minor: 4, Erica cerinthoides; 5, Selaginella flabellata; 6, Phytolacca decandra.—*J. H.* 1, Acacia pulchella; 2, Acacia armata, var.; 3, Cytisus racemosus; 4, Polygala Dalmaisiana; 5, Correa speciosa, var. — *Amateur.* Your plants appear to be: 1, Gnaphalium arenarium; 2, Saxifraga ceratophylla; 3, Veratrum nigrum (but, not being in flower, we cannot be certain about them); 4, appears to be Daphne indica.—*F. G. Society.* 1, Rhododendron Nuttallii; 2, Begonia, not recognised; 3, Salvia gesneriflora; 4, Asplenium Fabianum.—*C. F.* It is the plant known as Skimmia fragrantissima, which is, we believe, the male form of S. oblata.—*Amabiliter.* Why send such a wretched scrap? It appears to be the variegated form of Weigelia rosea.

Otiorhynchus: *W. T.* You can do nothing with the grubs without injuring the Vine borders. You may catch the beetles, however, by spreading a sheet under the Vines at night, and sharply tapping the stems, when the insects drop off.

Pyrethrum: *J. Clarke.* Whether yours is better than the Golden Feather or not can only be ascertained by growing them together in the open ground.

Ranunculus: *G. G.* Tuberous roots; certainly not bulbs.

Royal Aquarium, Westminster. In your notice of the show held at the Royal Aquarium on Wednesday, April 12, you have forgotten to state that I was awarded 1st prize for six pots of Violets (Neapolitans) and 2d for fifty Strawberries, being the only classes in which I showed. *H. W. Ward, Longford Castle, Salisbury.* [We gladly insert our correspondent's note, but would remark that we cannot undertake to notice or comment upon everything shown at exhibitions. Eds.]

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "Editors," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. *Letters relating to Advertisements, or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

☞ Foreign Subscribers sending Post Office Orders, payable at the post-office, King Street, Covent Garden, London, are requested to be good enough to write to the Publisher, at the office of this paper, 41, Wellington Street, Covent Garden, at the same time, to inform him of the fact.

Catalogues Received:—Mr. W. Paul (Crossflat and Greenlaw Nurseries, Paisley), Catalogue of Florists' Flowers, &c.—Messrs. W. Paul & Son (Waltham Cross, London), Catalogue of New Roses, Geraniums, Phloxes, &c.—Mr. C. Turner (The Royal Nurseries, Slough), Spring Catalogue of Plants, &c.

Communications Received.—H. J. V.—G. S. (thanks).—W.P. — Much Hadham. — North Durham. — D. T. F. — J. D. H.—J. T. B.—J. S.—J. C. N.—E. D.

DIED, April 14, at Stapleford House, near Cambridge, Richard Headly, Esq., aged 81.

*** IMPORTANT NOTICE.—*The* Agricultural Gazette *is now* Published *on* Mondays, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, April 20.

We have no alterations to note this week, trade being quite at a standstill. *Jas. Webber, Wholesale Apple Market.*

Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz.	4 0	..	Lettuces, per score..	2 0	..
— Jerusalem, p. lb.	0 3	..	Mint, green, bunch	0 6	1 0
Asparagus (English), per bundle	.. 6 0	10 0	Mushrooms, per pott.	1 0	2 0
— French ..	.. 6 0	..	Onions, young, bun.	0 4	0 6
Beans, French, p. 100	1 3	2 6	Parsley, per bunch..	0 4	..
— Longpod, basket	5 0	..	Peas, green, per lb...	1 0	..
Beet, per doz. ..	1 0	2 0	Potatos (new), baskt.	1 0	..
Cabbages, per doz. ..	1 0	2 0	— new Jersey, p. lb.	0 6	1 6
Carrots, per bunch..	0 6	..	— Sweet, per lb. ..	0 6	..
— new, do. ..	2 6	..	Radishes, per bunch.	0 1	0 3
Cauliflowers, p. doz.	2 0	4 0	— Spanish, doz. ..	1 0	..
Celery, per bundle ..	1 6	2 0	— French	0 6	..
Cucumbers, each ..	0 6	2 0	Rhubarb, per bundle	0 6	1 0
Endive, per doz. ..	1 0	2 0	Salsafy, per bundle..	0 9	..
— Batavian, p. doz.	2 0	3 0	Seakale, per punnet	2 0	3 0
Herbs, per bunch ..	0 2	0 4	Shallots, per lb. ..	0 3	..
Horse Radish, p. bun.	3 0	5 0	Spinach, per bushel	4 0	..
Leeks, per bunch ..	0 2	0 4	Turnips, per bundle	0 4	..
			— New French, do.	2 0	..

Potatos — Rocks, 105s. to 110s.; Regents, 120s. to 170s.; Flukes, 130s. to 160s.; Victorias, 120s. to 160s. per ton.

Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1 6	5 6	Oranges, per 100	.. 6	0–12 0
Cobs and Filbts., lb.	0 9	1 0	Pears, per doz.	.. 3	0–10 0
Grapes, per lb.	.. 6	0–18 0	Pine-apples, p. lb.	.. 1	6– 4 0
Lemons, per 100	.. 6	0–10 0	Strawberries, per oz.	0 3	1 0
Melons, each	.. 0	0– 0 0			

Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per doz.	..24	0–60 0	Genista, do...	.. 9	0–24 0
Begonias, per doz.	.. 6	0–12 0	Heaths, in var., doz.	12	0–30 0
Bouvardias, do.	..12	0–18 0	Hyacinths, per doz.	9	0–18 0
Cineraria, per doz.	.. 6	0–18 0	Lily of Valley, doz.	12	0–30 0
Cyclamen, do.	.. 9	0–18 0	Mignonette, do.	.. 6	0– 9 0
Cyperus, do...	.. 6	0–12 0	Myrtles, do...	.. 3	0– 9 0
Deutzia, do...	.. 6	0–18 0	Pelargoniums, scarlet, per doz.	.. ..	4 0– 9 0
Dielytra, do.	..12	0–24 0	— in variety, doz.	18	0–36 0
Dracæna terminalis	30	0–60 0	Primula sinensis, do.	6	0–12 0
— viridis, per doz.	18	0–24 0	Roses, Fairy, do.	.. 9	0–15 0
Epacris, do...	..12	0–18 0	— various, do.	..18	0–30 0
Euphorbia jacquiniæfolia, per doz.	.. 9	0–18 0	Solanums, do.	.. 6	0–24 0
Ficus elastica	.. 2	6–15 0	Tulips, do. ..	.. 8	0–12 0
Fuchsia, per doz.	.. 9	0–18 0	Veronica, do.	.. 4	0–12 0

Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	4 0	12 0	Narcissus, per dozen	1 0	3 0
Azaleas, 12 sprays ..	0 6	2 0	Nemophila, 12 bun.	4 0	6 0
Camellias	1 6	12 0	Pelargoniums, 12 spr.	1 0	3 0
Carnations, 12 blooms	2 0	4 0	— Zonal do. ..	0 6	1 6
Cineraria, per bunch	1 0	2 0	Pinks, white, p. doz.	2 0	4 0
Cyclamen, 12 blooms	0 3	0 6	Primula, dbl., p. bun.	1 0	1 6
Eucharis, per doz. ..	6 0	12 0	Rhododend., 12 hds.	1 6	6 0
Euphorbia, 12 spr. ..	4 0	9 0	Hyacinths, 12 sprays	1 0	3 0
Gardenia, per doz. ..	4 0	12 0	Roses, indoor, p. doz.	1 6	10 0
Heliotropes, 12 spr.	0 6	1 0	Spiræa, 12 sprays ..	1 0	4 0
Lily of Valley, 12 spr.	1 0	4 0	Stephanotis, 12 sprays	6 0	18 0
Mignonette, 12 bun.	6 0	9 0	Violets, 12 bunches..	1 0	4 0

SEEDS.

London: *April* 19. — Owing to the Corn Exchange having been closed on Good Friday and Easter Monday the market to-day was well attended, and a fair seasonable business was done. The recent very unfavourable weather has for the moment lessened the consumptive demand for farm seeds, and it is now certain that a good deal of sowing must take place later than usual. In consequence of the present high prices the country trade are naturally operating with great caution, and appear determined before making fresh purchases to run their stocks very low, or even quite out. A short spell of fine weather would probably finish up the season with considerable activity. Clover seed, both red and white, is unaltered in value. For Alsike there is a fair demand at full rates. Trefoils, being in short supply and strong request, are exceedingly firm. For foreign Italian there is a brisk inquiry, but Rye-grasses experience a slow sale. Spring Tares tend in favour of buyers, and although there are very few left, the supply exceeds the demand. Mustard and Rape seed maintained the firm position previously noted. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Business recommenced at Mark Lane on Wednesday very quietly, and during the day there was little or no improvement. The supply of English Wheat was very short, but that of foreign was rather large, and the value of the latter had a tendency in buyers' favour. Barley was dull, more especially malting, and sales in malt were difficult to close. Oats, of which there was a fair supply, were purchased sparingly, and prices were about the same as last week. Maize was steady, and previous rates were asked for Beans and Peas. The flour market was dull.—Average prices of corn for the week ending April 15:—Wheat, 45*s.* 1*d.*; Barley, 33*s.* 7*d.*; Oats, 25*s.* 8*d.* For the corresponding week last year:—Wheat, 43*s.* 4*d.*; Barley, 40*s.* 6*d.*; Oats, 30*s.*

CATTLE.

At the Metropolitan Market on Monday the number of beasts was small, and trade brisk, consequently choice qualities were quickly disposed of at a considerable advance. The supply of sheep was also small, and was very readily sold at high rates. A few choice descriptions reached fully 7*s.* per stone. Calves were also scarce and dear. The market in every respect presented quite a holiday appearance. Quotations:—Beasts, 4*s.* 8*d.* to 5*s.* 4*d.*, and 5*s.* 10*d.* to 6*s.* 4*d.*; calves, 5*s.* 8*d.* to 7*s.*; sheep, 5*s.* to 5*s.* 10*d.*, and 6*s.* 2*d.* to 6*s.* 8*d.*; lambs, 8*s.* to 9*s.*; pigs, 4*s.* 4*d.* to 5*s.* 4*d.*—On Thursday there was a larger supply of beasts, and consequently a reduction in prices; prime animals were in demand, and a clearance was effected. Trade was active for sheep and lambs, at scarcely any alteration on Monday's rates. Calves were scarce and dear.

HAY.

The Whitechapel report of Tuesday states that there was a moderate supply of fodder, the demand for which was fair at the following rates:—Prime meadow hay, 90*s.* to 130*s.*; inferior, 55*s.* to 75*s.*; prime Clover, 100*s.* to 150*s.*; inferior, 85*s.* to 95*s.*; and straw, 35*s.* to 50*s.* per load.—On Thursday the markets were quiet, with moderate supplies. Quotations:—Clover, best, 120*s.* to 150*s.*; inferior, 85*s.* to 95*s.* Hay, best, 112*s.* to 135*s.*; inferior, 55*s.* to 75*s.*; straw, 36*s.* to 50*s.* per load.—Cumberland Market quotations:—Superior meadow Hay, 138*s.* to 147*s.*; inferior, 105*s.* to 120*s.*; superior Clover, 150*s.* to 160*s.*; inferior, 120*s.* to 130*s.*; and straw, 48*s.* to 52*s.* per load.

COALS.

There was a good demand for house coals at market on Wednesday, and the price advanced 1*s.* per ton.

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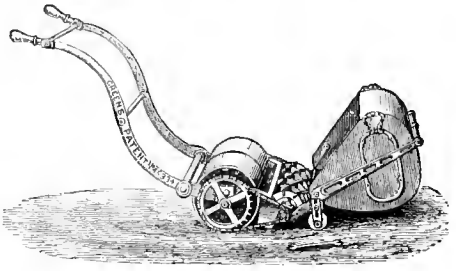

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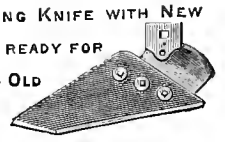

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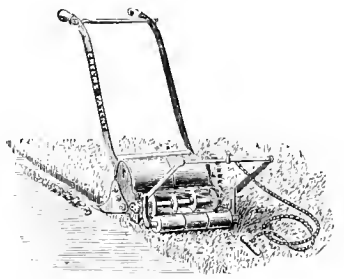

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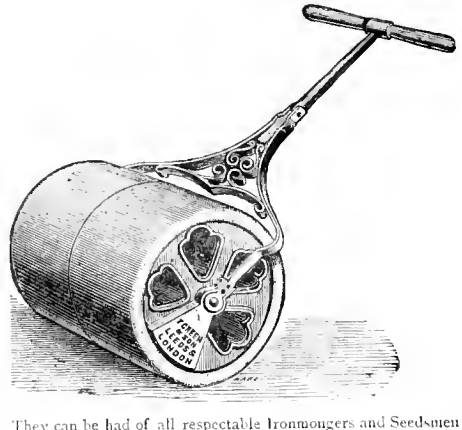

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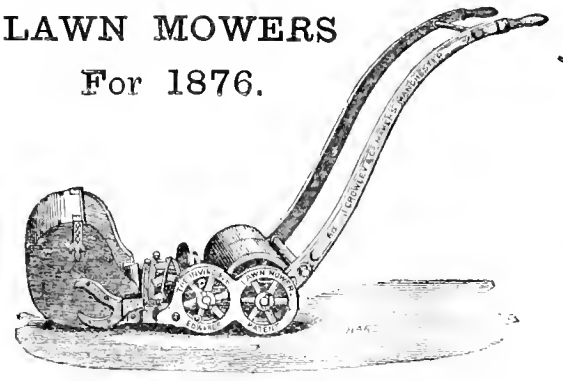

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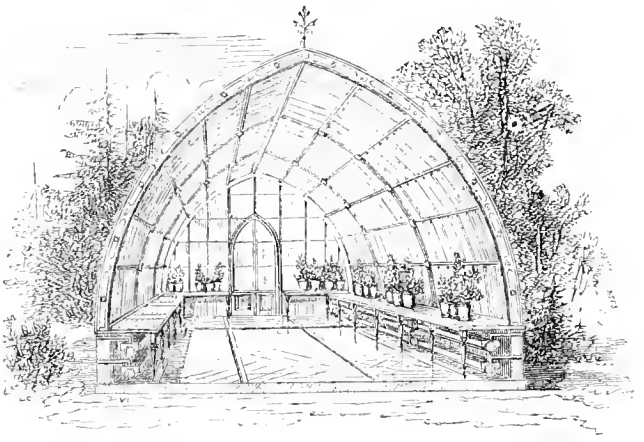

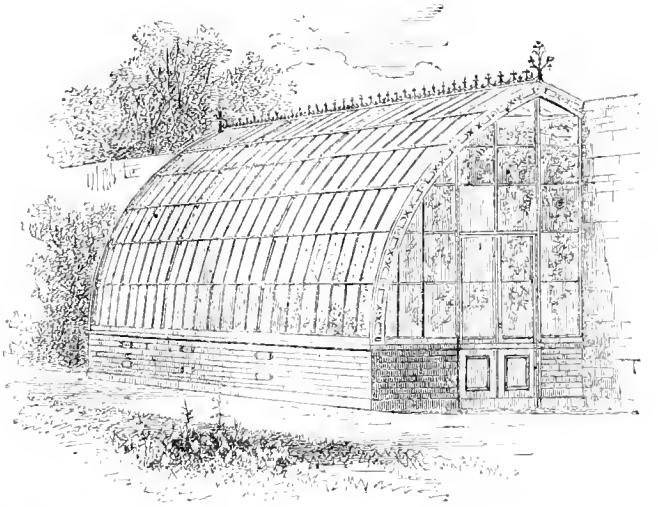

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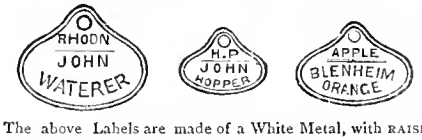

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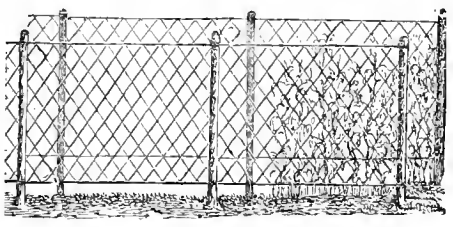

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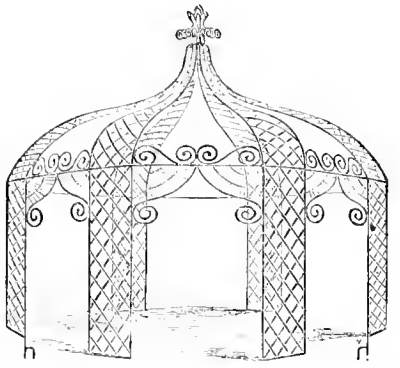

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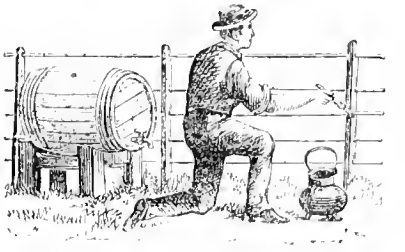

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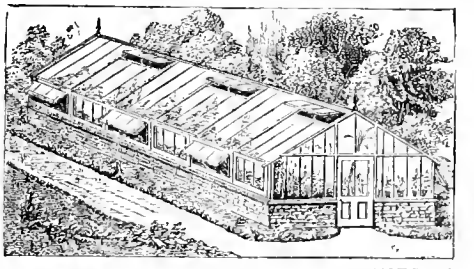

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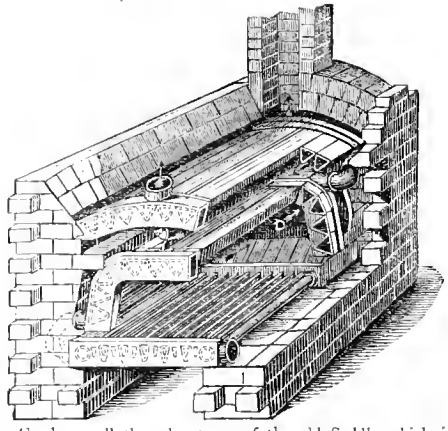

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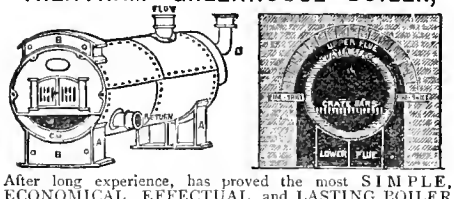

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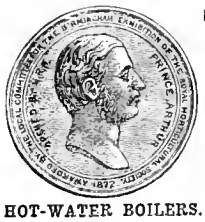

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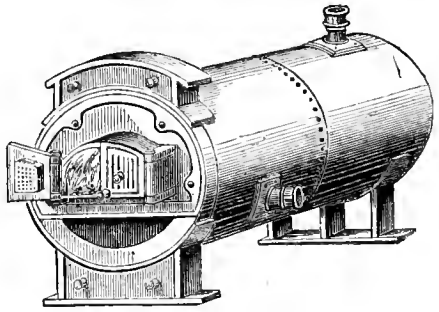

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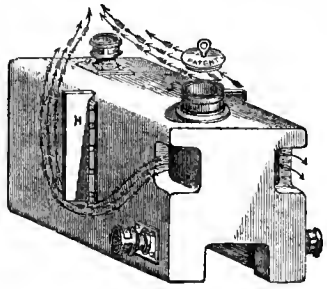

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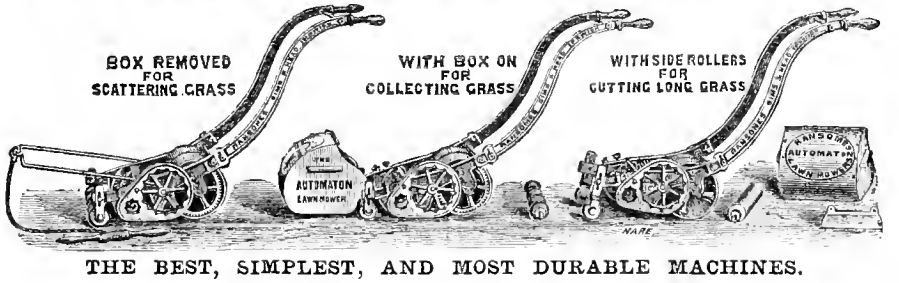

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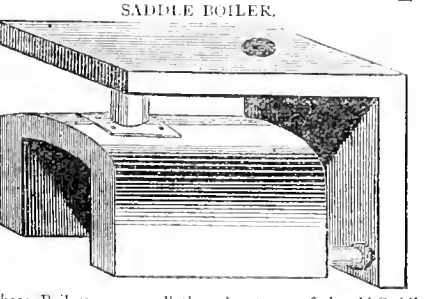

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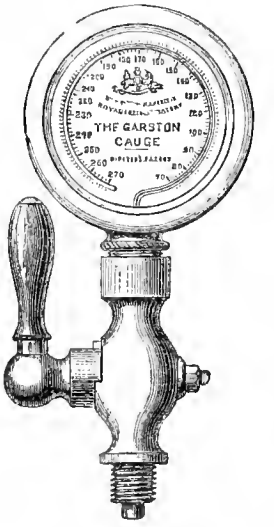

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JOURNEYMAN, in the Houses, in a Nobleman's or Gentleman's Establishment, where Gardening is well carried out.—Nine years' experience. First-class references.—S. W., 22, Grovedale Road, Upper Holloway, London, N.

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GRATEFUL—COMFORTING.
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This celebrated and most delicious old mellow spirit is the very CREAM of IRISH WHISKIES, in quality unrivalled, perfectly pure, and more wholesome than the finest Cognac Brandy. Note the Red Seal, Pink Label, and Cork branded "Kinahan's LL" Whisky.
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The best remedy for ACIDITY of the STOMACH, HEARTBURN, HEADACHE, GOUT, and INDIGESTION; and the safest aperient for delicate Constitutions, Ladies, Children, and Infants.
DINNEFORD AND CO.,
172, New Bond Street, London, and all Chemists.

PURE AERATED WATERS.
ELLIS'S RUTHIN WATERS.
Crystal Springs—Soda, Potass, Seltzer, Lemonade, Lithia, And for GOUT, Lithia and Potass.
Corks Branded "R. ELLIS AND SON, RUTHIN," and every label bears their trade mark. Sold everywhere, and Wholesale of Ellis & Son, Ruthin, N. Wales. London Agents: W. BEST AND SONS, Henrietta St., Cavendish Sq.

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CALVERT'S CARBOLIC ACID

FLUID, POWDER, AND SOAPS.

Diplôme d'Excellence, Amsterdam; Diplôme d'Honneur, Santiago, Chili; Gold and Silver Medals, Havre, 1868.
Silver Medal, Paris Exhibition, 1867; Silver Medal, 1st Class, Naples, 1871.
Juror: Vienna, 1873.

CALVERT'S CARBOLIC ACID

Is a highly concentrated and purified product, of guaranteed strength, and possessing two very valuable properties, viz.,—It at once arrests all kinds of putrefactive changes, and annihilates *all the lower forms of Insect or Vegetable Life.* In tropical and warm climates the Acid or Powder will prove valuable for arresting the decay of Animal or Vegetable Matter, as well as for preventing the encroachments into Dwellings, Gardens, &c., of Insects and Reptiles, all of which dread the odour of Carbolic Acid, that will emanate freely when the Powder or diluted Acid is sprinkled about the infested places.

Below we give extract copies from a few reports, and we shall be pleased to reply to any special queries respecting the most convenient mode of using our preparations, some of which would doubtless be of great service in destroying Insect Life on Fruit and other Trees.

"Valle Menier, Nicaragua, Sept. 3, 1869.

"My dear Doctor,—At commencement of 1867 cholera spread rapidly in this country, and decimated, during fifteen months, all the 'pueblos,' one after another.

"I wrote Mr. Menier, who sent me 600 bottles of Liquid Carbolic Acid from England (Calvert's No. 5), with which I caused all corridors and interiors of our houses to be watered every day (in proportion of a tumblerful of acid in a garden-can of water), and we have the happiness to be without a single case amongst our population, which is never less than 300; whilst at Nandaime, an Indian village, half a league from Valle Menier, several inhabitants were each day interred.

"I do not know if I ought to attribute this result to the properties of Carbolic Acid, which you praise so much; but I am sure that the period of my watering coincides with the disappearance of interniittent fever, that dreadful scourge which attacked us four or five times yearly; and all fleas, chiques (a species of gnat), flies, &c. (prolific vermin, which multiply indefinitely under our beautiful sun), have disappeared completely from here.

"One becomes quickly accustomed to the odour of this acid, which, after all, is an agreeable one.

"In agriculture Carbolic Acid renders me great service, by driving away a particular species of ant which locates itself in the porous wood of the Chocolate plant after the pruning of the trees.

"I mix a small quantity with ochre ground in oil, and apply this odorous colour with a small brush; the wound thus treated cicatrises healthily and quickly.

"The odour of the acid drives away the ants, and the colour permits the water to pass off, which would otherwise rot the tree and leave a hole in it.

(Signed) "A. SCHIFFMAN.

"To Dr. Quesneville,
Editor, *Moniteur Scientifique*, Paris."

From W. SOWERBY, Esq., *Royal Botanic Gardens, Regent's Park, London.*

"On experimenting with many preparations for killing vegetation and preventing its growth on gravel walks I found that Carbolic Acid (very dilute solutions) was the best, retaining its effect longer than any other."

From Messrs. BRIGGS & Co., *Flax Spinners, Leeds.*

"Our Mr. Briggs desires us to inform you that with the assistance of your preparations his Pinery is now cleared of the Mealy-Bug, and the Pines now look in a healthy condition."

From "Field" Newspaper, Nov. 16, 1872.

"There is no question of its (Carbolic Acid) power to arrest decomposition of organic substances and to destroy all the lower forms of plant and animal life."

From the North British Railway Company's Store Manager.

"I have much pleasure in testifying to the efficacy of your Carbolic Acid Powder as a disinfectant, and for destroying bugs and other vermin. One of our Warehouses in Leith was infested with vermin some time ago, and three applications of the powder entirely succeeded in removing the cause of annoyance."

Copy of Letter from the Medical Officer of Health, Port of Spain, Trinidad, June 20, 1870.

"Gentlemen,—I have the honour to acknowledge receipt of your note. I am well acquainted with your Carbolic Acid, and have constantly employed it myself, and recommended its employment by others, in cases of epidemic or contagious diseases, and as a deodoriser. During my visits of inspection, in performance of my duties as Medical Officer of Health for Trinidad, I made a point of carrying about with me a small quantity of the Carbolic Acid, which I inhaled when inspecting the filthy holes I was obliged to visit.

"I always order it to be applied in sufficient quantity to keep up a constant but slight odour of the acid.

"I have used your Soap; it kills Fleas, Chigoes, &c., very effectually.—I am, gentlemen, your obedient servant,

(Signed) "R. H. BAKEWELL, M.D.

"Messrs. Calvert & Co."

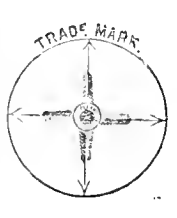
Dr. A. CARPENTER, Dr. C. ROBERTS, Professor GARDNER and others, in writing on "Potato Disease" advise that seed Potatos should be dipped in weak solutions of Carbolic Acid No 5) to destroy Spores and Mycelium before planting.

No. 5 Concentrated Fluid Carbolic Acid,
Sold in 1 lb. bottles, at 1*s.* 6*d.*; ½ lb. 1*s.*; in bulk, 6*s.* per gallon; and

Carbolic Acid 15% Powder,
Sold in ½, 1, and 2 lb. tins, at 6*d.*, 1*s.*, and 1*s.* 6*d.* each; in bulk, 17*s.* 6*d.* per cwt.,

Will be probably the most suitable of our Preparations for use in Gardens, Orchards, or Vineries.

Affixed on all Products issued by F. C. C. & Co.,



for guarantee of the strength and quality.

The Soaps are valuable as preventives of contagion, for destroying unpleasant odour from the skin, keeping it healthy, for washing infected clothing, or floors and walls of rooms, or any animals infested with insects; the Domestic and Soft Soaps being prepared especially for last named uses. There is reason to believe that the Soft Soap could be usefully applied in weak solutions to destroy insects on plants.

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Medical soap, 20% acid, 1*s.* tablets.
Domestic soap, 8% acid, 6*d.* 1 lb. bars.
Soft soap, 10% acid, 1*s.* 1 lb. bottles, and in bulk, 45*s.* per cwt.
Dog soap, 8% acid, 6*d.* packets.
Carbolic Tooth Powder, 1*s.* boxes.

MAKERS: F. C. CALVERT & CO., BRADFORD, MANCHESTER,

The Original Manufacturers of CARBOLIC ACID for Surgical, Medicinal, and Disinfecting Purposes,
CARBOLIC ACID SOAPS, CARBOLIC ACID SHEEP-DIPPING FLUID, and CARBOLIC ACID POWDER;
And Sole Purveyors of these products for Her Majesty's Army and Navy, Emigrant and Passenger Ships, Convict Prisons, Indian Government, Principal British Railways, &c.

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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE.—SCIENTIFIC, FRUIT, and FLORAL COMMITTEES' MEETINGS, on WEDNESDAY next, May 3, at 11 o'Clock. GENERAL MEETING at Three. Admission, One Shilling.

ROYAL BOTANIC SOCIETY, Regent's Park, S.W.
The Course of EIGHT BOTANICAL LECTURES by Prof. BENTLEY, will Commence on FRIDAY, May 12, at 4 o'Clock precisely, and will be continued every FRIDAY at the same hour.
The Lectures will be delivered in the Museum in the Gardens, and are Free to Fellows of the Society and their friends.

ROYAL BOTANIC SOCIETY, Regent's Park, S.W.
The EXHIBITION of Large-flowered CLEMATIS will be Opened on MONDAY, May 1.
Admission as on ordinary days, and by the Spring Exhibition tickets, 2s. 6d. each.
These plants are from the nursery of G. Jackman & Son, Woking, Surrey.

ROYAL AQUARIUM.—The Second Grand FLOWER and FRUIT SHOWS will take place here on TUESDAY, May 16, and WEDNESDAY, May 17. All communications to be addressed to
Mr. WILLS, Superintendent of Floral Department, Royal Aquarium.

ROYAL FLORA SOCIETY of BRUSSELS.
The GRAND INTERNATIONAL HORTICULTURAL EXHIBITION will be held at Brussels from APRIL 30 to MAY 6.
Accredited Agents: Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

FROME ROSE SHOW, June 29, 1876.—ONE HUNDRED POUNDS in PRIZES. Schedules are now ready. A. R. BAILY, Hon. Sec.

RICHMOND HORTICULTURAL SOCIETY.
President: H.S.H. the Duke of TECK, G.C.B.
Under the Royal and Distinguished Patronage of—
H.R.H. the Duchess of CAMBRIDGE,
H.R.H. the Princess MARY OF CAMBRIDGE, Duchess of TECK.
H.R.H. the Duc D'AUMALE, &c.
The SECOND EXHIBITION of PLANTS, FLOWERS, FRUIT, VEGETABLES, and DINNER-TABLE DECORATIONS, will be held in the Old Deer Park, Richmond Green (by the kind permission of Mr. Fuller), on THURSDAY, June 29, 1876. Schedules may be obtained of the Hon. Secretary.
ALBERT CHANCELLOR, Hon. Sec.
1, King Street, Richmond, S.W.

SANDOWN PARK CLUB.
GRAND FLOWER and FRUIT SHOW.
A GRAND FLOWER and FRUIT SHOW, under distinguished Patronage, will be held in Sandown Park, Esher, Surrey, on FRIDAY and SATURDAY, July 7 and 8, when upwards of £350 will be given in Prizes. Schedules will shortly be ready, and may be had on application to
JOHN WILLS, Royal Exotic Nursery, Onslow Crescent, South Kensington, S.W.
J. WHITTAKER BUSHE, General Manager.

HORTICULTURAL CLUB, 4, Adelphi Terrace, Strand, W.C.
The Committee beg to announce that the Club is now in full working order, and that, in addition to the Reading, Billiard, and Smoking Rooms, Bedrooms are now provided for the use of Members. Entrance Fee, Two Guineas; Annual Subscription, Two Guineas. Prospectuses can be had on application to the Honorary Secretary at the Club House.

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JAMES SMITH, Darley Dale Nurseries, Matlock.

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The GARDENER, Garden Cottage, Isleworth House, Isleworth, Middlesex.

To Nurserymen and Gardeners.
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JOHN SOLOMON offers White, Scarlet, Purple, Pink, Crimson, Rose, and other mixed sorts, good strong spring-struck cuttings, well rooted, at 6s. per 100, 50s. per 1000, package included. Cash to accompany all orders.
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H. BLANDFORD, The Dorset Nurseries, Blandford.

Verbenas, Verbenas, Verbenas.
WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

Notice.—Seeds, Seeds.
WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds. CATALOGUES now ready, which contain every requisite, at fair prices, post-free on application.
Highgate, London, N.

Plant Catalogue.
CHARLES TURNER'S DESCRIPTIVE LIST of PLANTS for the Season, including several new varieties now offered for the first time, is ready, and may be had on application.
The Royal Nurseries, Slough.

Tea-scented Roses in Pots.
WILLIAM FLETCHER offers the above, good, strong healthy plants, now coming into bloom; also new varieties of this and last year. Prices on application.
Ottershaw Nursery, Chertsey.

60,000 Roses in Pots.
ROSES for BEDDING, at 12s. to 18s. per do.e', and 80s. per 100; splendid plants.
WM. WOOD AND SON, The Nurseries, Maresfield, Uckfield, Sussex.

TEA-SCENTED ROSES.—Strong plants, of best varieties, for Bedding or General Decoration, at 12s. per dozen, 80s. per 100. Immense Stock of GREENHOUSE and BEDDING PLANTS, which are worth growing. See CATALOGUE, free on application.
WILLIAM KNIGHT, Floral Nursery, Hailsham, Sussex.

New Roses for 1876.
H. BENNETT offers a careful selection of the above, in plants not to be equalled; unusually fine this season; ready in March. DESCRIPTIVE LISTS post-free.—Manor Farm Nursery, Stapleford, Salisbury.

Roses New and Old.
EDWIN HILLIER offers the above in all the best varieties. The plants are most healthy, and very vigorous. PRICE LISTS on application.
The Nurseries, Winchester.

EUCALYPTUS GLOBULUS (Blue Gum of Australia).—A supply of Seed always kept on hand from the establishment of Messrs. Thomas Lang & Co., Melbourne.
JOHN WILSON, Seedsman, Whitehaven.

DICK RADCLYFFE AND CO. are prepared to offer Single White Roman Hyacinths for delivery in August next, Garden Labels, Flower Sticks, Cape Flowers, Wreaths, and every Sundry supplied to the Trade. Price List on application. Cork Brackets and Pockets, 9s., 12s., 18s., and 24s. per doz.; Wire Hanging Baskets, 12s., 18s., 24s., 36s., per doz. 128 and 129, High Holborn, London, W.C.

TURF.—For Sale, at a moderate price, the whole or part of the excellent Turf on an estate in the County of Kent. Offers are invited. For particulars, apply to Messrs. HAYDON AND VIVIAN, Accountants, 29, New City Chambers, 122, Bishopsgate Street Within, London, E.C.

Wood Engraving.
MR. W. G. SMITH, ARTIST and ENGRAVER on WOOD, 15, Mildmay Grove, London, N.

SALES BY AUCTION.

Established and Imported Orchids and Specimen STOVE and GREENHOUSE PLANTS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, May 3, at half-past 12 o'Clock precisely, a choice COLLECTION of ESTABLISHED ORCHIDS, including many rare kinds, such as Oncidium macranthum, Calanthe Veitchii, Odontoglossum Roezlii, Oncidium sarcodes, and some STOVE and GREENHOUSE PLANTS, including Palms, Dracænas, Anthurium Scherzerianum, Ferns, Clematis, &c.; also some imported Plants of Sophronites grandiflora, Oncidium Marshallianum, O. crispum, Cattleya labata, C. species, C. marginata, C. bulbosa, C. crispa rosea, Oncidium sarcodes, O. concolor, Imatophyllum miniatum splendens, collected by Mr. Blunt; also a Collection of Specimen STOVE and GREENHOUSE PLANTS, the property of a Gentleman giving up exhibiting.

On view the morning of Sale, and Catalogues had.

A Collection of Established Orchids, the Property of a Gentleman.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, May 10, at half-past 12 o'Clock precisely, a large quantity of ORCHIDS, including choice Cattleya Dowiana Bogotensis, amethystoglossa, labiata Mendelii, varieties of mossiæ, Trianæ, &c.; Cœlogyne cristata, several fine pans, containing 150 bulbs each; Cypripedium caudatum, and other varieties; Calanthes, some fine plants; Dendrobium chrysotis, primulinum, heterocarpum, and some fine plants of nobile, and other varieties; splendid specimen Zygopetalum Mackayii, and other varieties; Phajus Wallichii and grandiflora; Odontoglossum sceptrum, tripudians, triumphans, Pescatorei, Alexandræ, citrosmum, grande, citrosmum roseum, odoratum, and fine variety (Dawson's) of Phalænopsis; Oncidium crispum, ornithorrynchum, macranthum, tigrinum, and stelligerum; Miltonia candida, spectabilis, cuneata, and Clowesii; with assortments of Anguloas, Sacco-labiums, Aerides, Lycastes, Stanhopeas, Calanthes, Phalænopsis, &c.

On view the morning of Sale, and Catalogues had.

Pine-apple Nursery, St. John's Wood, N W.

IMPORTANT UNRESERVED SALE of STOVE and GREENHOUSE PLANTS.

MR. J. C. STEVENS begs to announce that the Lease and Goodwill of the Pine-apple Nursery having been sold at the recent Auction, he is now instructed to prepare for SALE by AUCTION, on the Premises, Pine-apple Nursery, Edgware Road, St. John's Wood, N W., on THURSDAY, May 11, and five following days (Sunday excepted), at 12 o'Clock precisely each day, the FIRST PORTION of the valuable stock of STOVE and GREENHOUSE PLANTS, consisting of Specimen Azaleas, Camellias, Ericas, Epacris, Orange Trees, Ferns, Anthuriums, and other choice varieties of specimen Plants; also an unlimited quantity of BEDDING PLANTS, consisting of the best varieties of Geraniums, Calceolarias, Verbenas, Fuchsias, &c.

On view three days prior to and mornings of Sale, and Catalogues had on the Premises; and of Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

Odontoglossum vexillarium.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., EARLY in MAY (date will shortly be announced), one hundred healthy growing plants of ODONTOGLOSSUM VEXILLARIUM, also a plant in flower of a fine variety of the rare and beautiful PHALÆNOPSIS INTERMEDIA.

Crouch End, Hornsey, N.

Clearance Sale of PLANTS, &c., the Proprietor leaving the neighbourhood.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, without reserve, on the Premises, Oakfield House, Crouch Hill, Hornsey, Middlesex, adjoining Crouch End Station, on TUESDAY, May 9, at 12 for 1 o'Clock precisely, the whole of the valuable Collection of STOVE, GREENHOUSE, and BEDDING PLANTS, including some large Double White and other Camellias, a few choice Orchids, a collection of Exotic Ferns, also a quantity of Geraniums and other Pot plants, together with some Cucumber Frames and Lights.

May be viewed the day prior to the Sale. Catalogues may be had at the Estate Offices, 98, Gracechurch Street, E.C.

Auction Announcement.

RESULT of the FOLLOWING SALE of PROPERTY offered by

MESSRS. PROTHEROE AND MORRIS, at the Mart, Tokenhouse Yard, London, E.C., on MONDAY LAST, April 24, 1876:—

LEASEHOLD of GROSVENOR LODGE, Dartmouth Park Hill, Highgate, Middlesex, was sold for ..	£900
LEASEHOLD of THREE BRICK BUILT SIX-ROOMED HOUSES, situate in High Street, Mortlake, Surrey, and of a Wharf with a river frontage ..	510
LEASEHOLD of 6 ACRES of MARKET GARDEN LAND and RESIDENCE thereon, situate at Woodford, Essex, was sold for	440
The FREEHOLD PROPERTY, WYBOUR HOUSE, Sutton, Surrey, was bought in at the sum of	3500

Sunbury, Middlesex.

To MARKET GARDENERS, HORTICULTURISTS, BUILDERS, and OTHERS.

MR. W. GOUGH is directed to LET by AUCTION, at the Running Horse Inn, Sunbury, on FRIDAY, May 12, at 3 for 4 o'Clock in the afternoon, for a term of Fifty Years from Christmas last, 15 Acres of First-class MARKET GARDEN GROUND, well stocked with Fruit Trees and Bushes of the choicest sorts, forming a most valuable Fruit Plantation, in the highest state of cultivation; beautifully situate in the Parish of Ashford, about half a mile from the Sunbury Station on the Thames Valley Line of the London and South-Western Railway, fronting the Staines high road and the main road from Feltham to Walton, on which it extends upwards of 1500 feet.

May be viewed, and particulars with conditions of letting had at the place of letting, and of Mr. W. GOUGH, Auctioneer, Surveyor, and Land Agent, Sunbury.

Stamford Hill, N.

TO BE SOLD or LET, with Immediate Possession, the VALUABLE LEASEHOLD PROPERTY known as York Nursery, situated in St. Ann's Road, Stamford Hill, N., and within a few minutes' walk of three Railway Stations in direct communication with the City and West End. Comprising nearly 1½ acre of Land, with a good Cottage Residence, a Two-stalled Stable, Sheds, and other Outbuildings, six Greenhouses, two Ranges of Pits, &c. Rent, £90 per annum. Purchase money, £800. It has been for many years used as a Nursery, and is now to be disposed of solely on account of the death of the Proprietor. It has a 73 years' Lease unexpired, and is eligible for Building Purposes, offering a profitable speculation to Builders and others.

For further particulars apply on the Premises, or from

Messrs. TRINDERS AND CURTIS HAYWARD, 4, Bishopsgate Street Within, E.C.

Isle of Wight.

TO LET, a HOUSE, situate between Sandown and Ryde, and within a very short distance of the railway station. Twelve rooms, &c., Conservatory opening from the Dining Room, Vinery and Hot-house, fitted with about sixty Vines of the choicest sorts, two covered with bunches. The walled garden is stocked with about 200 of the choicest Pear and Apple trees, &c. (mostly Rivers'), and the wall is covered with Peaches, Nectarines, &c., set all over with fruit. The house alone would let during the summer for from eight to twelve guineas a week furnished. Rent a trifle more than the value of the Fruit. Capital fresh and salt-water fishing near. For terms apply to

H. D. C., Messrs. Mills & Sons, Southsea, Hants.

FLORIST, SEED (English and Foreign) and JOBBING GARDENER'S BUSINESS. First-class position, doing a good increasing business. Handsome Shop, Conservatory attached, Greenhouse, Stable, and five Living Rooms. Rent, £50. Incoming, about £100. Suited for a respectable Gardener and his Wife.

Apply to Mr. JOHNSON, Newsagent, Lewisham, S.E.

FOR SALE.—Large SPECIMEN PLANTS, established in large tubs and pots, Gardenias, Stephanotis floribunda, Eucharis amazonica, Azaleas, Camellias, Maréchal Niel and other Roses, &c.

The NURSERY, with nineteen years' unexpired Lease, to be DISPOSED OF, with or without the stock of Plants. For further information apply to

H. Q., *Gardeners' Chronicle* Office, W.C.

Roses in Pots by the Dozen, Hundred, or Thousand.

WM. WOOD AND SON solicit attention to their enormous and splendidly grown stock of the above. Inspection invited.

Woodlands Nursery, Maresfield, Uckfield, Sussex.

Special Offer.—Vesuvius, Crystal Palace Gem.

WILLIAM BADMAN offers good plants of VESUVIUS from single pots, 10s. per 100, 85s. per 1000. CRYSTAL PALACE GEM, 15s. per 100. MADAME VAUCHER, finest White Pelargonium, 10s. per 100. Package included. Terms cash.

Cemetery Nursery, Gravesend, S.E.

NEW PLANTS of 1875.—CUTTINGS, safe and free per post.—Twelve new Dahlias, 4s.; 12 new Fuchsias, 2s.; twelve new double Petunias, 3s.; 12 new Verbenas, 2s.; 12 new Show Pansies, 3s.; 12 new Fancy do., 3s.; 12 new large-flowered Pelargoniums, 4s.; 12 new Fancy do., 4s.; 12 best new Zonals, 3s. All true to name

J. JACKSON, Nursery, Kidderminster.

Hardy Herbaceous Plants.

FREDERICK PERKINS has a large stock of large plants of the most showy Hardy Herbaceous Plants in cultivation, at 6s. per doz., 45s. per 100, in 100 varieties.

F. P. won more than twenty First Prizes at the principal Horticultural Exhibitions in the Midland Counties last summer with collections of Hardy Herbaceous Flowers. None but the most effective grown.

FREDERICK PERKINS, Nurseryman, Regent Street, Leamington.

F. AND A. SMITH can supply, in large quantities, the undernamed, in well established Plants, at moderate prices. List upon application.

Alternanthera,	Geranium, zonal, the best of each colour for bedding,
Ajuga reptans rubra,	Lobelia "Blue Stone,"
Calceolarias,	Lobelia "Turquoise,"
Centaurias,	Mesembryanthemum cordifolium variegatum,
Coleus of sorts,	Petunias, single and double,
Dahlias,	Phloxes,
Fuchsias,	Pyrethrum imbricatum plenum,
Geranium, zonal, the best for Conservatory, in all shades of colour,	Verbenas.
Heliotropes,	

The Nurseries, West Dulwich, S.E.

Verbenas for the Million.

S. BIDE can now supply, for cash:—VERBENAS, strong spring-struck plants of Purple King, Scarlet, White, Pink, and other varieties, at 8s. per 100, 60s. per 1000, package free.

PELARGONIUMS, Show and Fancy, of the best varieties, 42s. per 100.

GERANIUMS, plain-leaved and Zonal, strong autumn-struck plants, 10s. per 100.

CENTAUREA CANDIDISSIMA, autumn-struck and well-established, in large 60-pots, 40s. per 100

CALCEOLARIAS, aurea floribunda, Golden Gem, and others, 8s. per 100.

Cash to accompany all orders from unknown correspondents.

S. BIDE, Alma Nursery, Farnham, Surrey.

PANSIES—CHEAP PANSIES.

BLUE KING, the best Hardy Blue Bedding Plant ever introduced, 1s. per dozen, 8s. per 100, 70s. per 1000. Plants suitable for Beds or Potting for Market.

DUKE OF PERTH, large black, 1s. per dozen, 8s. per 100.

CLOTH OF GOLD, from pots, 2s. 6d. per dozen, 17s. 6d. per 100.

MRS. FELTON, pure white, large violet eye, 2s. 6d. per dozen, 17s. 6d. per 100.

YELLOW KING, very large and showy, 2s. 6d. per dozen, 17s. 6d. per 100.

FINEST SHOW VARIETIES, 6s. per dozen, 40s. per 100.

FREDERICK PERKINS, Nurseryman, Regent Street, Leamington.

ROYAL BOTANIC SOCIETY,

REGENT'S PARK.

SECOND SPRING EXHIBITION,

April 26.

AWARDS OF PRIZES.

LARGE SILVER MEDAL.

Mr. Ward, Gr. to F. G Wilkin, Esq., for 12 Stove and Green-
Mr. C. Turner, Slough, for 6 Roses in Pots. [house Plants.
Mr. A. Ratty, Gr. to R. Thornton, Esq., for 6 Azaleas.
Mr. C. Turner, for 6 Azaleas.
Mr. Ward, for 6 Early Flowering Stove Plants.

SILVER MEDAL.

Mr. G. Wheeler, Gr. to Sir F. H. Goldsmid, for 12 Stove and Greenhouse Plants.
Mr. G. Wheeler, for 6 Early Flowering Stove Plants.
Mr. Ward, for 6 Cape Heaths.
Mr. James, Gr. to W. F. Watson, Esq., for 6 Azaleas.
Mr. James, for 12 Cinerarias.
Mr. Charles Turner, for 12 Auriculas.
Mr. Heims, Gr. to F. A. Philbrick, Esq., for a Collection of Orchids.
Mr. Jackman, Woking, for a Collection of Clematis.
Messrs. W. Paul & Son, for a Collection of Cut Roses.
Mr. B. S. Williams, for a Collection of Plants.

SMALL SILVER MEDAL.

Mr. W. P. Roberts, Gr. to W. Terry, Esq., for 12 hardy Herbaceous Plants.
Mr. W. P. Roberts, for 6 Old-fashioned Hardy Plants.
Mr. John Walker, Nurseryman, Thame, Oxon, for a Collection of Cut Roses.

LARGE BRONZE MEDAL.

Mr. G Toms, Gr. to H. Wetenhall, Esq., for 12 Stove and Greenhouse Plants.
Mr. G. Wheeler, for 6 Cape Heaths.
Mr. G. Toms, for 6 Azaleas.
Messrs. Cutbush & Son, for 6 Azaleas.
Messrs. Cutter & Co., for 6 Dielytras.
Messrs. Carter & Co., for 4 Tree Mignonette.
Mr. Elliott, Gr. to L. Clarke, Esq., for 12 Hardy Herbaceous Plants.
Mr. James, for 12 Auriculas.

BRONZE MEDAL.

Mr. W. Elliott, for 12 Auriculas.
Messrs. Carter, for Collection of Tree Mignonette,
Messrs. Cutbush, for Collection of Plants.

SMALL BRONZE MEDAL.

Mr. G. Wheeler, for 6 Dielytras.
Mr. Elliott, for 12 rare Polyanthus and Primulas.
Messrs. Cutbush, for a Box of Cut Camellias.

BOTANICAL CERTIFICATES OF MERIT.

Mr. B. S. Williams, for Hypolepis Bergiana.
Mr. B. S. Williams, for Niphobolus heteractis.

FLORICULTURAL CERTIFICATES OF MERIT.

Messrs. Paul & Son, Cheshunt, for Rose H.P. Duke of Connaught.
Mr. C. Turner, Slough, for Auricula Mrs. Purvess.

BATH and WEST of ENGLAND and SOUTHERN COUNTIES ASSOCIATION.

HEREFORD MEETING.

HORTICULTURAL DEPARTMENT.—The Steward of the Horticultural Department begs to state that, in order to obviate the objections so often made against the system of Exhibiting Plants in competition for Money Prizes, it has been determined to give sums of Money to Gentlemen's Gardeners in proportion to the importance and value of the Plants exhibited, as gratuities.

Exhibitors are requested to forward to the Steward, before MAY 10, a description of the Plants proposed to be shown, and the name of the Gardener who will be in charge.

Plants may be changed during the Exhibition, but must not be removed between the hours of 10 A.M. and 6 P.M. on any day except the last, when they may be removed at 6 P.M.

Any further information may be obtained on application to the Steward, The Hon. and Rev. J. T. BOSCAWEN.

Lamorran, Probus, Cornwall.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION, for the relief of decayed Farmers, their Widows and Orphans.

Patron—HER MAJESTY THE QUEEN.

President—His Grace the Duke of RICHMOND AND GORDON.

Allowances to Pensioners:—

Married	£40 per annum.
Male	26 ,,
Widows and unmarried Orphan Daughters	20 ,,

Every information to be had of the SECRETARY, by whom Subscriptions and Donations will be thankfully received.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.—The SIXTEENTH ANNIVERSARY FESTIVAL, in aid of the Funds of the Institution, will take place at Willis's Rooms, on WEDNESDAY, May 24, at 6 o'Clock,

The RIGHT HON. LORD CHESHAM in the Chair.

Dinner Tickets 21s., application for which should be made to the SECRETARY, not later than May 22.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.—The ANNUAL GENERAL MEETING will be held at Willis's Room, St. James's, on WEDNESDAY, June 21, at 11 o'clock precisely; and the ELECTION of PENSIONERS will take place on the same day at 11.30 o'Clock.

All Subscriptions shall be deemed payable on January 1 in each year; and no Contributor shall vote in respect of an Annual Subscription while the same is in arrear.

Offices of the Institution—

No. 26, Charles Street, St. James's, London, S.W.

Pelargoniums, Pelargoniums.

JAMES HOLDER'S unrivalled Collection—strong healthy Plants, Show, French, and Fancy varieties, at 35s. per 100, cash. Hamper and Packing included. Extra strong plants, in 48's and 32's, at 9s. and 12s. per dozen, Basket and Packing extra.

Crown Nursery, Reading.

Fruiting and Planting Vines.

THE COWAN PATENTS' COMPANY (late Meredith) have still on hand a good selection of the above. Catalogues and prices on application. They can also offer good Fruiting and Succession PINES.

The Vineyard, Garston, near Liverpool.

CABBAGE PLANTS, CABBAGE PLANTS.—Robinson's Champion Drumhead Cabbage Plants, at 2s. 6d. per 1,000.

J. PERKINS AND SON, 52, Market Square, Northampton

This is the Time to Plant.

ASPARAGUS, 1-yr., 2-yr., and 3-yr. old Plants in any quantity. Very cheap. Price per 1000 on application to

E. JONES, Henley-on-Thames.

Vines.

E. G. HENDERSON AND SON have fine strong fruiting-sized VINES, in several varieties, of the popular kinds, still to offer.

Wellington Nursery, St. John's Wood, London, N.W.

Verbenas. Verbenas, Verbenas.

WILLIAM MEADMORE offers White, Scarlet, and Purple King, strong well-rooted cuttings, at 6s. per 100. GERANIUM, MARSHAL MACMAHON, the best bronze bedder, 2s. 6d. per dozen. Package included.

Nurseries, Romford, Essex.

Double Pyrethrums.

THOMAS. S. WARE recommends the immediate planting of the above and other Hardy Florists' Flowers, including DELPHINIUMS, PHLOXES, DIANTHUS, PENTSTEMONS, &c. For descriptions and prices see New Spring CATALOGUE, free on application.

Hale Farm Nurseries, Tottenham, London.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to intimate that he has just issued a SUPPLEMENTARY LIST to his General CATALOGUE of New and Rare Plants at considerably reduced prices, and which will be forwarded free to all applicants, either by himself or by his Agents,

Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000; and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.

Wonersh Nursery, Guildford, Surrey.

To the Trade.

TEA-SCENTED ROSES, in Pots.—Magnificent Plants, of best varieties only, at 9s per dozen, or 60s. per 100. An immense Stock of all other plants worth growing. Catalogue free.

WILLIAM KNIGHT, Floral Nursery, Hailsham, Sussex.

GIANT ASPARAGUS PLANTS, the best that money can procure, all certain to grow, 2s. 6d. per 100. This delicious vegetable does not require half the expense usually incurred in planting it. See RICHARD SMITH'S SEED LIST for 1876.

Extra strong SEAKALE, 2s. per dozen.

RICHARD SMITH, Nurseryman, Worcester.

CENTAUREA RAGUSINA, fine plants, established in single pots, 20s. per 100, cheaper out of pots. THYMUS CITRIODORUS AUREUS MARGINATUS, established plants from open ground, 3s. per 50; 5s. per 100; 21s. per 500; 40s. per 1000.

J. J. MARRIOTT, Highfield Nurseries, Matlock, Derbyshire.

Cinerarias—Hardy's Champion Strain.

H. J. HARDY has much pleasure in calling special attention to his splendid strain of Cinerarias now in bloom. Specimen flowers may be had free by post. Seed, 1s., 2s. 6d., and 5s. packets.

Stour Valley Seed Grounds, Bures, Essex.

JEAN VERSCHAFFELT'S Nursery, 134, Fauhourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.

Mr. WEBB, Calcot, Reading.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

Dr. Denny's Zonal Pelargoniums.

JOHN COPELIN begs to announce that he will be prepared by the 1st of May to supply Dr. Denny's "Third Set" of 18 splendid varieties, reduced in price to £1 11s. 6d. per set, and 2s. 6d. per single variety.

CATALOGUES post-free on application.

Tyssen Street Nursery, Stoke Newington, London, N.

New and Genuine Seeds Only.

Now ready, gratis and post-free,

BRUNNING AND CO.'S New Illustrated and DESCRIPTIVE CATALOGUE of the above for the present season, containing a selection of the choicest novelties, together with the most approved older varieties, profusely Illustrated, and contains a splendid Coloured Plate representing a group of choice Hybrid Gladioli, for the growth of which their Nurseries are noted. Forwarded post-free to all applicants.

ISAAC BRUNNING AND CO., The Yarmouth Seed Establishment, 1, Market Place, Great Yarmouth.

Sutton & Sons

CHOICE FLOWER SEEDS,

FREE BY POST OR RAIL.

Sutton's Collections of Choice Flower Seeds, to produce a beautiful and continuous display during Summer and Autumn.

No. 1 Collection, Free by Post or Rail	..	£2	2	0
No. 2 Collection	" " ..	1	11	6
No. 3 Collection	" " ..	1	1	0
No. 4 Collection	" " ..	0	15	0
No. 5 Collection	" " ..	0	10	6

Small and Useful Collections can also be had, from 2s. 6d. to 7s 6d. Free by Post.

Complete Instructions as to the Cultivation of Sutton's Choice Flower Seeds will be found in

"SUTTON'S AMATEUR'S GUIDE,"

The most practical work on gardening yet published, beautifully illustrated with 300 engravings.

Price 1s., post-free for 14 stamps. Gratis to Customers

TO OBTAIN THE

Best Garden Lawns and Croquet Grounds

SOW

SUTTON'S LAWN GRASS MIXTURE,

Which forms a close velvety turf in a very short time. For making New Lawns or Croquet Grounds 3 bushels or 60 pounds is required per acre, or 1 gallon to every 6 rods (or perches) of ground.

For improving those already in turf, 20 pounds should be sown per acre.

March, April, and May are the best months for sowing.

Price 1s. per lb.; 20s. per bushel.

From Mr. J. MERRICK, *Gardener to* S. Forster, Esq., *Le Court.*

"The Seed you sent me last year turned out uncommonly well. Several gentlemen who came to Le Court could scarcely credit, from the appearance of the lawn, that it was only sown in May. In August it was as fine and thick as I have seen some lawns that had been laid down for three years."

Instructions on the Formation and Improvement of Garden Lawns and Croquet Grounds Gratis and post-free.

THE QUEEN'S SEEDSMEN, READING.

The Most Beautiful new Regal Pelargonium is

BEAUTY OF OXTON.

Price, 1 guinea each.

A pretty and charming novelty is the new double flowering IVY-LEAVED PELARGONIUM, "KONIG ALBERT." Price 7s. 6d. each.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

SILVER VARIEGATED GERANIUM, "Little Trot." The best Silver Variegated ever offered for Edging or Carpet Bedding. SILVER TRICOLORS, Eva Fish and Lass o' Gowrie.

Price per 100 or 1000 of the above on application

W. POTTEN'S CATALOGUE of BEDDING PLANTS will be sent post-free to all applicants.

Camden Nursery, Sissinghurst, Staplehurst, Kent

Cranston's Nurseries (Established 1785)

TEA-SCENTED ROSES—20,000 strong, well hardened plants, in 5½-inch pots.

April and May are the best months for Bedding or Planting-out the Tea scented, China, Noisette, and all Roses on their own roots. Selections, left to us, from 12s. to 15s per dozen.

Descriptive Priced LISTS on application to

CRANSTON AND MAYOS, Hereford.

The Model Potato.

HARRISON AND SONS have a quantity of the above to offer, at 12s. per bushel; it is of robust habit, excellent quality, and fine shape. Highly recommended.

HARRISON AND SONS, Seed Growers, &c., Leicester.

Cedrus Deodara, 10 to 15 and 20 feet high.

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Excellent bedder.

Package free. Cash with order.

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H. AND F. SHARPE have still on hand the following varieties of SEED POTATOS, which they offer at reasonable prices:—

Myatt's Prolific Kidney,	Walker's Improved Regents,
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SEEDS—EXTRA QUALITY.

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CUTTINGS of GERANIUMS, &c.—One Hundred GERANIUMS, in 40 choice varieties, including Tricolor, Gold and Bronze, Variegated, Zonal, Nosegay, and Ivy-leaf, for 12s.; 50, 5s. 6d.; 25, 3s.

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BOLTON AND CO. beg to offer their fine stock of YELLOW GLOBE MANGEL WURZEL SEED.

Their large Champion Yellow Globe produces an immense weight per acre, and the Pedigree Mangel is the finest one grown, small top, fine clean skin, and single tap-root. Both of these superior Mangels give great satisfaction.

Moderate prices, on application.

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AZALEA INDICA.—A Gentleman wishes to dispose of a choice collection of AZALEAS, twenty-eight in number, height from 2 ft. 6 in. to 2 ft. 9 in., about 18 inches through, trained as pyramids. The plants are in perfect health and now in bloom. Names and other information forwarded on application to

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CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.

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WILLIAM BADMAN offers the following cheap Plants for present potting :—

VERBENAS, Purple, Scarlet, White, Rose, Crimson, &c., best bedding sorts, healthy, hardy stuff, 6s. per 100, 50s. per 1000 ; also 20 fine named varieties, 8s. per 100.
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LOBELIA SPECIOSA (true), from cuttings, sturdy plants, 3s. per 100, 20s. per 1000.
HELIOTROPE, finest dark sorts, 6s. per 100.
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VESUVIUS, the best Scarlet Pelargonium for pots or beds, good plants, 1s. 6d. per dozen, 10s. per 100.

Package included. Terms cash.

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CHOICEST NEW FLOWER SEEDS. Carriage post-free.

The choicest strains of the following :—

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Choice Hardy Annuals, Half-Hardy Annuals, Biennials and Perennials, | Choice Ornamental Grasses, Everlasting Flowers, &c. &c.

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Pelargoniums, Fuchsias, and other Bedding Plants.
All established in single pots.

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PELARGONIUMS, Show, Spotted, and Fancy, fine flowering plants in 5-inch pots, good named sorts, 50s. per 100; 8s. per dozen.
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FUCHSIAS, in great variety, to name, in 5-inch pots, splendid plants, 40s. per 100 ; 5s. per dozen.
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AGERATUM, Imperial Dwarf, 2s. per dozen, 14s. per 100.
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AVENUE TREES.

	Girth 4 ft. from ground.
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10 inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8 ,,
MAPLES, Norway, 12 to 16 feet high ..	5 to 8 ,,
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10 ,,
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POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10 ,,
ELMS, 15 to 18 feet	7 to 9 ,,

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.

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SNOWFLAKE POTATO.

Having imported and grown largely of this splendid new variety last season we are in a position to offer fine English-grown seed tubers at the following rates :—

	s.	d.
Per pound	0	6
Per peck of 14 lb.	6	0
Per bushel of 56 lb.	21	0

Cheaper by the sack or ton.

Orders of 21s. and upwards carriage free.

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Upwards of Fifty other Varieties in Stock.

BEAUTIFULLY ILLUSTRATED
Catalogue of Kitchen Garden and Flower Seeds, Gladioli, &c.
POST-FREE ON APPLICATION.

DANIELS BROS.
Seed Growers
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NEW PATENT.

THE "SUTTON" RESERVOIR FLOWER POT.

SECTIONAL VIEW.

SECTIONAL VIEW.

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STEAM POTTERY WORKS, READING,

Are now prepared to receive applications for Licenses from Potters desirous of making and selling the above in various parts of the United Kingdom.

Opinion of Shirley Hibberd, Esq.,

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"Amongst the many attempts made to improve the common Flower Pot this alone, as far as my experience goes, is worthy of general adoption."

POTATOS for SEED.—The EUREKA, the largest Cropper ever brought before the public, per cwt. 20s., per ton on application ; and most of the leading sorts, English and American.

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POT ROSES.—A Gentleman having a fine Collection of about a hundred good Plants of the above, for which he lacks room, will be happy to treat with any Gentleman, on liberal terms, who may wish to take up the Culture of Roses in Pots. Address,

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HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of

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NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

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	Per doz. s. d.	P. 100 £ s.
Antirrhinums	3 6	1 5
Ageratums	2 0	0 12
Chrysanthemums	3 0	1 0
Carnations and Picotees, single plants	6 0	2 5
,, pairs	11 0	3 15
Clematis	15 0	5 0
Calceolarias	1 0	0 8
Coleus	3 0	1 1
Carpet Bedding Plants	1 6	0 10
Daisies, various colours	1 0	0 5
Fuchsias	3 0	1 0
Geraniums, Tricolor	3 6	1 5
,, Bicolor	3 6	1 5
,, Zonal and Nosegay, in sorts for pots	3 0	1 1
,, autumn struck, for bedding, out of pots	2 0	0 15
Heliotropes	2 6	0 18
Iris germanica	3 0	1 0
Lobelias	1s. to 2 0	6s. to 12
Succulents	6 0	
Greenhouse plants	12s. to 18 0	
Stove plants, 12s. to	18 0	
Tree Carnations	12 0	
Echeveria secunda glauca	2 0	12 0
Delphiniums, seedlings, bloomed last year	3 6	
Spiræa japonica, ditto	9 0	
Rock plants	0 1	1 0

	Per doz. s. d.	P. 100 £ s.
Pansy Mrs. Felton, the best white	3 0	18 0
,, Clevedon, Purple and C. Blue	2 0	12 0
Viola, Golden Perpetual, the best yellow	2 0	12 0
Pelargoniums, 6s. to	9 0	
Herbaceous plants	3 0	1 0
Pelargonium Queen Victoria	18 0	
Pansies, show	3 6	1 5
,, bedding	2 0	0 15
Pinks	3 6	1 5
Pæonies	12 0	4 10
Pentstemons	3 6	1 5
Pyrethrums	10 0	
Salvias	3 0	1 1
Sedums	3 0	1 1
Saxifrages	3 0	1 1
Violas	1 6	0 10
Violets	2 6	0 18
Roses in Pots, H.P.'s	12 0	4 10
Hardy Climbing plants, in pots	12 0	
Dactylis elegantissima	1 0	4 6
Begonias	4 0	
Achimenes	2 6	
Dracæna terminalis and Cooperi	18 0	
Caladiums	15 0	
Epiphyllums	12 0	
Phloxes	3 6	1 5
Sempervivums for edging	2 0	0 12
Double Sweet Williams	3 0	1 0

NEW and SELECT LANTANAS.—This free-blooming class of Plants are very useful for Bedding (equal to Verbenas), and they also make desirable pot plants, blooming all through the season. Twelve select and very superb varieties, 2s. 6d., post-free, from

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NEW COLEUS of 1875.—Twelve superb varieties New Coleus, selected from the best varieties of 1875, very effective and distinct ; the twelve varieties in good plants, 3s., post-free ; also twelve very select older varieties, 2s., post-free, from

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NEW and SELECT PELARGONIUMS.—Now ready to be sent out in good plants, large-flowered Show, Fancy, and French spotted Pelargoniums ; twelve best selected varieties, post-free, 6s.

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NEW FUCHSIAS of 1875, now ready to send out, carefully selected from the best kinds sent out in 1875, in good plants. Twelve select New Fuchsias, 4s. ; 12 best selected varieties of 1874, for 3s. ; 12 very fine older varieties, 2s. ; all sent post free, from

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NEW DOUBLE WHITE GERANIUM, "GEORGE SAND," the largest and best Double White ; 12 superb varieties Double Geraniums, including "George Sand" and other new colours, in good plants, post-free for 6s.

NEW AGERATUM, DUCHESS of EDINBURGH, the best Dwarf Blue yet produced, 3s. per dozen, post-free, from

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NEW VICTORIA DAISIES.—This new strain of Double Daisies produces flowers 6 inches in circumference, on long foot-stalks 8 inches high, looking more like large Ranunculi than Daisies. They are decided acquisitions to our early spring-blooming plants. B. W. K. is now enabled to offer the following six varieties, post-free, for 2s., viz. :—Albert Edward, Albert Victor, Masterpiece, Nil Desperandum, Renown, Queen Victoria ; 12 newer varieties of 1873, in 12 fine varieties, for 6s., post-free ; also a fine mixture of colours, unnamed, at 1s. 4d. per dozen, or 8s. per 100, post-free, from

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NEW STRIPED ROSE,

BEAUTY of GLAZENWOOD.

A Hybrid Tea of a most distinct and novel kind, unlike any other variety already known, and may possibly prove to be an entirely new genus. The ground tint is a lovely golden-yellow, darker but after the style of "Madam Falcot," each petal being distinctly striped and flaked with a bright carmine, as often seen in the coloration of some Tulips, the buds before expanding being boldly and beautifully marked with crimson. The foliage is grand, of a beautiful light satiny green, the serrated edges being marked with red. The odour is delicately sweet, as in the generality of Tea Roses. The flower is of good shape and build, with plenty of petals; the flower-buds pointed and very handsome. It is impossible to convey by description the marking and beauty of this charming Rose, but it is without doubt the most striking novelty introduced for years.

"A Rose of golden-yellow, striped and flaked with scarlet or vermilion, sounds like a dream or a fairy tale. It is nevertheless a reality." H. Curtis, *in the "Garden."*

Figured in the *Floral Magazine*, Plate 174.

Coloured Plates, 1s. each. Strong Plants in Pots, 21s. each. The usual discount to the Trade.

LEWIS WOODTHORPE,
GLAZENWOOD NURSERY, BRAINTREE, ESSEX.

TEA & NOISETTE ROSES

ON SEEDLING BRIER AND OTHER STOCKS

Best adapted to the respective sorts, so worked that no suckers can be produced.

Splendid Plants, in immense quantities; considering health, size and vigour, the cheapest offered in the Trade.

NEW ROSES FOR 1876 NOW BEING SENT OUT IN VERY FINE PLANTS. LISTS FREE.

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THE ROYAL NORFOLK NURSERIES, EATON, NEAR NORWICH.

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MESSRS. E. G. HENDERSON & SON

Respectfully announce to their Patrons and Friends that they have purchased the entire Lease, Good-will and Premises of the PINE-APPLE NURSERY, Edgware Road, London, W. (recently known and conducted as the "PINE-APPLE NURSERY COMPANY"), including the very extensive range of Plant Houses, Conservatories, &c., recently erected or remodelled.

The clearance of the present Stock in Trade will be effected by the end of May, and from the 1st of June the Business will be resumed by Messrs. E. G. Henderson & Son, conjointly with their present Establishment at the Wellington Nursery, St. John's Wood, N.W., of which further notice will be given.

P.S.—All letters or communications strictly bearing reference to the future business of the PINE-APPLE NURSERY, from the 1st of June forthcoming, may be addressed to

Messrs. E. G. HENDERSON & SON,
THE WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON, N.W.

EWING'S INFALLIBLE COMPOSITION

FOR THE
PREVENTION AND DESTRUCTION
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M I L D E W,

In Bottles, 1s. 6d. and 3s. each; Packed for Travelling, 1s. 9d. and 3s. 4d. each.

To make respectively Eight and Sixteen Gallons of Mixture fit for use.

To be had from all principal Nurserymen, Seedsmen and Florists.

Mr. Q. Read, *Pleasley Hall, Mansfield, in* "The Garden," *October* 23, 1875, *writes*:—

"I have had the Vines in two houses attacked with mildew just after the fruit has been set. Air had been given night and day, a brisk temperature maintained, damp and stagnation avoided, and both bunches and foliage had been well dusted with sulphur; yet, notwithstanding all this, the mildew continued to make progress. This season it appeared in my early vinery about the usual time, just after the Grapes had set, and all our efforts to stop it were unavailing. Fearing it would appear as usual in the second house, I bought a few bottles of 'Ewing's Composition,' and applied it according to the instructions received, and the result has been most satisfactory. Not a trace of mildew has been observed during the season, and the Vines have ripened the best crop of Grapes we have had in the house for nine years."

EWING AND CO., THE ROYAL NORFOLK NURSERIES, EATON, near NORWICH.

New Double Zonal Pelargoniums

For 1876.

W. & J. BROWN

Will let out in May next the following new and distinct varieties, raised by Mr. Laxton (the raiser of Jewel, Emily Laxton, Guiding Star, and others), all of which are striking novelties, having the dwarf habit of the single Zonals:—

THE GHOST.—Flower pure ivory-white, finely formed, petals waxy and of great substance—a decided acquisition in double whites, and especially adapted for bouquets, 10*s.* 6*d.*

SOPHIA CLAPTON.—The plant has the remarkably dwarf and shrubby habit and pale green foliage of "Guiding Star." Flower very full, pretty Hepatica shaped, bright purplish scarlet, 10*s.* 6*d.*

WILFRID.—A beautiful pearl-white flower, fuller and more perfect in form than "Aline Sisley," very pretty and remarkably distinct—decidedly the best of its class yet sent out, 15*s.*

First-class Certificate Royal Horticultural Society.

The set for £1 12s. 6d. Trade terms as usual.

W. and J. BROWN, Florists, Stamford.

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W. F. BOFF
Offers Orchids, good sorts, nice plants, at 21*s.*, 30*s.*, and 42*s.* per dozen.
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HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,
KNAP HILL NURSERY, WOKING, SURREY.

SEEDS, SEEDS, SEEDS.
FLOWERS ALL THE YEAR ROUND
obtained by sowing one of the
HEATHERSIDE NURSERIES COMPANY'S
10*s.* 6*d.* COLLECTIONS, carriage free.

Contains:—
ASTERS, 12 splendid varieties; STOCKS, 12 splendid varieties; HARDY ANNUALS, 12 splendid varieties; EVERLASTING FLOWERS, 6 splendid varieties; HARDY PERENNIALS, 6 splendid varieties; FANCY GRASSES, 3 splendid varieties; TENDER ANNUALS, 12 splendid varieties; MIGNONETTE, 1 oz.; SWEET PEAS, finest mixed, 2 oz.

For Vegetables all the Year Round, order their 21*s. Collection, the largest and best ever offered.*

Address: 59, QUEEN VICTORIA STREET, E.C.

THE KNAP HILL CYPRESS,
Cupressus Lawsoniana erecta viridis.

ANTHONY WATERER

Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices:—

3 feet high, 2½ feet in circumference, 30*s.* per doz.
4 feet high, 3 to 4 feet do., 42*s.* to 60*s.* per doz.
5 feet high, 4, 5 and 6 ft. do., 10*s.* 6*d.*, 15*s.* to 21*s.* each.
6 and 7 feet high, 6 to 7 and 8 ft. do., 21*s.* to 31*s.* 6*d.* each.

No cuttings have been taken from the plants here referred to, which are simply perfect in growth and splendidly rooted.

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FRANCIS & ARTHUR DICKSON & SONS.

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Farm Seeds Extra Select & of Unsurpassed Quality

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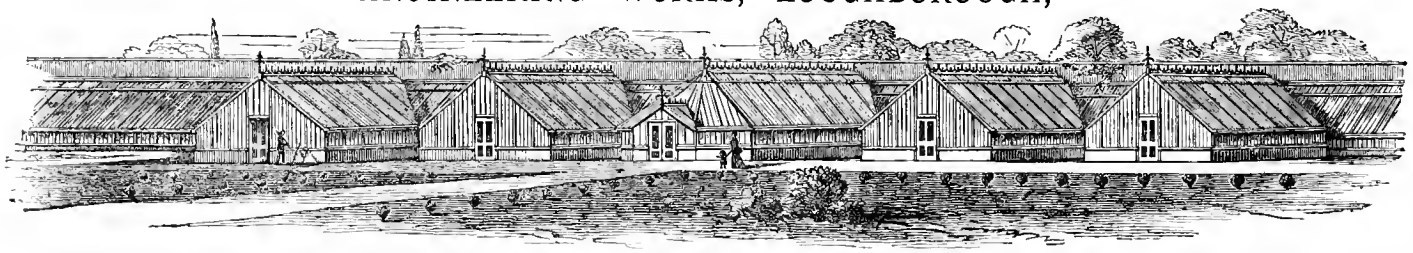
CONTRACTORS, MIDLAND HORTICULTURAL BUILDING AND HOT-WATER
ENGINEERING WORKS, LOUGHBOROUGH,



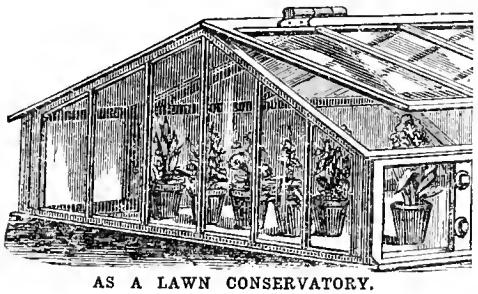
Beg to call attention to the above illustration, which shows a very advantageous arrangement of Glasshouses which has been adopted for several important Works on M. & Co.'s recommendation.

Only thoroughly well-seasoned timber used. Glasshouses erected on Messenger's patent principles are, owing to mechanical arrangements, very strong, *most durable*, light, *elegant; perfect efficiency* for purpose intended is *guaranteed;* are economical in cost and maintenance. Messenger's Patent Boilers, Flexible Jointed Hot-water Pipes and Valves, are now in use in many thousands of instances, with the greatest success. Particulars on application.

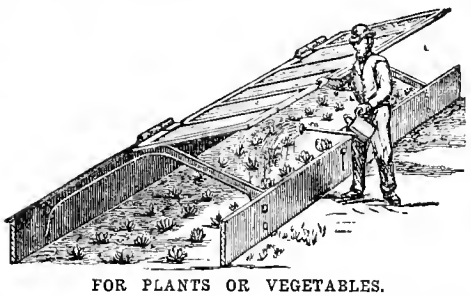
Plans and Estimates forwarded. Ladies and Gentlemen waited upon. The Plans of Architects and others carried out. Illustrated Circular Free.

BOULTON & PAUL (LATE W. S. BOULTON & CO.), NORWICH,
HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MAKERS.

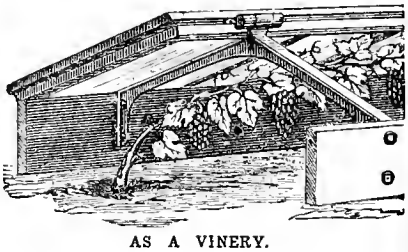
Now Ready, our ILLUSTRATED CATALOGUE for 1876 of HORTICULTURAL BUILDINGS, containing upwards of 60 Engravings with Prices of Conservatories, Greenhouses, Peach Houses, Forcing Houses, &c., Free by Post for 12 stamps.



AS A LAWN CONSERVATORY.



FOR PLANTS OR VEGETABLES.



AS A VINERY.

The Judges at the Royal Horticultural Society's Great Meeting lately held at Birmingham, pronounced these Patent Plant Preservers and Ground Vineries to be by far the best and most useful articles of the kind they ever saw, and awarded them the ONLY PRIZE.

Instead of having to remove or slide loose glass every time it is necessary to attend to the plants, we attach the glazed lights (21-oz.) with hinges to the frame of each light, thereby doing away with continual breakage of glass and loss of time. Two men can instantly remove a complete length, 12 ft. by 4 ft. wide; thus proving them to be really portable. They are made in the following sizes. One pair of ends is sufficient for any number of lengths, if set in a continuous row.

Cash Prices carriage paid to any Station in England on Orders amounting to 40s. and upwards.

	Price.	Ends per pair extra.
6 feet long by 2 feet wide	£1 5 0	5s. 0d.
12 feet long by 2 feet wide	2 10 0	5s. 0d.
6 feet long by 3 feet wide	1 15 0	7s. 0d.
12 feet long by 3 feet wide	3 5 0	7s. 0d.
6 feet long by 4 feet wide	£2 6 0	8s. 6d.
12 feet long by 4 feet wide	4 4 0	8s. 6d.
12 feet long by 5 feet wide	5 10 0	10s. 6d.
12 feet long by 6 feet wide	7 0 0	12s. 0d.

Lawn Conservatories, with Glass sides and ends, 12 feet long by 4 feet wide, £7 5s.; 12 feet long by 5 feet wide, £8 15s.; 12 feet long by 6 feet wide, £10.

PATENT UNIVERSAL PLANT PRESERVERS, Large Sizes to Build on Brick Walls, for use as Span-roof Pits, suitable for Forcing, Propagating, Growing Cucumbers, Melons, and a variety of other things too numerous to mention. Write for New Illustrated List post free.

OPINIONS OF THE PRESS.

"The uses to which such frames can be put are fully recognised by practical gardeners, and if any notice can be taken of the great demand arising for such contrivances amongst amateurs, it would appear that they too are not ignorant of their great value."—*Gardeners' Chronicle.*

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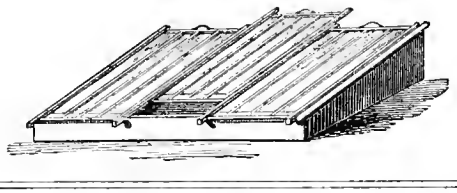
"Every convenience is provided to save time in cases of removal, planting, watering, and giving air. The glass is firmly fixed and puttied—an essential point. They are complete and ready for use the moment they are received, &c."—*The Garden.*

MELON OR CUCUMBER FRAMES.

All sizes (glazed with 21-oz.) ready for immediate delivery.

Height at back, 24 inches; at front, 13 inches; sides, 1¼ inch thick; lights, 2 inches thick. All made of very best red deal. Painted three coats. Every pane of glass is nailed as well as puttied in. Each light is provided with an iron strengthening rod and handle.

Glazed with 21-ounce.



Cash Prices, carriage paid to any station in England when orders amount to 60s. and upwards.

4 feet long by 6 feet wide, 1 light	£1 17 6
8 feet long by 6 feet wide, 2 lights	3 5 0
12 feet long by 6 feet wide, 3 lights	4 17 6
16 feet long by 6 feet wide, 4 lights	6 7 6
20 feet long by 6 feet wide, 5 lights	7 17 6
24 feet long by 6 feet wide, 6 lights	9 7 6

One half allowed for Packing Materials when returned free to our Works. Cash or reference respectfully requested with transmission of all first orders.

PARHAM'S PATENT SYSTEM of GLAZING (without Putty) on CHANNELLED WROUGHT-IRON RAFTERS
secures almost entire immunity from Breakage of Glass, extreme facility for Repairs, and absolute freedom from Drip.

It is most extensively adopted, and meets with unqualified approval.

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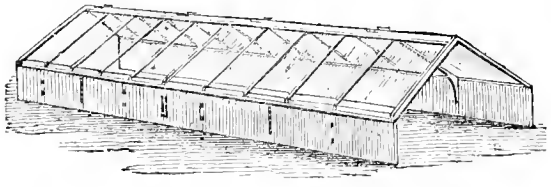
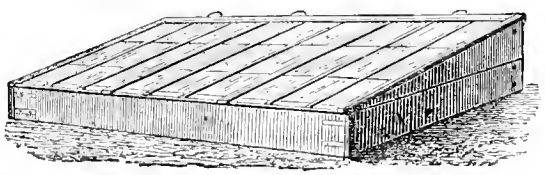


CUCUMBER AND MELON FRAMES.



WILLIAM PARHAM,
Horticultural Builder and Hot-water Engineer,

NORTHGATE WORKS, BATH;

AND

280, Oxford Street, London, W.

*** Full size Specimen Houses and Drawings of many important Works which W. P. has carried out may be seen at either address.

Illustrated Catalogues and Price Lists free.

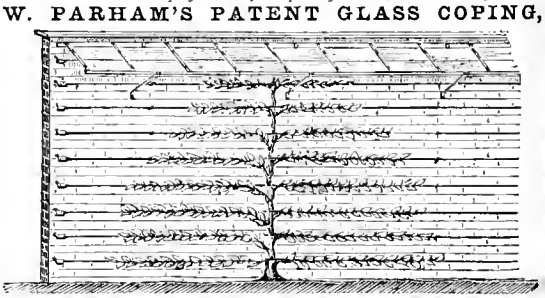
Designs and Estimates prepared free of charge for Horticultural Buildings and Hot-water Works of any magnitude.

The advantages of this system of Glazing are also secured in the accompanying Garden Requisites, and W. P. invites special attention to the wonderful success of his Patent Glass Coping, which far exceeds all he could have hoped for.

(*See Testimonials.*)

A Certain Crop of Fruit, in spite of Frost, is secured by

W. PARHAM'S PATENT GLASS COPING,



GALVANIZED WALL WIRING & ESPALIERS.

Holdfasts, 2s. per dozen. Raid'sscura, 4s. per dozen. Eyes, 6d. per dozen. No. 13 Wire, 6d. per 100 yards.

"ARCHIMEDEAN" AMERICAN LAWN MOWERS,

Will Cut Long and Wet Grass (as well as Dry and Short) without Clogging.

They are especially adapted for Cutting Slopes, Steep Embankments, under Shrubs, and close up to Trees, &c.; and are also extremely light in draught, simple in construction, well made, and not likely to get out of order.

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Grand Diploma of Honourable Mention, Vienna, 1873.
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H.R.H. the Prince of Wales,
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And many of the Nobility and Gentry of Great Britain.

CAN BE USED EITHER WITH OR WITHOUT GRASS BOX.

OPINIONS of the PRESS.

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"We feel bound to recommend it to our readers as one of the best mowers we have as yet made acquaintance with." *Vide* the *Floral World*.

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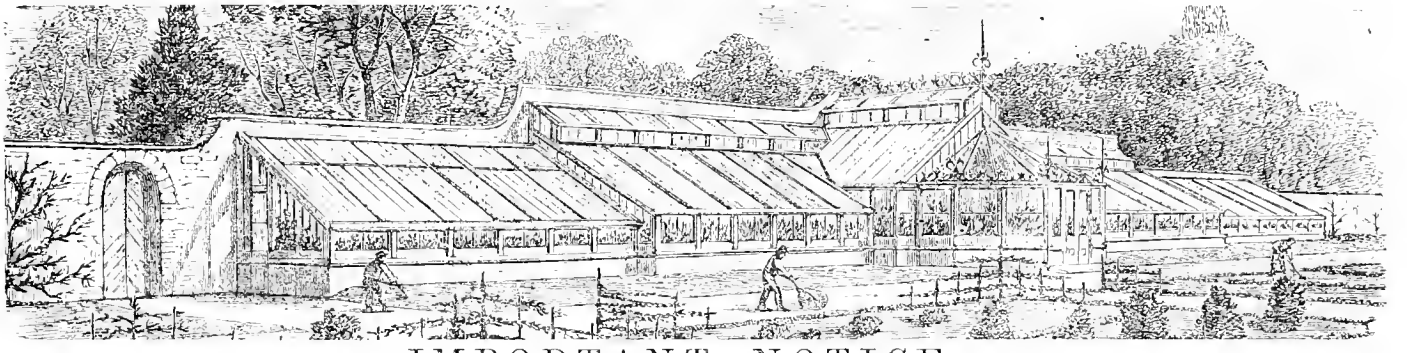
HORTICULTURAL BUILDINGS.—SEASON 1876.



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The GREAT SUCCESS that has attended our introduction of CAST IRON and SLATE FOUNDATIONS to Peach Wall Coverings has induced us to extend their application, in an improved form, to every description of Horticultural Building. The following are among the many advantages which this invention offers:—Great economy in cost and labour; great utilisation of space; great adaptability, with strength and durability equal to Brickwork and Masonry; while houses so constructed are at once *Tenant's Fixtures*.

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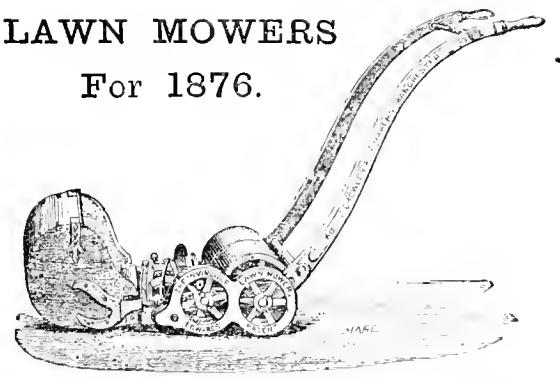
J. WEEKS & CO.,

HORTICULTURAL BUILDERS, HOT-WATER APPARATUS MANUFACTURERS and PATENTEES,

KING'S ROAD, CHELSEA, LONDON, S.W.

LAWN MOWERS

For 1876.



Prices:—

6 in.	8 in.	10 in.	12 in.	14 in.	16 in.	18 in.
£1 5s.	£2 10s.	£3 10s.	£4 10s.	£5 10s.	£6 10s.	£7 10s.

20 in. £8 10s. 24 in. £9 10s.

Every Machine Guaranteed. Catalogues on application.

WINNER OF THE FIRST PRIZE
GOLD MEDAL,
LAWN MOWER CONTEST,
BIRMINGHAM, JULY 8, 1874,
AND
EVERY MEDAL AWARDED
FOR
LAWN MOWERS
IN
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Results have proved conclusively that the "INVINCIBLE" is without exception, the

Best Lawn Mower Made.

Cuts Wet or Dry, Long or Short Grass.

THE "INVINCIBLE."

S. EDWARDS, Patentee.

SOLE MAKERS:—

JOHN CROWLEY & CO.,

SHEFFIELD.

HORTICULTURAL BUILDINGS.

Those about to erect Conservatories, Hothouses, Greenhouses, &c., are respectfully requested to inspect those already built at my Works, Stanley Bridge, King's Road, Chelsea, S.W.

H. Ormson's Patent Tubular Cornish Boiler, in conjunction with his Patent Divisional Hot-water Apparatus, may be seen at the same time.

This Apparatus is the best and most efficient ever invented. There is no other like it. It gives the Gardener complete command over the Temperature of his Hothouses, which he can increase or diminish as he may find necessary, by bringing more or less pipes into action, the others remaining cold, and this in spite of any acts of carelessness the Stoker may commit. It surpasses all other Hot-water Apparatus in the power it gives of Economising Fuel. This system can be applied to Apparatus already fixed on the old plans.

Hot-water Pipes, Boilers, &c., at Wholesale Prices, and Tenders given for Heating all Descriptions of Buildings.

Plans and Estimates for Horticultural Buildings of every Description, either in Wood or Iron, to suit any Garden, Large or Small,

Designed and Constructed with strict regard to Economy of Price, Good Workmanship, Durability of Material, and Practical Adaptation to their various Purposes.

Cast Iron and Slate Foundations (if preferred to Brickwork), which the Advertiser has been in the habit of using for the last 25 years.

HENRY ORMSON,
HORTICULTURAL BUILDER and HOT-WATER APPARATUS ENGINEER,
STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

SPECIAL AND IMPORTANT NOVELTIES.

THOMAS METHVEN & SONS

Have the pleasure to announce that they have made arrangements to send out the following splendid acquisitions to the class of Decorative Bedding Plants :—

VIOLA "LADY SOPHIE."

Colour reddish purple, with yellow eye. Fine close erect habit. One of the finest and most effective bedding Violas yet sent out.

VIOLA "LADY DIANA."

Colour very dark glossy purple, with fine clear yellow eye. Good habit. Received a First-class Certificate from the Royal Botanic Society, Regent's Park, London.

The above were raised by Mr. Gray, of Eglinton Castle Gardens, Ayrshire, in 1873, from which time they have been used extensively there for beddiog purposes, and have been universally admired.

Price 18*s. per dozen. Cheaper by the Hundred.*

CLOVE CARNATION "DUKE OF WELLINGTON."

A most profuse bloomer; colour a brilliant scarlet.

Mr. Thomson, of Drumlanrig, says of it:—"I consider Clove Carnation Duke of Wellington to be the most profuse and lasting bloomer of any variety I have ever seen. It is of a brilliant scarlet colour. The flowers are medium-sized, and the sheath does not burst—qualities which render it invaluable for cutting. In beds it forms a dense mass of colour."

Price 18*s. per dozen.*

GERANIUM "ROBERT BURNS."

This Geranium is a cross between Bronze Crown Prince and Ivy-leaf Duke of Edinburgh. It is without doubt the finest Golden Bronze Bedding Geranium ever introduced.

Although a most luxuriant grower, in height it does not exceed 3 or 4 inches. The leaves are much larger than those of Crown Prince, and it possesses the creeping habit of Duke of Edinburgh. The leaf is of a bright golden colour, with a distinct chestnut zone. It has received several First-class Certificates.

Mr. Thomson, of Drumlanrig Gardens, writing in the *Gardener*, says of it:—"We saw the other day what we are fully convinced is the finest Bronze Geranium that has ever been raised for outdoor purposes. It is a seedling raised by Mr. Gray, of Newfield Gardens, near Kilmarnock. It is a cross between the Ivy-leaf Duke of Edinburgh and Crown Prince, partaking of the creeping or spreading habit of Duke of Edinburgh; and as a Bronze we consider it as far superior in marking to Crown Prince as Crown Prince is to most others. The ground is a bright orange-yellow, with a distinct dark chocolate zone. It grows very strongly, and spreads closely to the ground, with every leaf turned up; and, unlike many of the Bronzes, when planted out and exposed to wet and sunshine, it does not get damaged at the edges of the leaves. It has been named 'Robert Burns.'"

Price 18*s. per dozen.*

VERBENA "PINK QUEEN."

This Verbena, raised by Mr. Niven, of Hopetoun Gardens, is a most beautiful and attractive variety. In colour it is of a pleasing bright pink, it is an early and abundant bloomer, and in habit it resembles the well-known Purple King, and makes a good companion to that variety. It has been greatly admired by all who have seen it at Hopetoun during the last three seasons.

Price 18*s. per dozen.*

LEITH WALK NURSERIES, EDINBURGH.

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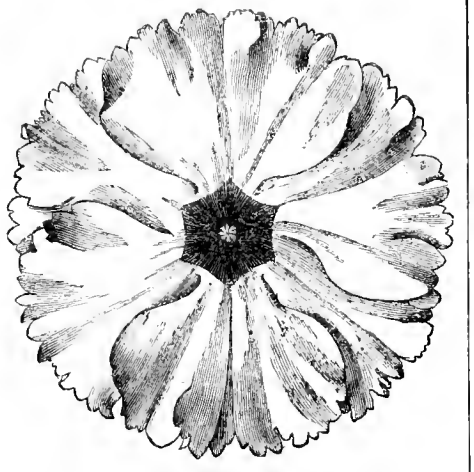
FLOWER SEEDS.

Per Packet.—	s.	d.
AURICULA, saved from the finest show varieties ..	1	6
,, ALPINE, extra choice	1	0
BEGONIA FROEBELII (new).—This is a new and distinct species	2	6
,, SEDENI SEMI-PLENA, a new semi-double flowering variety	2	6

CALCEOLARIA, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
CARNATION, from choice double flowers, 5s., 3s. 6d., 2s. 6d. and	1	6
CINERARIA, Weatherill's Extra Choice Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
CYCLAMEN PERSICUM, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
,, ,, GIGANTEUM	5	0
GLOXINIA, Finest Drooping Varieties	1	6
,, Finest Erect Varieties	1	6
HOLLYHOCK, from the best named flowers	1	0
PANSY, from finest Prize Flowers .. .. 2s. 6d. and	1	0
PICOTEE, extra choice mixed	1	6
PINK, finest mixed	1	6
POLYANTHUS, Wiggin's Prize Strain	1	0



PRIMULA, Williams' Superb Strain, Red, White, or Mixed .. .. .. 5s., 3s. 6d., 2s. 6d., and	1	6
STOCK, Williams' Improved Giant Scarlet Brompton ..	1	6
,, East Lothian, an assortment of 3 colours	2	6
,, Virginian, New Crimson, a distinct variety; the flowers are large and of a bright crimson colour, the habit is dwarf, robust and branching ..	1	0
WALLFLOWER, Harbinger, Autumn and Winter Flowering	1	0
,, Saunder's Dark	1	0

ILLUSTRATED SEED CATALOGUE
Gratis and post-free on application.

ILLUSTRATED NEW PLANT CATALOGUE
Is now ready, gratis and post-free on application.

VICTORIA AND PARADISE NURSERIES,
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ORCHIDS

At unprecedentedly low prices.

MR. WILLIAM BULL

Is constantly receiving Importations from his Collectors and Correspondents abroad, and offers the following at the low prices annexed :—

ODONTOGLOSSUM CIRRHOSUM, £3 3s.: the magnificent new Odontoglossum illustrated in the *Gardeners' Chronicle*, April 15, 1876.

PLEIONE HUMILIS, good flowering bulbs 3s. 6d. each; if a dozen are taken, 3s. each; if fifty are taken, 2s. 6d. each; a dozen would make a good specimen. The usual price of this hitherto rare Orchid has been 2 guineas each.

PLEIONE MACULATA, same prices as Pleione humilis.

PLEIONE HOOKERIANA (true).—This rare species is one of the coolest of cool Orchids, collected at an elevation of 10,000 feet, where the temperature often falls 12° below freezing point. 7s. 6d. each; £3 per dozen.

DENDROBIUM AMŒNUM.—The flowers of this pretty Himalayan Dendrobium are white, tipped with pink, and scented like Violets; 15s. each, 6 guineas per dozen; a few extra strong plants, 21s. and 31s. 6d. each.

DENDROBIUM MARMORATUM, a charmingly pretty pink-flowered species, 7s. 6d. each, £3 per dozen.

CŒLOGYNE CORYMBOSA.—This is probably the first time this handsome species has ever been seen in England in a living state; 10s. 6d. each, 4 guineas per dozen.

DENDROBIUM BARBATULUM, a sweet-scented free-flowering species, giving chaste and handsome white blossoms, 15s. each.

ANGULOA CLOWESII..	£0	7	6
CATTLEYA CITRINA	0	5	0
CYPRIPEDIUM BARBATUM PURPUREUM	0	7	6
,, HIRSUTISSIMUM	0	15	0
,, NIVEUM	0	5	0
,, VILLOSUM	0	15	0
DENDROBIUM CAMBRIDGEANUM	0	7	6
,, CHRYSANTHUM..	0	10	6
,, CRETACEUM	0	5	0
,, CRYSTALLINUM..	0	15	0
,, DENSIFLORUM	0	10	6
,, DEVONIANUM	0	3	6
,, FALCONERI	1	11	6
,, HOOKERIANUM..	0	10	6
,, MACROPHYLLUM	0	15	0
,, PARISHII	0	10	6
,, PIERARDII..	0	5	0
,, SENILE	0	7	6
,, SPECIOSUM	0	5	0
,, THYRSIFLORUM	0	10	6
,, WARDIANUM	1	11	6
EPIDENDRUM MACROCHILUM	0	7	6
LÆLIA ALBIDA	0	7	6
,, AUTUMNALIS	0	7	6
,, FURFURACEA	0	15	0
,, MAJALIS	0	7	6
LYCASTE GIGANTEA..	0	15	0
,, SKINNERI	0	10	6
MASDEVALLIA HARRYANA	1	1	0
MESOPINIDIUM SANGUINEUM	0	15	0
ODONTOGLOSSUM ANGUSTATUM	1	11	6
,, BICTONIENSE	0	7	6
,, CITROSMUM	0	7	6
,, ,, ROSEUM	0	10	6
,, CRISPUM (ALEXANDRÆ)	0	10	6
,, CRISTATUM	0	15	0
,, DAWSONIANUM..	0	10	6
,, HALLII	1	11	6
,, HASTATUM	0	7	6
,, HASTILABIUM	0	10	6
,, INSLEAYI LEOPARDINUM..	0	5	0
,, LINDENI	1	1	0
,, LUTEO-PURPUREUM	0	15	0
,, PULCHELLUM GRANDIFLORUM ..	0	15	0
,, RAMULOSUM	0	10	6
,, UROSKINNERI	0	10	6
ONCIDIUM LEUCOCHILUM	0	12	6
,, PENTADACTYLON	0	10	6
,, STELLIGERUM	0	7	6
,, TIGRINUM	0	7	6
,, TRIQUETRUM	0	7	6
PHALÆNOPSIS AMABILIS	2	2	0
,, SCHILLERIANA..	2	2	0
SACCOLABIUM BLUMEI MAJUS..	0	7	6
,, CURVIFOLIUM	0	7	6
SOPHRONITES GRANDIFLORA	0	10	6
WARSCEWICZELLA VELATA	0	15	0

GOOD SELECTIONS OF ORCHIDS
made, at 2, 3 and 4 guineas per dozen.

☞ By sending names of those already possessed, different varieties can be given, and purchasers will have a good selection made for them.

Establishment for New and Rare Plants,
KING'S ROAD, CHELSEA, LONDON, S.W.

SATURDAY, APRIL 29, 1876.

WHAT SHALL WE GROW?

COLLECTIONS or selections, which shall we grow in private gardens? The question would scarcely seem to require answering, as very few would need to hesitate a moment in giving their vote in favour of judicious selections. Yet we very often see the reverse in practice, particularly in the floricultural department of gardening. At the present day we appear to be continually getting out of one flower-fever into another. The fickle flectings of the goddess Fashion pervade even the sober pursuits of gardening. With many the flower or plant whose every beauty was apparent last season or the season before, is thrust in the shade in the present for something fresh. If these changes were the result of improved taste, or based upon real merits in the plants that superseded others, there would be no cause for complaint; but it too often turns out that the plant, or family of plants discarded, is superior in every way to the favourites of the hour. I am not speaking of such things as come under the manipulation of the florist for exhibition, but of plants that are grown by those who are fond of gardening taken in its general sense. I think a good deal of this arises from the mistaken *furore* after some particular family or other of plants that continually keeps cropping up. For a time nothing can be seen or spoken of but Lilies: Lilies in pots, Lilies in the Rhododendron clumps, Lilies in the borders, Lilies in the shrubbery — Lilies everywhere. The whole world, Old and New, is ransacked for everything in the shape of a Lily, good or bad, handsome or ugly: whereas if cultivation were confined to the really deserving kinds, the best representatives of this splendid family of plants would not suffer by association with their weedy relatives.

Then we have the Daffodil fever, until garden and shrubbery are in a perfect vernal jaundice, only to be relieved by their being ousted by an attack of the Primroses, which latter I must confess is a relief from the monotony of colour so objectionably conspicuous in the Daffodils. The pertinaceous Pelargoniums have merely shifted their ground, they have got out of the flower garden into the greenhouse, which in their possession has lost everything but the name, for it is all ablaze, like a field full of Poppies; most likely it would be their turn next, but that the seed is too cheap to make it worth while resuscitating them.

Collections of any particular genus or species of plant are perfectly right in their way, for those who have an especial object in making them, for Botanical Gardens, or for nurserymen who have to provide for customers of all kinds; but, for the generality of private growers my advice is, select the best species or varieties of whatever is grown, and only the best; the more select the selection is the better. There is an immense field to choose from. The greatest charm in a garden is produced by the presence of the most beautiful forms and colours existent in a sufficient number of plants the most diverse in their general character, and suitable to the situation in which they are grown. But these vagaries

in gardening are not alone confined to individual genera of plants, they too often extend far beyond. For a score of years almost the whole class of herbaceous plants with their endless beauty and variety of form and colour, some or other of which enliven the scene for the whole of the year, were well nigh lost sight of except in some out-of-the-way garden, and their place occupied with subjects for summer bedding, first with plants possessing nothing but blazing colours, now with things that do not produce a single perceptible flower, or if they do, which are persistently removed until the whole garden is as full of scrupulously defined colours, yet as innocent of flowers as the pole over a barber's shop. For some time there has been a counter cry by those who would sweep away bedders and bedding plants alike, displaying both ignorance and inconsistency; as it is the excess to which bedding has been carried, and the barbarous uses made of the plants, wherein the evil consists—there probably not having been a single plant, flowering or foliage, employed that an individual possessing good taste could object to were they used in keeping with the simple laws that govern the intermixture of colours, so as never to be allowed in excess, and the still more important use of a sufficient quantity of the almost innumerable plants possessing fine and suitable forms for association with the flowering subjects in a way to avoid all formality. It does not follow because a rood of scarlet offends good taste, and afflicts the eye, that a few inches of the same shade is not desirable when associated with other coloured flowers and plenty of green foliage. In this, as in most other matters, those who entertain extreme views are not safe guides to follow.

In speaking of the plants that have been forced into the bedding service, I have made one slight mistake as to all being unobjectionable when used in the flower garden; I allude to the different varieties of vegetables that have been made to do duty, such as coloured Kales and Beets. Whatever may be their merits as to form and colour, the idea and sight of them in the part of a garden that is associated with the cultivation of the most elegant and beautiful of flowers, is so palpable a violation of the fitness of things that I cannot endure them. Neither is there the slightest excuse for their use, as there are plants innumerable that may be employed in their place superior to them, without any of the objectionable ideas connected with the use of culinary vegetables in such a situation. Even in spring-bedding, when, if we except Tulips, there are very few flowers employed that are in any way gaudy, the greater number being unpretending in form, subdued in colour, and realising to the fullest extent our ideas of the simplicity attached to the homely Primrose and Daisy, the manner in which they are often used, by planting in lines and patterns, renders them just as objectionable as the summer bedders. In both it is the barbarously unnatural arrangement that is in fashion wherein the fault lies, not in the plants used individually.

This may perhaps appear to have little in common with my opening remarks, but I instance it as an evidence of fashion holding too much sway in gardening pursuits. At one time it is some particular species of flower that, whilst in fashion, is done to death, to the utter exclusion of everything else; or some particular style of decorative gardening that is carried to equal extremes. We smile at the taste of the Dutchmen of bygone times, who, whilst the Tulip mania was on them, could see nothing else, and we marvel at the gardeners of our own country in times remote who were wont to take delight in artistically torturing their shrubs into the shape of animals. Are we quite consistent? We are powerless over the inflictions of fashion in some things, but that is no reason why we should let the rage for particular kinds of plants or styles of arrangement exclude others that in each case are much more preferable.

Equally insensate is the length to which the cultivation of unlimited numbers of some kinds of culinary vegetables is carried — notably Peas and Potatos. At the present time we are inundated with scores of varieties of these, many of them not having more than an infinitesimal difference from others that have preceded them, and not possessing a single good property in advance of well-known sorts—often very far the reverse. To such a length is this being carried that the vendors of some of these novelties have the candour not to lay claim for the possession of good eatable qualities in their new varieties, but recommend them for exhibition purposes, or, in other words, simply to be looked at. This is a use for vegetables such as the past generation of gardeners in their simplicity never dreamt of, unless it was something in the shape of a big Pumpkin. The most incomprehensible part of the business is the astounding price large numbers of people are willing to pay for being gulled, not once or twice, but year after year—from 40*s.* to 60*s.* per quart for Peas, and 7*s.* to 12*s.* per pound for Potatos; and in this the self-adjusting balance of supply and demand will, no doubt, be worked out to a nicety. Whilst there are plenty of buyers of these exorbitant priced novelties, they are certain to be forthcoming, and to help them off there is the very ingenious incentive of valuable prizes offered by the vendors; but from the moment the exhibition stage is made a stepping-stone to give character to inferior quality, from that time exhibitions become a positive injury upon the pursuit they represent.

So far as the real interest of gardening is concerned, it matters not by what means the injudicious, indiscriminate cultivation is carried out of any particular family of plants.. Whether grown for their flowers, or for more substantial uses, the result is equally mischievous. Old as the pursuit of gardening is, the field for real improvement is still too wide and far from being exhausted to throw us back upon the cultivation of worthless varieties of plants, or compel us to objectionable arrangements in their distribution in our gardens. *B. T.*

THE CHISWICK GARDENS.

THE trial of bedding Violas and Pansies that proved so satisfactory last year is again being conducted this season at Chiswick, but in order to make room for the large number of sorts now under growth, Mr. Barron has planted two closely-allied sorts in each of the side beds, the yellows being nearest the entrance and the whites at the far end, with the dark hues of purple, violet, blue, &c., in the middle. A number of Dr. Stuart's, and other new kinds, are also planted in some of the lawn beds. Of spring blooming kinds the earliest to produce an effect would appear to be Tom Thumb, Yellow Boy, Corisande (sulphur), White Swan, Snowflake, Bridal Wreath (a large self-white Pansy), The Tory, Royal Blue, Blue King, The Shah, and Imperial Blue Perfection, the later kinds proving more acceptable for summer bedding. The trial is of the greater interest, as the varieties both in the North and South, and of totally different strains, are growing side by side; and it may be generally accepted that whatever kinds will thrive in the warm garden at Chiswick will do well anywhere in the South where a hot summer is commonly more dangerous to the Viola than a severe winter.

An important alteration is now being carried out in the enclosed garden immediately fronting the old Council-room, which has for a long time been devoted to the growth of annuals in quarters and beds, but now this garden has been turfed over and a number of oblong beds formed, and these Mr. Barron purposes devoting to the classification and growth of many kinds of hardy perennials, such as Primulas, Campanulas, Iberis, Aubrietias, Daisies, &c., many of which are now comparatively lost in the herbaceous border. Not only to the *employés*, but also to the Fellows and visitors generally, this garden eventually will prove of great interest, and cannot fail to possess useful educational attributes. The border adjoining this garden is being planted with a varied selection of dwarf Coniferæ, not, however, to the injury of the old Camellias, which are as full of flower as ever. *En passant*, is it not strange that people should still continue to make such a fuss about blooming the Camellia out-of-doors in the South, when these old plants have been growing and blooming here for years?

The herbaceous border beside the lawn is full of a most interesting collection of plants, and in the manner of its keep and healthy vigour of the plants presents a marked contrast to herbaceous borders in some other gardens; there is, however, no classification, and this defect the beds above mentioned are intended to a partial extent to remedy. Probably, nowhere is the old Campanula pyramidalis grown so well in pots as at Chiswick. The plants are used for conservatory decoration in the summer, and most effective they are, as the spikes of blue flowers tower up amidst other plants, and make a fine display. In one house is a collection of over 100 kinds of the double Zonal Pelargoniums, all to be grown and tested in pots this year; also all the comeatable kinds of the Ivy-leaf section, and a numerous representation of the golden and silver-leaved kinds. The many fine varieties of single bedding Pelargoniums will, as usual, make a fine bedding feature in the summer. A large trial of Cauliflowers, both from autumn and spring-sown seed, is in course of observation, and, like all the vegetable trials hitherto there conducted, cannot fail to be productive of interest. Not the least feature in connection with these important trials is the extreme conscientiousness and care with which they are conducted.

There is promise of a large crop of fruit at Chiswick, and on the Apricot trees the crop already set is most abundant. Mr. Barron does not protect his trees, and by not coddling them, perhaps, is generally as well off as those that do. The large collection of Plums in pots promises well, and it is probable that a thorough and complete examination and trial may be effected this year. Chiswick, as a garden, is never without elements of interest, and at this time of the year these increase rapidly. Horticulturists of all sections may often spend an hour there with great advantage.

SOCIETY OF PAINTERS IN WATER COLOURS.

THE exhibition of water-colour drawings by the members of this Society opened to the public on Monday last, and though the exhibition contains many pictures of great merit, there are fewer than usual illustrative of flowers, fruits, &c. 4, "At Penzance, Cornwall—Summer" (Charles Davidson), is a beautiful placid early-summer landscape with haymakers. 45, "Roses in a Portland Vase" (Maria Harrison), is good in general effect but washy, and the picture shows no proper appreciation of Roses; the foliage is especially defective in drawing. 57, "Gatton Park—Early Spring" (Charles Davidson), is equally good with No. 4. 59, "A Donkey that Wouldn't Go" (Birket Foster), is an excellent picture, notable for its sky and distant landscape — the Heather, the Sunflowers on the ground, and the scarlet Poppy close to the donkey's eye are all well done. 69, "Lost in the Wood" (Alfred P. Newton), is an excellent study of Beeches. 71. "In the Market at Toulon" (Birket Foster). This, though a figure subject, is a complete study of florists' flowers, fruits, and vegetables; these latter are all well painted, and include Roses, Geraniums, Fuchsias, Campanulas, Calceolarias, Lilies, Pansies, Richardia æthiopica, Peas, Cabbages, Lettuces, Artichokes, Turnips, Onions, Potatos, Oranges, &c. In the background is a series of well-painted Plane trees; the gigantic umbrellas look like great Mushrooms. 77, "Token Flowers" (Mrs. H. Criddle), is notable for the flowers being as unlike real flowers as possible. 125, "Fountain at Toulon" (Birket Foster), contains many of the objects enumerated on No. 71, with the same umbrellas and Plane trees behind; all the natural objects are extremely good and correct, except the white Lilies, which are painted with five petals instead of six. 155. "In the Botanical Gardens—Water Lilies and Yellow Irises" (*sic*) (Maria

Harrison. This is one of the best pictures we have seen by this artist, but the "Yellow Irises" fall far short of Nature. 179. "The Siren Sea" (Alfred Goodwin), is, we consider, one of the best pictures this imaginative artist has yet produced; the red seaweeds near the dimly seen skulls, and at the bottom of the deep pool near the shadowy siren, are uncommonly good, and no doubt meant to be suggestive of blood. 181. "Roses in a Wedgewood Vase" (Maria Harrison). The same criticism applies to this as to No 45: the vase is ridiculously out of perspective. 185, "Yellow Water Lilies (Maria Harrison), is a picture equally good with No. 155, but most of the characters of the Spiræa and Lythrum are lost, and the colours are unnaturally dull, as are the tints of the dragonflies: the yellow Water Lilies are very good. 222. "Convalescent" (R. W. Macbeth). This is one of the best pictures in the exhibition, and equal to Walker. 238. "Spring Days" (Mrs. Allingham). This, like all Mrs. Allingham's pictures, is excellent; the figure is perfect, and the accessories are the same, viz, the background of Pine, the Primroses, Bluebells, Lychnis, and Chichweed, with fallen cones, are all in their way perfect. 270, "The Day After the Fair" (R. W. Macbeth), is a thoroughly good picture.

A SYNOPSIS OF THE KNOWN SPECIES OF IRIS.—II.

Section Euxiphion.—This paper will be devoted to the species of the section Euxiphion, which are marked from all the other bulbous kinds by having their filaments separate from one another, and from the style down to the base, and the inner segments of the perianth (standards) erect, and nearly as long as the falls.

Key to the Species.

Coats of the bulb membranous.
- Perianth without any tube above the ovary.
  - Limb of the falls shorter than the panduriform claw. — 1. X. VULGARE.
  - Limb of the falls longer than the deltoid claw. — 2. X. LATIFOLIUM.
- Perianth with a distinct tube above the ovary.
  - Acaulescent species. — 3. X. HISTRIO.
  - Caulescent species.
    - Leaves filiform.
      - 4. X. FONTANESII.
      - 5. X. FILIFOLIUM.
      - 6. X. JUNCEUM.
    - Leaves linear-complicate. — 7. X. TINGITANUM.

Coats of the bulb fibrous.
- Acaulescent; perianth with a tube. — 8. X. RETICULATUM.
- Caulescent; perianth without any tube. — 9. X. DIVERSIFOLIUM.

1. *X. vulgare*, Miller, Gard. Dict., edit. 6; Parlat. Nuov. Gen., p. 45; Alefeld, in Bot. Zeit. 1863, p. 297; Baker, in Seem. Journ. 1871, p. 11; *X. augustifolium*, Tournef. Instit., p. 364; Klatt, in Linnæa, 34, p. 569; *Iris Xiphium*, Linn. Sp. Plant., edit. 2, p. 58, ex parte; Bot. Mag., t. 686; Red. Lil., t. 337; *I. variabilis*, Jacq. Coll., vol. 2, p. 231.—Bulb ovoid, ¾—1 inch thick, with firm dark brown tunics. Stem 1—2 feet high, stout, terete, simple, bearing one or two flowers from a terminal spathe. Leaves 4 or 6 below the spathe valves, laxly superposed, clasping the stem at the base, the lowest a foot or more long, linear-subterete, deeply channelled all down the face, 3—4 lines broad where they leave the stem, firm in texture and persistent, narrowed to the point, the upper ones gradually more and more resembling the spathe-valves. Spathe-valves lanceolate, green throughout at the flowering time, moderately firm in texture, 3—4 inches long. Pedicels rather shorter than the longest spathe-valve, ovary cylindrical, an inch long at the time of flowering. Tube scarcely any. Limb 2—2½ inches deep, usually deep violet-purple, the falls with an orbicular reflexing blade about an inch broad and deep, with a dash of bright yellow down the centre, and a broad erecto-patent panduriform claw, which is half as long again as the blade, the standards plain purple, oblanceolate, permanently erect, nearly as long as the falls. Stigmas purple, with the entire part above an inch deep, with two oblique crests rounded on the outside, above half an inch deep. Anther ⅝—¾ inch long, equalling in length the free flattened filament.

Ranges through Spain, ascending from the coast-level to a height of 6000 feet, and occurring also sparingly in Corsica and the South of France. It is a very old garden favourite, being a plant figured by Lobel, and enumerated by Gerarde as one of those cultivated in his garden. It is commonly called the Spanish Iris, or Iris hispanica, and flowers in June. It is scarcely at all scented, and varies greatly in colour, the type being deep lilac-purple; but there is a white variety, and it passes by gradual intermediate stages into the Portugal Iris.

Var. *lusitanicum*; *Xiphion lusitanicum*, Alefeld, in Bot. Zeit. 1863, p. 297; Baker, in Seem. Journ. 1871, p. 12; *Iris lusitanica*, Gawl. in Bot. Mag., t. 679; Ait. Hort. Kew, edit. 2, vol. i., p. 121.; *I. juncea*, Brotero Fl. Lusit. i., p. 51; Webb, Iter. Hisp., p. 9, non Desf.—Flowers bright yellow, or in the form *X. sordidum* of Salisbury, more or less suffused with brown.

A native of Portugal, of which the wild specimens which I have seen were gathered near Cintra by Sir Walter Trevelyan and Dr. Welwitsch.

2. *X. latifolium*, Miller, Gard. Dict. edit. 6; Klatt, in Linnæa, xxxiv., p. 570; Baker, in Seem. Journ. 1871, p. 12; *Iris xiphioides*, Ehrh. Beitrage, vol. vii, p. 140.; *I. Xiphium*, Linn. Sp. Plant., edit. 2, p. 58, in part; Jacq. Collect., vol. ii., p. 320; *I. pyrenaica*, Bubani, Sched. Crit., p. 3.—Bulb ovoid, 1½—2 inches thick, with several dark brown membranous coats. Stems stout, terete, 1—2 feet high, unbranched, ending in a single spathe, which bears two or three flowers. Leaves about half-a-dozen in a basal tuft, and three or four smaller ones from the stem below the spathe; the lower ones a foot long, linear, deeply channelled down the face, ⅝—½ inch broad where they leave the stem, narrowed gradually to the point. Spathe about 3 inches deep, the valves broader and more inflated than in the last species. Ovary cylindrical, 1¼—1½ inch long, about equalling the pedicel. Tube of perianth none. Limb 2½—3 inches deep, typically deep lilac-purple, the round-oblong blade of the falls above an inch broad, flushed with yellow down the face, and rather exceeding in length the deltoid claw, the permanently erect oblanceolate purple standards about half an inch broad, and decidedly shorter than the falls. Entire portion of the stigmas an inch deep, the crests rather smaller than in the last. Anther ⅝ inch long, exceeding the filament. Capsule cylindrical, 2½ inch long, ½—⅝ inch thick, narrowed from the middle to both ends.

A native of the meadows of both the French and Spanish flanks of the Pyrenees, and extending also to the mountains of Asturias. It is the Iris anglica of the gardens, and is an old and well-known garden favourite. It flowers in July, after X. vulgare has faded. There are numerous varieties in the colour of the flower—white, pale lilac, deep lilac, purple, with a yellow keel, and a very fine one, which I saw at Mr. Ware's, at Tottenham, in 1874, white, mottled with crimson. The whole habit of the plant is more robust than that of X. vulgare, the spathe both before and after the flowers protrude much stouter, and the shape of the falls is materially different. *I. spectabilis*, Spach. Ann. Sc. Nat. iii., vol. v., p. 93, appears to be a garden hybrid between this species and the last.

3. *X. Histrio*, Hook. fil. in Bot. Mag., t. 6033; *Iris Histrio*, Reich. fil. in Bot. Zeit. 1872, p. 488; *I. Libani*, Reuter MSS.—Bulbs cæspitose, ovoid, half an inch thick, with a dense tuft of thread-like rootlets at the base. Leaves about two to a tuft, and produced with several others on the outside rudimentary and membranous, the former overtopping the flower, and finally reaching a foot in length, subulate, acutely quadrangular, ⅛ inch thick. Stem none, so that the one-flowered spathe is sessile in the centre of the leaf-tuft; valves linear, acute, 3—4 inches long, membranous at the top. Ovary cylindrical, an inch long, elevated on a short pedicel. Tube 3—4 inches long, filiform, exserted from the spathe. Limb 1½ inch deep, lilac-purple; falls copiously spotted and streaked with lilac-purple on a paler ground, and faintly keeled with yellow down the face, the oblong reflexing lamina half an inch broad, as long as the claw, which is narrowed gradually from the top to the base; standards plain lilac, oblanceolate, erect, ¾ inch broad. Entire part of the stigmas an inch long; crests lanceolate. Anthers ½ inch long, equalling the filament.

A native of Palestine, on the Lebanon range and Mount Gerizim. The bulbs were sent twelve years ago from M. Gaillardot to M. Boissier, and it was figured in the *Botanical Magazine* from specimens forwarded by M. Barbey. It is the doubtful plant from Palestine mentioned in my monograph under X. reticulatum. It is a most distinct and handsome species, allied most nearly to X. reticulatum, with which it agrees in its acaulescent habit and quadrangular leaves. At Geneva it shows its flowers in the first week in February, when the leaves of reticulatum are just pushing through the soil, and it is quite destitute of the delightful violet fragrance that is one of the great recommendations of its older-known botanical neighbour.

4. *X. Fontanesii*, Baker; *Iris Fontanesii*, Godron, Fl. France, vol. iii., p. 245; *I. Xiphium*, Desf. Fl. Atlant., vol. i., p. 37, not Linn.—Bulb ovoid, an inch thick, with brown membranous tunics. Stem a foot or more high, with a single terminal 1—2 flowered spathe. Leaves about half a dozen, superposed, terete, a line thick away from the stem, deeply channelled down the face, the lowest ½—1 foot long. Spathe 3—4 inches long, with thin green lanceolate valves. Ovary an inch long, elevated on a distinct pedicel; tube cylindrical, 1—1¼ inch long above the ovary; limb 3 inches deep, lilac-purple; falls with an orbicular lamina an inch broad, much shorter than the broad panduriform claw; standards oblanceolate, erect, half an inch broad. Stigmas 2 inches deep, including the large toothed, half-orbicular crests. Anthers ligulate, ⅝ inch deep, equalling the filament.

A native of Algeria. The specimens I have seen were collected by Balansa and Bourgeau, both near Oran, flowering in the middle of April. The only appreciable mark of difference from X. vulgare is in the presence of a cylindrical tube between the perianth segments and the ovary. It has not yet been introduced into cultivation.

(*To be continued.*)

THE COCA.

At the April meeting of the Edinburgh Botanical Society, the President, Sir Robert Christison, Bart., contributed a paper on "Observations on the Effects of the Peruvian Coca or Cuca (Erythroxylon Coca, Lam.)."

The first part of the paper is taken up with a comparative statement of the effects of the Cuca leaf, as described by Garulasso de la Vega and other Spanish authors in the sixteenth and seventeenth centuries, and in the present century by four separate travellers of good authority—Pöppig, Von Tschudi, Weddell, and Clements Markham. The result is that the unfavourable statement and opinion of Pöppig, who thought the habit of using Cuca as detrimental as opium-eating and drunkenness with spirits, appears to have been exaggerated, but derives so far some confirmation from the trials made of it in Europe by Mantegazzi, of Milan, in 1859, that, should it be proposed to add the Cuca of Peru to the restorative tea, coffee, and chocolate of this country, some caution must be observed in studying its action in various circumstances, as it would almost seem to be detrimental to some, and, on the other hand, to have but little effect of any kind on others, at least in ordinary doses.

No doubt, however, can exist, looking to the concurrent testimony of all travellers in Peru since Poppig was there from 1827 to 1832, that when taken in moderation by most people, and not too often, it has wonderful power in preventing fatigue under exercise protracted, exhausting, and indeed impossible without it; and that no injurious or unpleasant result ensues subsequently. The paper then described shortly the plant, the precautions absolutely necessary for preparing the leaves, and especially for preserving them, and the characters, both for recognising the true leaf and for judging of its quality. Then followed a short account of experiments by others of the physiological action of Cuca and its principle, cocaine, as preparatory to trials made with it by himself, and by fourteen gentlemen at his request and under his instructions. The conclusions from these trials are (1) that taken in quantities of two drachms by healthy persons it has no injurious, unpleasant, or suspicious effect whatever; (2), that in a very few cases this dose of an inferior sample had no effect at all; (3), that in by much the greater number of instances, and with a fine sample in every case, extreme fatigue was removed and prevented from returning, and that no doubt can exist that in such persons its restorative and preventive powers will render protracted exercise easy, without any subsequent harm, so far as the restorative is concerned; (4), that it does not in the end impair the appetite or digestion, although hunger, even after long fasting, is taken away for an hour or two; (5), that the use of it probably does not agree with more than a very moderate use of alcoholic stimulants at the same time. The paper avoided all reference to the possible medicinal uses of this plant. It is likely to prove serviceable, but the little already known of it in this respect is scarcely enough to direct inquiry.

The author concluded by observing that, among the numberless correspondents created by a notice in the London papers of his introductory address to the Botanical Society in November last, there were those by whom he had been asked whether Coca would be good for a weak female heart, a paralytic husband, and an elderly lady who desires to become again a juvenile pedestrian; but that he knew only its effects on healthy masculine subjects, and nothing of its

medicinal uses; and therefore that persons out of health should be cautious, and take no Cuca without consulting their own physician at home.

Dried specimens as well as fresh specimens of the plant were exhibited. The plant has flowered freely this spring in the stove at the Royal Botanic Garden, Edinburgh.

CARPET BEDDING.

As the season has again come round when the designs for the bedding-out must be decided upon, we think it well to publish the ground-plan (fig. 99) of a large and exceedingly effective scroll bed which Mr. MacIntyre planted last year in Victoria Park, and which proved a great source of attraction to the visitors throughout the summer. The margin was constituted by Echeveria secunda glauca, and within this was a band of Alternanthera amœna magnifica, projected inwards in the form of semicircles, enclosing Antennaria tomentosa, dotted with Sempervivum arboreum, S. tabulæforme, and other similar plants. The ground colour was furnished by Golden Feather, dotted with various bold-foliaged succulents. The central space at the intersection of the two half scrolls was occupied by Coleus Verschaffeltii Improved.

RARE CONIFERS.

Picea religiosa.—The accompanying figure of the cone of this most lovely Silver Fir (fig. 100, p. 561) is the portrait taken by Mr. Worthington Smith of a freshly-cut specimen that was forwarded to the Editors by the Hon. and Rev. J. T. Boscawen. It is the first instance so far as we know of the tree coning in Great Britain or Ireland, indeed the first instance of which we have heard of its reaching the maturity from which fruit might be expected. We have always been accustomed to regard this species as one of those ungrateful subjects that, fostered by care and attention, might gladden our eyes with its beauty for a number of years, only to make the disappointment more keen by succumbing to the cold of the first severe winter that put its powers of endurance to the test. Nor are we disposed much to modify our opinion by the present instance to the contrary. We all know that there are some mild spots in the south-west of England and south of Ireland, where plants which are tender everywhere else in Britain not only live but thrive and flourish. The specimen in question was taken from a tree in the grounds of J. J. Rogers, Esq., of Penrose, near Helston, Cornwall. The tree, we learn, is 25 feet in height, about thirty years old, and was transplanted in 1857, but never bore cones till the present time, when it has fully forty cones upon it. The locality is just one of those where we should expect a doubtfully hardy species to stand; and on looking back to the tables of the effects of the winter of 1860-61 which Mr. Palmer, of Manchester, compiled, and which he was good enough to deposit in our hands, we see that with scarcely an exception the places where it stood the severity of that season without injury, or with only slight injury, were on a par with the Cornish locality—"Woodstock Park, Kilkenny, uninjured;" "Castle Martyr, Cork, only slightly injured." At Hafodunos, Denbighshire, it escaped, and at Kew; but at Kew it was "sheltered," elsewhere it was killed. One tree at Highnam Court had reached 15 feet in height, and we have a note that in a previous severe winter (that of 1853-4) it had escaped by being protected. The last time that we paid a visit to Munches, Mr. Maxwell showed us some young trees of this species in his plantations in the greatest beauty and freshness, but, in the first place, they were still young (4 feet high or so), and had as yet encountered no severe winter or rough treatment, and it goes without saying that they were placed in the cosiest and best sheltered nooks he could find, but always without any artificial shelter; and in the next place it has to be admitted that the stewartry of Kirkcudbright, in which Munches lies, is, perhaps, in the warmest part of Scotland and very far from that most exceptional spot we have all heard of—"Castle Kennedy," in Wigtonshire, where the tenderest Conifers seem to live, and where, as in duty bound, Picea religiosa withstood the winter of 1860-61.

It is a long time now since we have heard anything of the progress of this species in Britain. The knock-down blows of 1860-61 for many years deterred people from planting it, but we are not a nation that easily gives in, and we imagine that plenty of men must have tried it since. In the interests of horticulture and arboriculture we long to have some fresh statistics of its behaviour, and we hope those who have tried it will good-naturedly gratify our wish and supply them.

We are the more desirous to know where any thriving specimens are to be seen since we believe if its beauty were once generally known and there was a fair probability of its living, were it only for a dozen of years, it would be very generally cultivated for its young beauty. "Caparisons are odorous," and there is no common ground from which unlike species can be contrasted. How can we compare an Oak with a reed, and say that the one is more beautiful than the other? So we cannot pretend to strike a balance between such favourites as nobilis, Webbiana, Douglasii, Albertiana, or religiosa—of each we would say that we think it best "were t'other dear charmer away." Each is distinguished by some special beauty of its own, and that of religiosa is the graceful dependence of its habit, the lovely green of its leaves, and the snowy silver of the underside. It is one of the trees which the natives of Mexico and Guatemala make use of to decorate their churches and altars with its branches, and that this is no common praise will be admitted by the reader when he remembers that it was from the Orchids brought into the churches for the same purpose that Mr. Skinner made his first acquaintance with the beautiful species that he afterwards introduced into this country from Guatemala.

It was first noticed by Humboldt, and subsequently by all the principal botanists and collectors who have explored or treated of the plants of Mexico—Schiede and Deppe, Hartwig, Seeman, Roezl, &c., have all helped to make it known. Mr. Gordon mentions that Roezl found a beautiful glaucous variety of it growing on the "Mont de las Cruces," which has the leaves so glaucous or silvery on each side that at a great distance the trees seemed covered with snow. We agree with Mr. Gordon in thinking that from the description that must be a different species, especially as he mentions that its cones when young are deep purple instead of being a bright green, which is the colour of those of Picea religiosa. There is considerable variation, however, in the size of the cone; we received cones from Mexico not half the size of those figured in our woodcut. [Loudon represents them as only 1½ inch long.] It is a tree that is said to reach 150 feet in height in its native country. *Andrew Murray.* [The figure shows, in addition to the cone, separate views of the bract, scale, seeds, and leaf, together with a transverse section of the latter. Eds.].

REPORT ON PLANTS GROWN FOR TRIAL AT CHISWICK IN 1875.

By THOMAS MOORE, F.L.S., Floral Director.

It was stated in the last report of the Chiswick Board of Direction, that the work in the floral department had been in some degree crippled by the diminished facilities granted to the superintendent, but that nevertheless some very good work had been accomplished. This consisted in the cultivation, with the view to a comparison of their merits, of collections of eighty-two varieties of bedding Pansies, of 125 varieties of Fuchsias, and of 350 varieties of bedding Pelargoniums. The Floral Committee held several meetings during the blooming season for the critical examination of these collections, and awarded twenty-three certificates of merit to different varieties of Pansies, twenty-one certificates of the best varieties of Fuchsias, and seventeen certificates to Pelargoniums which were considered as improvements on those previously rewarded.

The following are descriptive notes of the several varieties in each group to which certificates were awarded, the notes being sufficient to give some notion of the habit, colour, and characteristics of the kinds, and also to afford some clue to their identification.

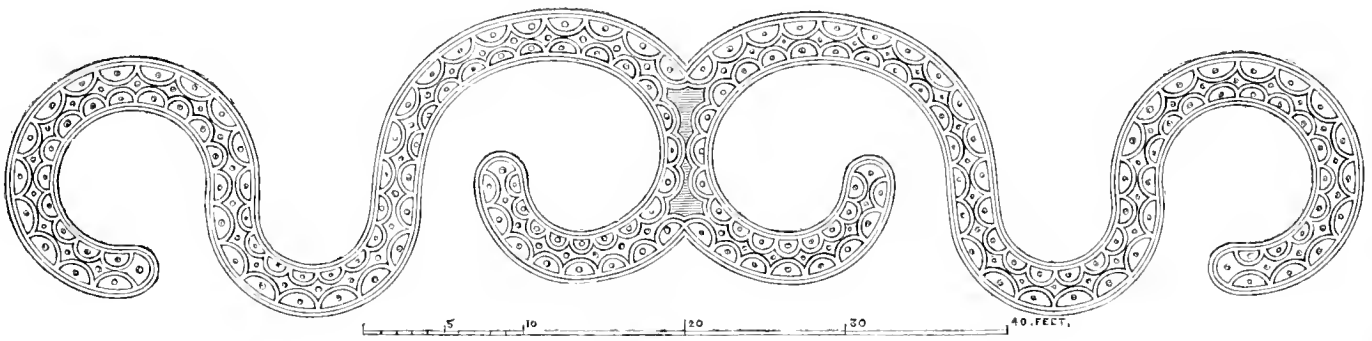

Fig. 99.—CARPET BED IN VICTORIA PARK.

Bedding Pansies and Violas.

The varieties of these plants subjected to the test of trial were contributed by Messrs. Dickson & Co., of Edinburgh, Messrs. Cocker & Sons, of Aberdeen, Mr. R. Dean, of Ealing, Mr. G. Westland, of Witley Court, Dr. Stuart, Messrs. Milligan & Kerr, and Messrs. Robertson & Galloway. Those only are here described which obtained certificates. In several instances the certificates granted in 1874 under less favourable conditions were now confirmed. The plants were inspected by the committee on June 9, and again on July 16. The following may be regarded as a selection of the best of the bedding Pansies, chosen from the point of view of showing compactness and dwarfness of habit, profuseness and continuity of bloom, and useful and effective colours, rather than that of size and shape in the individual flowers—chosen, in fact, for those special features which give them their value as bedding plants.

First-class Certificates.

1. *Alpha* (Dickson & Co.).—A very compact-growing, vigorous-habited, free-flowering variety. Flowers large, bluish purple, with a reddish flush; the eye yellow, with a bilobed dark spot in front. Good and lasting.

2. *Bedfont Yellow* (Dean).—A free-growing compact-habited sort. Flowers large, bright golden-yellow, with pencilled eye. Good and effective.

3. *Blue Bell* (Dean).—A very showy variety of compact, spreading, free-blooming habit. Flowers numerous, medium-sized, mauve-purple, with a small yellow eye pencilled with dark lines. The individual flowers are deficient in shape, but the effect of the mass is good, and the plant is a continuous bloomer. Awarded a First-class Certificate in 1874, which was now confirmed.

4. *Blue Perfection* (Westland).—Of compact free-

blooming habit. Flowers medium-sized, of a deep reddish mauve, with yellow eye. A fine effective self-coloured variety. The variety sent in as Purple Perfection proved to be the same as this.

5. *Dr. Stuart* (Stuart).—Of dwarf compact habit. Flowers mauve-purple, with small yellow eye surrounded by a narrow dark ring. A neat and pretty flower.

6. *Golden Gem* (Dickson & Co.).—A variety of dwarf spreading habit, and a free bloomer. Flowers large, deep yellow, with deeper eye, over which occur dark pencillings. Good and lasting. Awarded a First-class Certificate in 1874.

7. *Lilacina* (Dean).—A charming variety of dwarf compact spreading habit, free-growing, and very distinct. Flowers of moderate size, the upper petals of a reddish lilac, the lower ones bluish lilac, with small yellow eye. An exceedingly pretty and taking flower.

8. *Lothair* (Dean).—A novel variety, with a dwarf compact habit of growth. Flowers large, deep purple, with small yellow eye and broadish bronzy spot just below it on the lower petal. A distinct and rich-looking flower, of lasting quality.

9. *Lily-white* (Dean).—A very useful Tom Thumb variety, of free compact spreading habit. Flowers white, with yellow eye and dark pencillings. The flowers are tolerably constant as to purity, but they occasionally blotch in hot weather. The First-class Certificate awarded in 1874 was confirmed.

10. *Magpie, or La Pie* (Dean).—An old French variety, still useful because striking in appearance from the strongly contrasted colouring of its flowers. It is of vigorous but rather tall-growing habit, of a hardy constitution, and an abundant bloomer. Flowers blackish mulberry, with a large wedge-shaped spot of white at the tip of each petal; the spotting sometimes runs out, when for a time the flowers become self-coloured.

11. *Mulberry* (Dean).—A dwarf-growing variety of compact but spreading habit, and free-flowering. Flowers dark reddish plum-purple, with very small yellow eye; the flowers are well displayed. The First-class Certificate of 1874 was confirmed.

12. *Novelty* (Cocker & Son).—A showy variety, of free-growing habit, but growing rather tall. Flowers reddish or puey purple, with yellow eye; showy. A pleasing variety amongst the self-coloured flowers.

13. *Peach Blossom* (Dickson & Co).—An attractive variety of close habit, and a free-bloomer. The flowers, which are of good form, are of a curious motley colour, a reddish or puey lilac, paler at the tips. Its neutral tint was thought likely to be useful in grouping.

14. *Princess of Teck* (Dean).—A very free-growing variety, and a continuous bloomer. The flowers are large, of good form, and of a pale bluish lilac. It is pencilled eye. Very effective, and a good lasting variety.

19. *The Tory* (Dickson & Co.).—A variety of free and vigorous growth, blossoming abundantly and continuously. Flowers large, deep bluish purple, with white eye and a bilobed mulberry spot in front of it. Good throughout the season. The First-class Certificate awarded in 1874 was confirmed. Under the name of Monarch was grown a variety not distinguishable from this in the colour of its flowers.

20. *White Swan* (Dean).—A fine variety, of close tufted habit. Flowers of moderate size, pure white, with pencilled eye, of good substance, and very clean and chaste-looking; fine.

21. *Williams* (Stuart).—A free-blooming variety, raised from Viola cornuta fertilised by True Blue, a dwarf Viola like Perfection. It is dwarf and spreading in habit, the individual flowers being small, cornuta-like, and of a light mauve colour. The plant is very effective from the great number of its flowers, which are produced in succession till late in the summer.

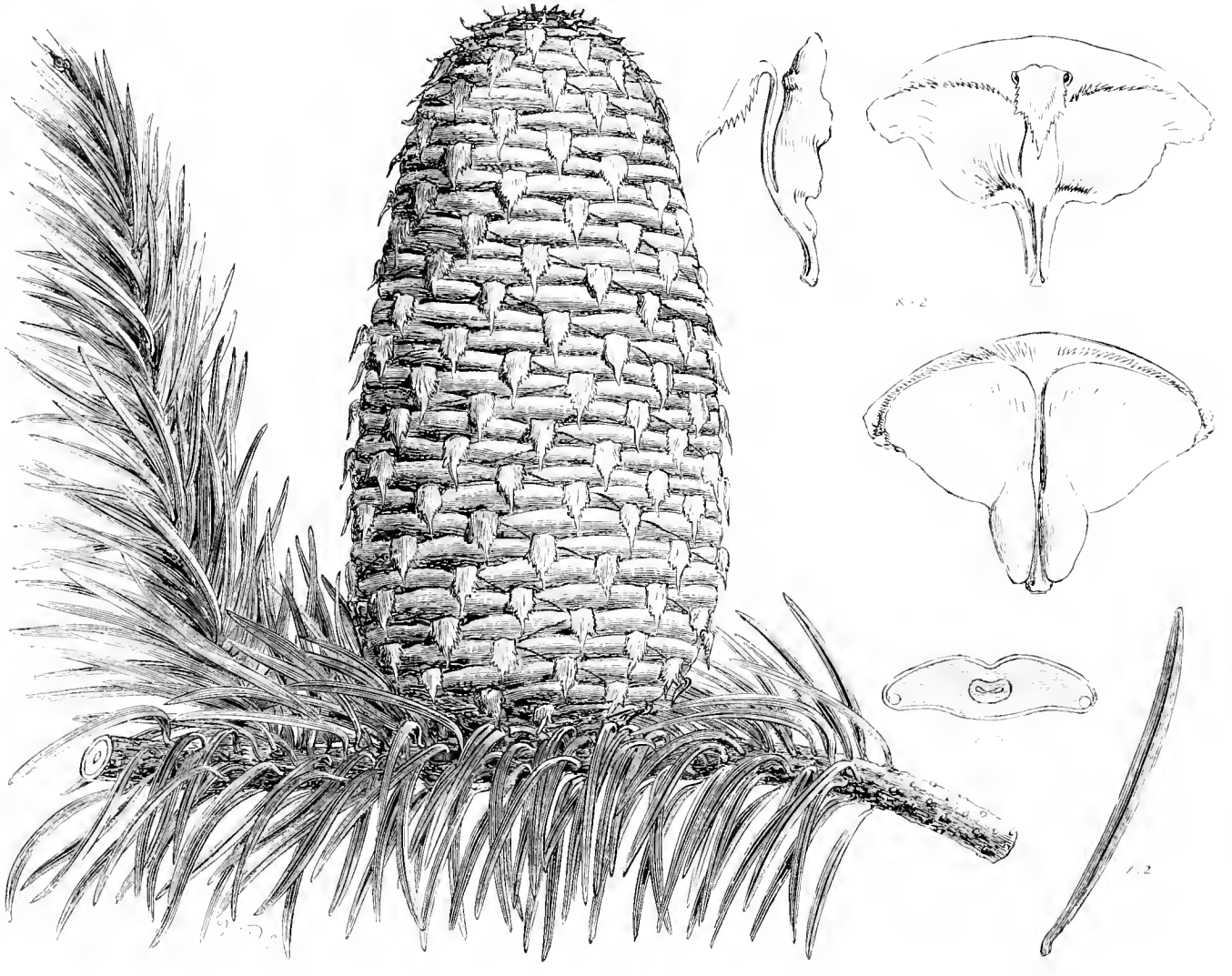

Fig. 100.—Cone of Picea religiosa, grown in Cornwall.

15. *Queen* (Dickson & Co.).—A variety of free compact habit, an abundant bloomer, but rather later than some others. Flowers large, white, with yellow eye and dark pencilled lines. The First-class Certificate awarded in 1874 was confirmed. It is not, however, a lasting sort, as it was quite out of bloom when inspected in July.

16. *Queen of Lilacs* (Dickson & Co.)—A variety of free bold habit, forming close vigorous tufts. Flowers reddish lilac, paler at the edge, being freely produced; a soft neutral colour, and useful for grouping. It was considered to be novel and effective, and on these grounds received the certificate.

17. *Royal Blue* (Dean).—A deep purplish blue, with a dark eye. A showy and attractive flower, of good quality, and lasting.

18. *Sovereign* (Dickson & Co.)—Of close-growing habit, dwarf, free, and prolific of blossoms. Flowers moderate in size, of a bright deep golden-yellow, with a

Second-class Certificates.

22. *Snowflake* (Dickson & Co.).—A moderately vigorous sort, of free-flowering habit. Flowers white, with a yellow eye marked by a few faint lines.

23. *Tyrian Prince* (Dean).—A handsome variety, awarded a First-class Certificate last year, but now ranked second-class; of free, compact, stout-growing habit. Flowers large, dark velvety mulberry-purple, with small yellow eye.

A few of the sorts certificated in 1874 were passed over on this occasion as not being in a satisfactory condition as to habit or continuity of bloom. To this category belong Imperial Blue Perfection, Miss Maitland, Dickson's King, and Chieftain.

(*To be continued.*)

Florists' Flowers.

CARNATION DRESSING: *A Personal Explanation.*—We have received a letter from "D., Deal," regretting that anything that he may have said should have given pain or offence to Mr. Dodwell, and while retracting such expressions he tenders a full apology for their use.

—— Seedlings from AZALEA MOLLIS, of which a large number are now being produced, give us a valuable race of flowering plants very suitable for forcing purposes. Messrs. R. P. Ker & Co., of Liverpool, who showed some fine seedling forms at the meeting of the Manchester Botanical and Horticultural Society on the 25th inst., state that they have raised some 5000 seedlings, and with but very little trouble indeed. They have had them in full bloom from the middle of January onwards. Not the least of the qualities belonging to the race is the great freedom with which they bloom.

—— One of the most beautiful of the new alpine AURICULAS is MAUVE QUEEN, a lovely variety raised by Richard Gorton, Esq., Eccles, near Manchester. It is supposed to be a seedling from Conspicua, and has a white centre, a dark plum-purple ground colour, beautifully edged or shaded with bright mauve, which is regularly displayed and well defined; the pip large, circular, and bold. This was selected as the premier flower in its class at the meeting of the National Auricula Society at Manchester on the 25th inst.

—— A most extraordinary break in seedling AURICULAS was exhibited at the recent National Auricula Show at Manchester, which served to throw some light on the question of cross-breeding, in order to secure definite results. They represented a progeny obtained by the Rev. F. D. Horner, who crossed a fine grey-edged variety, named Charles Brown, with the pollen of another fine flower in the same section, named George Levick. A number of yellow-flowered seedlings was thereby obtained, some quite self-coloured, among them one which appears likely to take a high place in the estimation of florists, and others having the ground or body colour of yellow edged with pale green. Some of the last are remarkably distinct, and promise to give us quite a new race of Auriculas, if followed up. They are very pretty, and might be made to give us a section of fancy Auriculas. Whoever takes them in hand should completely isolate them from any fine-edged varieties, if the latter are to be used for seed purposes.

—— What great improvements, says the *Florist and Pomologist*, have been worked amongst DELPHINIUMS during the past few years! A bed of them finely flowered is a striking object in its rich hues of blue. The double and single forms alike have been subject to the change, and the long huge symmetrical closely-set spikes are objects of great beauty. Among the double flowers the following are particularly fine:—Argus, azure-blue, striped and tipped with rose; Claire Courant, bright azure-blue, distinct and very fine; grandiflorum plenum, rich dark shining blue, tinted with bronzy red, large full flowers; Herman Stenger, outer petals bright violet-blue, centre petals rosy pink, very fine; Keteleeri, a distinct and a beautiful variety, producing freely dense spikes of lavender-blue flowers; Paul et Virginie, outer petals bright blue, centre petals bronzy red, striped and edged with white, very showy and striking; Roi Léopold, outer petals bright blue, inner petals rosy violet, centre sulphur and white, very fine; and Thiers, azure-blue, centre white and rosy pink, very distinct and beautiful. Of the single flowers, which, after all, are the most striking, the following are effective:—amabilis, azure-blue, changing to rosy lilac, white and orange centre, a very distinct, effective, and very beautiful variety; Celestial, ultramarine-blue, with very conspicuous velvety brown centre, very effective and striking; formosum lilacinum, light lavender tipped with pink, ornamented white centre, very distinct and extra fine; La Belle Alliance, bright violet-blue, with a white and orange centre, very beautiful; Madame Henri Jacotot, bright azure-blue, suffused with delicate rosy pink; nudicaule, bright orange-red, dwarf, very distinct and effective; and pulcherrima, rich shining blue, changing to reddish bronze, orange and white centre, a very distinct, effective, and beautiful variety.

DAFFODILS.

I STAND, as once I stood of old,
Upon a meadow's green and gold,
This sunny April day;
The little Daisies kiss my feet,
The blackbird's call is clear and sweet,
And care is far away.

A solemn peace lies on my heart,
So lately wont to throb and smart,
And chafe at human ills;
I lift my face to feel the breeze
That wanders through the budding trees
And shakes the Daffodils.

How sweet they show to weary eyes,
These hardy yellow blooms that rise
On slender fluted stalks!
They need no culture, thought, or care,
But spring with Spring-time free and fair
O'er all our common walks.

On meadow green, by leafy hedge,
In woodland shade, and rushy sedge,
By little lowly rills;
While yet the north wind blows his blast,
Before the storm and sleet are past,
Laugh out the Daffodils.

They rise this year from last year's grave,
And all their golden tassels wave
As blithely now as then.
So I, who love their beauty so,
Rise up this year from last year's woe,
And gather flowers again.

What though from many a dream I part,
I feel the Spring-time in my heart,
My tired sorrows cease.
I whisper to the yellow flowers,
"This year shall bring me summer hours,
And deeper, surer peace."

What though the feet that walked with mine
Through last year's days of shade and shine,
Among my native hills,
Have wandered from my side, and I
Stand lonely under God's blue sky
Among the Daffodils—

What though the hand which held my own
In love's own clasp, while love's own tone
Grew tender unto pain,
Has left my poor hand thin and cold—
I bring the trusting heart of old
To these bright flowers again.

—*Exeter Flying Post.*

Foreign Correspondence.

DROSERA PELTATA.—[The following interesting particulars concerning the natural habits of Drosera peltata, written by his son, have been kindly forwarded by Mr. C. Edmonds, of Chiswick House. EDS.]—Many thanks for the *Gardeners' Chronicle*, in which I see a very interesting account of the Venus' Fly-trap. Strangely enough, I in my rambles noticed some time ago what appeared to me a curious little plant. The peculiarity of its leaf attracted my attention first, at the time of its first appearance above the surface. This was in August; it seemed then to be just springing up. Later on I noticed it again on the Murray River; it was then about 3 inches high, the leaves about half an inch apart up the stem. I then examined it more closely, and found the leaves to be covered with a sort of green hairs. At the end of each hair was a sticky substance, like diminutive dew-drops; the leaves are concave, smooth at the back, but have a very forest of hairs on the inside. Its appearance awakened a peculiar interest in me, and I determined to watch it more closely; opportunities failed, and it was not until about three weeks ago that I discovered flies entrapped in nearly all the specimens that I picked. I thought this strange, and imagined there must be something peculiar about the plant to cause this; at any rate, our work in the field was done—we had completed our surveys, and on arriving home the *Gardeners' Chronicle* was lying on my bedroom table, having arrived by the mail in my absence. I opened it, scanned it over, and saw an article headed the Venus' Fly-trap. The name was unfamiliar to me, so I read it; but not much, before I was struck by the resemblance it bore in description to my Fly-catcher (this is the name I had given it). The specimens accompanying I gathered on October 17; there were flies in each specimen, as you will see upon examination, if not disturbed by their trip. The Fly-catcher grows to an average height of 6 inches. I have seen some 12 inches. There are great quantities in this (Ovens) district, and, of course, it may be equally plentiful in other parts of the island for anything I know to the contrary; this is the first place I have noticed it. This description may be superfluous, as in all probability the Fly-catcher is known well to the botanists of Australia, as also to those of England. My object in writing this description is to endeavour to aid those who are better able to examine the habits of this truly interesting little plant. If it is attained, it will be a pleasure to me to know I have in some way contributed to the solution of what is to me a mystery, namely, Do these so-called carnivorous plants live on flies? And if so, would the exclusion of one of these plants from all fly-food result in its death? [Most probably not. EDS.] *Charles Edmonds, Yuckandandah, Ovens District, Victoria.*

Garden Operations.

PLANT HOUSES.

GREENHOUSE HARD-WOODED PLANTS.—Azaleas that have been brought into flower in heat to succeed the earlier bloomed plants should, as they go out of flower, be at once placed in a house or pit, where they can be accommodated with a moist warm atmosphere to push on the growth without subjecting them to any check. All those plants that are in anything approaching a vigorous healthy condition will have pushed their young growth freely during the time the flowers have been coming on, and if this growth gets checked by the plants being treated in the way not unfrequently seen—by putting them after flowering for a time in a cold house until the whole stock, including the latest bloomed ones, can be grown on together—the result will be that the young growth so far advanced will become stunted and not move freely afterwards. Such Azaleas as finished flowering some time since, and that require larger pots, will now be in a fit state for moving. The practice of growing these plants in loam, was at one that time prevalent, is now all but given up for the use of peat, which is much better suited to their requirements, as the growth and quality of the flowers which they make in the latter are much superior to those which can be produced by plants that are grown in loam: they will also live much longer in peat. A mixture of peat and loam, as used by many, is not to be recommended, for where this is employed with Azaleas, as with all other fine-rooted plants that prefer peat, the roots, if examined, will generally be found thickly crowded in the pieces of peat, with comparatively few in the loam—at once showing their preference for the former. The mixture of peat and loam that is so often recommended for the growth of hard-wooded plants is simply a mistake. With very few exceptions, such things that succeed in loam are better grown in it alone, and those that like peat do the best when confined to it, without any admixture of loam. When the objectionable practice was general of sifting the soil through a fine sieve before potting, even in the case of large plants, the effect of mixing soils of the above description was less apparent; but under the more modern system of cultivation hard-wooded plants make as much progress in three years as they used to do in five—a state of matters that has in some measure been arrived at by the use of soil more in accordance with the requirements of the plants. The extremely fibrous nature of the peat, that has been found not only conducive to rapid growth in hard-wooded greenhouse subjects, but also to their long existence in a vigorous, healthy state, at no very remote time was thought unsuited to their requirements, by reason of its shrinking as decomposition went on in after years; but this has effectually been got over by, in potting, ramming the new soil until it is as close and solid as possible.

Greenhouse foliage plants should now receive attention in potting. This section of plants does not in many places get nearly so much notice as it deserves; yet the plants are even more worthy of general cultivation than such as require more heat to grow them, for although the fine-leaved stove plants make a splendid appearance when well-managed, yet there exists the disadvantage that they cannot be used for the decoration of cool conservatories in the winter season in the way that the cooler section can. Amongst the most stately and effective is Dracæna Draco. It is alike handsome in either a small or large state, and can be kept in a healthy, thriving condition without so much pot-room as it often receives. The principal thing is to secure plants to begin with that are free from scale, especially the white species, for, if it is present even in ever very quantities, it increases very fast, and is a source of endless labour and annoyance; and to keep them clear of red-spider, for, if this pest gets possession of the leaves, and is left undisturbed, it will quickly injure them beyond recovery, causing the lower ones to fall off, which effectually spoils the plants, otherwise they will remain furnished down to the bottom until they have attained a large size. The plant is much improved by the application of manure-water during the growing season. Through

the winter it should not for any length of time be kept too cool; a temperature of 45° will suit it. *T. Baines.*

FLOWER GARDEN.

The busiest time of the whole year for the flower gardener is at hand, and for the next month or six weeks it will require both energy and good management to keep the work from falling in arrear. Personally, when work has been pressing, we have sometimes found the old maxim of "Never put off till to-morrow what ought to be done to-day," of the greatest service to us, and as there is not as yet a trade union amongst gardeners with the nine hours' movement as a part of the programme, one has been left to work in peace for something like fifteen or sixteen hours' a day over the busy season with satisfaction to all concerned. We know dozens of gardeners that thus work, the only incentive being the ambition to enjoy the result of their own labours to the full by having the gardens under their charge in the best possible order. How fortunate it is for employers that there is in all true gardeners an inherent love of their profession that enables them so to work. Saturday Reviewers (revilers), what do you say to this? The great work in prospect is the summer planting of the flower garden, and unfortunately for most gardeners the system has grown prodigiously, and will still grow, despite all prognostications to the contrary; and, so far as we are concerned, the only branch of it that we should like to "lop" is the doing away with as many tender kinds of plants as possible, and the substitution of hardier kinds. Happily we are coming to see that this can be done, not only without detracting from the effects of flower gardens, but rather adding to the same. Whatever may be the defects of subtropical and carpet bedding, there can be no manner of doubt but that the introduction of these styles has brought into notice many kinds of plants suited to parterre work that would not otherwise have been thought of. Now every year plants of a hardier type are being introduced for this purpose, and which eventually will render a large quantity of tender plants unnecessary. To be practical: we are not required to do spring bedding—the family being absent at this season—hence we can prepare the beds and borders for summer work as soon as the winter arrangements are cleared, and at the time we write (April 25) all our arrangements are complete, and a large number of hardy plants being used, and which are already planted; quite a third of the labour connected with summer bedding is already over. The following are some of the plants used, all of which can now be planted, viz., Echeverias, Sedums, Saxifrages, Sempervivums, Festuca glauca and viridis, Arabis lucida variegata, Cerastium tomentosum and Biebersteinii, Santolina incana, Thyme (variegated), Ajuga reptans, Antennaria tomentosa, Achillea ægyptiaca, Euonymus, variegated sorts; Violas, Pansies, Yuccas, &c. Even if it were desirable, the space at our disposal is too limited to give examples of planting arrangements, this being best left to the individual taste of the planters; but this much we may advise, viz, that high or glaring colours should not predominate, and that over the entire garden some relief to the flowers be given in the shape of "dot" plants; for instance, a couple or three plants of Grevillea robusta, or Dracæna australis, or Acacia armata, in a bed of Pelargoniums, or say, a centre plant of Acer Negundo variegata or Retinospora pisifera aurea, or a large plant of Sempervivum arboreum variegatum in a centre mass or block of Coleus or Iresines. From these examples many other equally suitable plants for the purpose will suggest themselves, such as Aloes, Agaves, Yuccas, Thujas, Retinosporas. It will now be advisable to expose tender plants as much as possible to the weather, without injuring them. Lacking suitable pits in which to harden them off, place them under the shelter of walls or hedges, and cover them up every night for the present, whether there is likely to be frost or not. In the more southern counties Calceolarias and Verbenas may be planted out now without much risk of injury, but northwards another fortnight will be early enough. Stocks, Asters, Zinnias, and Phlox Drummondii should now be pricked off into boxes, and given the shelter of a frame till fairly established, and in about three weeks they will be fit for planting in the permanent beds, choosing a showery day for putting them out. Stocks are especially troublesome to transplant successfully, and one point to mind with them is to plant them as quickly as possible after taking them from the seed-box or bed, for if once they flag thoroughly down it is almost a hopeless task to get them round again. If the dead fronds, weeds, &c., have not been cleared from about the roots of hardy Ferns it should be done immediately, as the young growth will shortly be too far advanced for it to be done without injury to them. Rockwork, too, should now be overhauled and cleared of weeds, and, if needs be, many of the plants can now be increased by division, this being a good time for it to be done. Last summer we noticed how very effective and how much at home Clematis seemed on and near the rockery in Battersea Park, and have taken a hint therefrom, and others may do the same with profit. *W. Wildsmith, Hoxfield.*

FRUIT HOUSES.

CHERRIES AND PLUMS.—Should there be the slightest appearance of the presence of the green or black fly on the trees in the Cherry-house, it should be entirely eradicated before the fruit shows signs of changing colour, as considerable risk is involved in the operation of fumigation of this subject afterwards. The ripening period is now rapidly approaching, see therefore to the requirements of the roots, and plentifully supply them with moisture if it be needed; likewise continue to supply it by moistening the surface of the borders and other available places, but entirely withhold the syringe from the trees until the fruit is gathered. Stop at the fourth or fifth point all those shoots which are not required to furnish the tree, and tie in carefully the rest. Timely preparations should now be made to protect the fruit from the attacks of sparrows, which are very troublesome in some places. We use for this object netting, which is stretched over the apertures for ventilation. In the case of Plum trees the syringing overhead should be continued even until they are ripe, provided that clear rain-water is used and carefully applied so as not to disturb the bloom; such trees as are in pots will need daily supervision in regard to watering, and if the pots be small and the crop of fruit abundant, on every occasion of watering employ a weak stimulant of guano or similar compound. These trees should be kept pinched in to the fifth or sixth joint regularly, excepting when the trees are planted, under which circumstances they will require the ordinary treatment as applied to trees outside.

STRAWBERRIES IN POTS.—That abominable pest the red-spider will at this period be getting very troublesome on these plants, and much care will be needful to keep it in subjection and from migrating to the subjects near. In fruit-houses these subjects should not now be allowed a place excepting where the syringe may be freely applied to the plants each day without detriment to the surrounding subjects. On shelves which are fully exposed a turf should be placed beneath the pots, which will materially assist in preserving some degree of moisture at the roots. Freely supply manure-water to all the plants which are fruiting until the colouring process begins, when clear water will be preferable in most respects. As soon as the fruit is ripe all plants in hothouses should be removed to a cooler place, where a free supply of fresh air is in circulation. We have found our Cherry-house admirably adapted for this purpose, and it is extensively used in this way. Let all the remaining plants in pots be brought into late Peach-houses, the orchard-house, or cold frames, to come in and sustain the supply until those outside are ready. *Geo. Thos. Miles, Wycombe Abbey Gardens.*

CUCUMBERS.—Few plants give a more liberal return for generous treatment than the Cucumber, and for this reason we often see it abused, by being allowed to carry very heavy crops of fruit, which exhaust the energies of the plant, check the growth, and, as a matter of course, the succession of fruit, at the same time laying the foliage open to attacks from thrips and red-spider. Where plants that have been in bearing all the winter can be dispensed with a flush of fruit may be taken; but if they have to do duty for some time longer the thinning of the fruit is as important as that of the leaves. Old plants will now take more water, which should be 5° warmer than the house. Syringing may also be more liberal, and if the upper sides of the leaves can be well bathed from the outside on fine mild afternoons the position of the foliage, which soon gets up to the glass, will be changed, and growth will be more healthy. A somewhat heavier loam may now be used for a top-dressing, and a thin sprinkling of horse-dung should be applied once a week. Keep the foliage thin and clear of the glass. Ventilate freely on all favourable occasions; close at 85°, run up to 95°, and avoid shading as much as possible. Directions given in previous Calendars will still be applicable to the management of plants in pits and frames. Sudden changes of temperature must be guarded against by regular attention to the linings and early covering with good dry mats. If shading is resorted to it should only be for a short time in the middle of the day. Make further sowings for following forced vegetables in the frame ground, and prepare to plant out ridge Cucumbers under handlights. *W. Coleman, Eastnor.*

KITCHEN GARDEN.

Much that should have been done in this department has been unavoidably delayed, owing to the inclement state of the weather that prevailed during the middle of April, so that, what with arrears and the multitude of things that have to be done in the ordinary course at this season, the kitchen gardener is likely to be pretty full-handed for some time to come. It is perhaps fortunate that such operations as seed-sowing have been retarded to the extent they have in most places, as otherwise the tender germs must have been injured, and in many cases completely destroyed. When crops get retarded by a continuance of wet, cold, sunless weather just as they are emerging through the soil they receive a check to their growth at that critical juncture from which they rarely, if ever, fully recover. The main crop of Beet, Carrots, Salsify, and Scorzonera should be got in at once, so as to afford them time to make useful sized roots. To obtain the above in a satisfactory condition it is necessary that the ground in which they are cultivated should have been deeply dug and well worked about to bring it in a pulverised state, without which clean handsome roots are out of the question, as they are unable to penetrate the soil and branch off in various directions. It is the practice with many before sowing Carrot-seed to damp it and afterwards place it for twenty-four hours in a little warmth to cause it to swell, which greatly accelerates growth, and by thus inducing a more speedy germination the plants get well in advance of any weeds, so that the hoe can be used with safety earlier than would otherwise be the case. Where there has been delay, owing to the state of the weather or other causes, in getting crops in at the proper time, the above plan of starting the seed may be resorted to with advantage, and will make many days' difference in their favour. It is time now for the last sowing of late Broccoli, Savoys, Borecole, and such like winter vegetables to be made. In so doing, scatter the seed very thinly over the beds, or sow in drills, that the plants may have plenty of room when up to keep them from getting long on the leg till they are large enough to handle for pricking out. There is no comparison between a drawn lanky-stemmed Broccoli as regards powers of endurance with such as have short, hardy, well-matured stems, but to get them of this character they must have plenty of light and room from the time they first emerge from the ground. To secure such seed as the above from the ravages of birds, dust over them a thin coating of red lead after having previously damped them with a very small portion of turps or milk to cause it to adhere. This will render them safe from attack, and save the trouble of netting. To get Turnips tender and juicy, sowings should be made at short intervals, as when they stand long on the ground they become hot and stringy. As soon as they make their appearance through the soil, a dressing of soot and wood-ashes should be dusted over them, which will stimulate growth and save them from the attacks of fly, usually so destructive to them in their young state. As soon as Brussels Sprouts are large enough to handle they should be pricked out at once, to push them on, and get them stocky and strong before finally planting them out. No vegetable makes a better return than this for any little extra care and attention bestowed, as it will give at least double the produce when sown early, and well nursed on. Leeks, too, if sown under glass, and pricked out on rich soil, and treated in every respect after the manner of Celery, may be grown to an enormous size, to which those treated in the ordinary way are mere pigmies. The later sowings of Celery will now be large enough to handle, and should at once be pricked out, to afford the plants plenty of room, and prevent them from becoming drawn. Places for this purpose may be readily made by placing pieces of 9-inch boards to form a temporary frame on which to put some old lights for shelter. Three inches or so of fresh loam and thoroughly rotten manure, such as may be obtained from old hot-beds, mixed in equal proportions, will be just the thing to prick out in. Place this on the hard soil, so as to confine the roots entirely to it, by which means they will lift with such large balls as scarcely to feel the removal. Cauliflowers that have been raised and pricked out under glass should now be planted out in deep rich soil, where they can be readily got at to supply them with liquid manure, should the weather set in dry by-and-bye. Those on sunny borders will be benefited by having some afforded them at once, continuing the same from time to time according to the state of the weather. Scarlet Runners require so much water during the summer to get them to set freely, that any sown now and after this time should be put in very shallow trenches to admit of mulching the roots, and giving them a soaking whenever such a course may be necessary. Gherkins and ridge Cucumbers, if not already sown, should be got in at once, that good strong plants may be ready to turn out under handlights. Shift on Tomatos, and keep them well up to the light, to prevent them from becoming weak and drawn. Any for planting out should be treated in like manner, and gradually inured to more air as the time approaches for planting them out. New Zealand Spinach should not be forgotten, as with this variety it is an easy matter to have a supply during the whole of the summer if a few are planted on a rich piece of ground, with plenty of room to ramble, or the Spinach-Beet may now be sown, either as a substitute, or to give variety. *J. Sheppard, Woolverstone Park.*

THE

Gardeners' Chronicle.

SATURDAY, APRIL 29, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

SUNDAY,	April 30	Opening of the Brussels International Horticultural Exhibition (seven days).
MONDAY,	May 1	Royal Botanic Society: Messrs. Jackman's Show of Clematis (until 23d).
WEDNESDAY,	May 3	Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M. Sale of Orchids, at Stevens' Rooms.
FRIDAY,	May 5	Alexandra Palace Flower Show (two days).

THERE can be little doubt that the FLORAL EXHIBITION which our good friends at BRUSSELS are preparing, and which will be inaugurated on April 30, will be one of unusual brilliancy. The term "International" has been so misused and debased of late years, that it is necessary to recall the circumstance that Brussels led the way in 1864 in inaugurating that genuine series of "Internationals" which was followed by Holland in the following year, by ourselves in 1866, and subsequently by Paris, St. Petersburg, Vienna, Florence, to say nothing of the Ghent Quinquennial, and the Cologne Exhibition of last year, and of which latter it is no disparagement to say that in conception, as in realisation, it fell short of the term International in its broadest sense.

The Brussels Exhibition of 1864 was the germ from which sprang our own International of 1866. It was felt by those who took part in the former that the credit of British hospitality was at stake as well as the honour of British horticulture. The feeling intensified after the cordial reception and splendid display at Amsterdam in 1865, and most of our readers know what was the result in this country in the following year. Now the cycle has been well nigh accomplished. Many of our leading horticulturists will assemble at Brussels next week; they are sure to receive a cordial welcome—they are sure to take part in a splendid exhibition. The thought must present itself—"Amsterdam next year, and then, once more, our turn." The ten or a dozen years that have elapsed ought not to have been without their lessons, the experience of the past is not only a thing of memory, but it is, to a large extent, on record and available for use. It is undeniable that the exhibition of 1866 proved a great power for good in this country, so far as regards horticulture. It was successful mainly because horticulturists of all classes sunk their private interests and worked together for the common benefit. Did private interests suffer thereby? By no means; ask any who took part in that display, and they will tell you that the gain was not only to horticulture in general, but to those who live by it also. Such considerations lead us to hope that even as a small band of Britons after Brussels determined that Britain should not be left behind—and, after Amsterdam, confirmed their resolution, and put it into practical shape—so now something of the same kind may be done totally independent of, though, if possible, with the co-operation of all the horticultural and botanical societies of the nation.

Connected with these exhibitions, each and every one of which has been a success, has been inaugurated a congress of botanists and horticulturists, to which the leading men in their departments of all nations have been hospitably invited. Governments have vied with each other in sending, at the public cost, their most eminent representatives to these gatherings; in this country, where private enterprise outruns Government support, the Government, as such, has rarely, if ever, sent delegates, or, if it has done so, it has generally allowed them to pay their own costs. Be this as it may, these congresses have been the accepted trysting places of the most eminent among those botanists whose labours are connected with horticulture, and have repeatedly been graced by the presence of the leading men of science. Of the beneficial effect of such gatherings, from a social as well as from a scientific point of view, there can be no question, but we think that experience has shown that the matters brought before them should be, by preference, of direct rather than indirect importance to horticulture.

The main subject proposed to be discussed at Brussels is an eminently practical one—no less than the best means of forming and publishing a "Hortus Europæus"—a catalogue of all the plants known to be in cultivation. By catalogue we do not here mean a mere list of plant names — we have that already, to a large extent, in such works as *Loudon's Encyclopædia*, *Paxton's Dictionary*, and others—but a properly digested and arranged catalogue, like the *Hortus Kewensis* of AITON, showing, as accurately and fully as possible, consistent with conciseness, the correct name, authority, place and date of publication, synonyms, botanical station, native country, and garden use of all plants known to be in cultivation. In further illustration of our meaning we may refer to the *Hortus Donatensis* of PLANCHON, or to the carefully drawn-up synopses of particular genera by Mr. BAKER, and published in our own columns. A mere compilation is not wanted; it would but serve to multiply, or, at least, perpetuate existing confusion. An original work of comparison and accurate determination is wanted, and this is a work of such difficulty and magnitude that no one head and pair of hands can hope to accomplish more than a fragment. Hence the necessity for co-operation. But co-operation pre-supposes a concerted plan of action, and the adoption of a uniform mode of procedure. This, so far as we understand, is the work that the Brussels Congress is to take in hand, and most sincerely do we wish them all success in their arduous task. At our own Congress in 1866 the subject was mooted by no less an authority than the veteran KARL KOCH, among whose proposals was one to refer all newly-introduced plants, as far as possible, to those botanists who may have made the order to which they belong a special study—Orchids to Professor REICHENBACH, Lilies to BAKER or DUCHARTRE, and so on. Botanists living in great botanical centres, like London, Paris, Berlin, St. Petersburg, Geneva, and, we may now add, Brussels, have great advantages in the way of books and herbaria. On the other hand, certain botanists devoting themselves to special groups, cultivating them and collecting them in the form of dried specimens—in the way that Professor MORREN has done in the case of Bromeliaceæ—may and do accumulate materials more copious and better arranged than in the case of larger collections. All these matters will, we doubt not, come under the consideration of the Brussels Congress; and we trust the outcome may be some practicable scheme for the general benefit and the special advancement of horticulture.

—— THE lease and goodwill of the PINE-APPLE PLACE NURSERY, MAIDA VALE, was put up for sale by Mr. STEVENS on the 20th inst., and was purchased by the firm of E. G. HENDERSON & SON, Wellington Road Nursery, St. John's Wood. This well-known nursery was started about eighty years ago by Mr. ANDREW HENDERSON, who subsequently retired in favour of his son, Mr. JOHN ANDREW HENDERSON. In the course of time this gentleman also retired, and the business was carried on for many years by the nephews, Mr. JOHN and Mr. ARTHUR HENDERSON, Mr. JOHN retiring some years ago. In 1871 the business passed into the hands of Mr. JOHN WEEKS, the well-known horticultural builder, who traded under the style and title of the Pine-apple Nursery Company. The head of the firm of E. G. HENDERSON & SON, who have now purchased Pine-apple Place, is the eldest son of ANDREW HENDERSON, the founder of the latter business, who started a nursery seventy years ago at Vine Place, Edgware Road, from whence he removed about forty years back to the now well-known premises in Wellington Road. Mr. E. G. HENDERSON is still living and enjoying life in his ninety-third year, though he has retired from business—his son, Mr. ANDREW HENDERSON, being the present proprietor.

—— At the last meeting of the LINNEAN SOCIETY among other papers was one by Mr. HIERN on the genus Coffea, in which he stated that the geographical distribution of Coffea arabica was from Abyssinia obliquely across the continent to Angola. The name arabica would seem, therefore, to be a misnomer, although, as was pointed out by Mr. BENTHAM, our knowledge of the botany of Arabia leaves much still to be desired. Coffea liberica (Hort. Bull) was considered to be a good species and entitled to retain the name applied to it by the enterprising nurseryman who had distributed it so largely, and under whose auspices, as well as those of the Royal gardens at Kew, this species bids fair to become of so great commercial importance. Mr. SHIRLEY HIBBERD'S paper on Narcissus provoked much comment, owing to the disregard of the rules of botanical nomenclature that it evinced.

—— We may remind our readers that Messrs. GEORGE JACKMAN & SON'S EXHIBITION OF CLEMATIS opens on May 1, in the long corridor which serves as an approach to the Conservatory in the Royal Botanic Society's Garden, Regent's Park. Judging from the examples staged at the exhibition on Wednesday last, the display will be very fine, and, should the weather continue bright, the plants will be in fine bloom about Wednesday next.

—— A writer in the *Times* complains that some Ivy that she was desirous of taking through Italy to India was confiscated on the Italian frontier; but she does not appear to be aware of the cause of her annoyance. The object proposed to be attained is the exclusion of the Vine insect, Phylloxera. The Italian Government has been made aware in various manners of the "stupidity" of the law in question, hence we fear a lady's angry letter to the *Times* will scarcely remedy the evil.

—— We have received the Report of the SOCIETY FOR DISTRIBUTING FLOWERS, &C., TO THE SICK POOR OF HULL, with a description of the system on which the work is conducted, and to which we may refer more at length on another occasion.

—— Amongst the exhibitors from this country at the BRUSSELS SHOW, Mr. B. S. WILLIAMS promises to be one of the largest, having despatched two large vans and twenty packages of plants to compete in the various classes. Competing in the class for 25 Orchids are specimens of Dendrobium Devonianum, Cypripedium caudatum and villosum, Cattleya Mendelii, Vanda suavis, and many others of superior cultivation. The class for 20 stove and greenhouse plants will be well represented, also that of Filmy Ferns, and a great many others—all of which will doubtless reflect credit on the country in which they were grown.

—— Some time ago we mentioned that Dr. BOLLE had promised to communicate to the Botanical Society of Berlin the distinguishing characters of the Eastern and Western PLANES, and we at the same time expressed our doubts as to his being able to point out any really constant differences between Platanus occidentalis and P. orientalis. We find now (*Monatsschrift*, December, 1875) that he entirely relies upon the characters given by LINNÆUS, and has nothing new to adduce. We have already given the results of our investigations, our inability to discover any constant differences of specific importance. Dr. BOLLE enumerates the varieties acerifolia, pyramidalis, cuneata, digitata, and Reuteri. The variety cuneata is of shrubby habit, and Professor KOCH, who has had opportunities of studying it in its native country, regards it as a distinct species. In the discussion that followed upon the reading of Dr. BOLLE'S paper, M. LORBERG observed that the variety pyramidalis had become so widely diffused in France in consequence of its being easily propagated from cuttings, whereas the ordinary acerifolia is not. He was also

Fig. 101.—Xanthoceras sorbifolia.

of opinion that the American Plane is quite hardy in Germany, but he is not reported as having indicated any trees as bearing out this view. Seedlings of acerifolia often exhibit the character of the typical orientalis. The dimensions of a large specimen of P. orientalis growing in the vicinity of Berlin are (as corrected in the January number of the same journal) 19½ feet in circumference a yard from the ground, and 120 feet in height. This is a great height for the true orientalis; with us its branches spread very widely, whilst the variety acerifolia is of erect habit.

—— Several of our correspondents have recently favoured us with their experience and views repecting the best stock upon which to graft the beautiful varieties of Epiphyllum truncatum. The principal objection to most of the plants generally employed as stocks is, that they do not grow at the same rate as the scions of Epiphyllum, and the union, although perfect, is ugly, or they are liable to decay. Pereskia aculeata is easily propagated in large quantities, and is in many respects suitable for the purpose, but the stems grow too slowly, and soon present the appearance of being overladen; and Cereus speciosus and other species, although not open to this objection, require careful management, or they will quickly rot off. A writer in the *Deutsche Garten-Zeitung* for

March recommends Pereskia calandriniæfolia as offering all the requirements of a good stock, and as being far superior to any other he has tried. For several years past this stock has been extensively used by German florists, especially in Düsseldorf, and they affirm that it unites the excellence of others without possessing their defects. It is as easily propagated as P. aculeata, and in the course of the summer it forms a straight, vigorous, stout stem 2 to 3 feet high. When and by whom this species was introduced is uncertain, but Inspector Bouché found it in the Berlin Botanic Garden bearing this name when he entered upon his duties in 1843; and, according to the *Index Plantarum Succulentarum in Horto Dyckense*, it was in cultivation in 1840 in the celebrated collection brought together by Prince Salm-Reifferscheid Dyck. We are not sure that this species is known in this country, for it does not appear to be in the collection at Kew. It is described in Labouret's *Cactées* as having a woody stem 4 to 6 feet high (growing much higher in its native habitats in Mexico), thickly studded with convex, grey, tomentose, scarcely woolly areoles; spines slender, fawn-coloured, in clusters of five or six; leaves lanceolate-spathulate, acute, tapering very much downwards, fleshy, about 1½ inch long by three-quarters broad; flowers unknown. Labouret quotes P. Pititache, Karw., as a synonym of P. calandriniæfolia, but in the *Index* referred to above it is cited as a distinct species. Perhaps some of our readers may know it.

—— We hear that Mr. John Wills has received the order to construct the Rockwork at the Great Yarmouth Aquarium.

—— The first day's sale of Mrs. Cole & Sons' valuable exhibition stock of specimen plants was held on the 19th inst., at the nurseries, Withington, and attracted a large number of connoisseurs from all parts of the country. The following are some of the prices realised for greenhouse plants:—Boronia pinnata, 10 guineas; Aphelexis macrantha rosea (Chilman's variety, 20 gs.; Yucca aloifolia variegata, 5 gs.; Dasylirion gracile, 5 gs.; Acrophyllum venosum, 6½ gs.; Cordyline indivisa, 26 gs.; Azalea Trotteriana, 15 gs.; A. Iveryana, 10 gs.; A. Magnificent, 10½ gs.; A. Baron de Vrere, 8 gs.; A. Cedonu'li, 12½ gs; A. Criterion, 8 gs.; A. Duc de Nassau, 12½ gs; A. President Clay, 7½ gs.; A. Empress Eugénie, 7½ gs.; A. Conqueror, 10 gs.; Erica amabilis, 9 gs.; E. Cavendishiana, 19½ gs.; E. Lindleyana, 15½ gs.; E. tricolor Wilsoni, 12 gs.; E. aristata superba, 9 gs.; E. affinis, 9½ gs.; E. Hendersoni, 7 gs.; E. Massoni major, 11½ gs.; E. Candolleana, 5 gs.; E eximia superba, 5½ gs.; E. Turnbullii, 8 gs.; E obbata, 10 gs.; E. Massoni major, 5 gs.; E. Cavendishiana, 5 gs.; Camellia eximia, 7½ gs.; C. alba-plena, £20. The stove plants were sold on the following day, and amongst the most important sales were the following:—Stevensonia grandifolia, 5 gs.; Cyathea dealbata, £6 5s.; Croton pictum, 4½ gs.; Franciscea calycina major, 5½ gs.; Cocos Weddelliana, £50; Croton angustifolium, 14 gs.; Cibotium princeps, £4; Areca lutescens, £4 16s.; Ixora Colei, £6; Anthurium Scherzerianum, £50; Alsophila excelsa, £4 16s.; Croton Weismanni, 6 gs.; Astrocaryum rostratum, £5 10s.; Latania borbonica, £5 15s.; Cycas revoluta, £5 5s.; Ixora Williamsii, 4 gs.; I. coccinea, £5 2s. From the prices realised it is evident that there is no falling off in the value of plants of this description when really well-grown; in fact, the figures reached for some of the specimens have seldom been equalled, more especially for such as were not very large, and had not attained the size they ultimately would do. This sale we may consider a satisfactory close to a long and successful career of exhibiting. Henceforth, we understand, the glass department of the business will be devoted not alone to the ordinary trade stock, but to the growth of the best varieties of plants up to small or quarter specimens, for which the long experience of the Brothers Cole fit them.

—— We are sorry to hear that a very destructive fire broke out a few days ago at the extensive horticultural building works of Messrs. Boyd & Sons, of Paisley. The damage is, we believe, estimated at about £4000.

—— We learn from M. Decaisne that the forage plant mentioned by M. Durieu de Maissonneuve (see *Gardeners' Chronicle*, 1875, vol. iv. p. 174), under the name of Reana luxurians, is now in bloom in the Jardin des Plantes, and turns out to be nothing more than Tripsacum monostachyum, Willd., cultivated from time immemorial in Botanic Gardens.

—— In Mr. Day's magnificent collection of Orchids at Tottenham there are now in flower some well-marked varieties of Odontoglossum Roezlii; O. Roezlii alba, Cattleya Mendelii, very highly coloured forms; Cattleya Skinneri, a lovely coloured form, with five flowers on a spike; Cypripedium Roezlii, which is nearly always in bloom; Dendrobium Devonianum, a high-coloured variety; Ansellia africana, with two very handsome spikes; Vanda suavis, very good; Dendrobium Cambridgeanum, the pretty white Epidendrum bicornuta, Vanda cœrulescens, Phalænopsis grandiflora, several plants, one of which has flowers measuring 4¼ inches over—a grand variety; P. Schilleriana, and Oncidium sarcodes. In the cool house there is a beautiful display of flowers, the most conspicuous amongst which are Cattleya citrina, with flowers of fine size; Odontoglossum luteo-purpureum, O. citrosmum, with very fine spikes; O. Pescatorea, several nicely spotted varieties; O. Alexandræ and O. triumphans, the latter especially good. In the show-house we noticed a spike of Odontoglossum citrosmum roseum with two dozen flowers—a grand object; Epidendrum vitellinum majus, Trichopilia suavis, of which species a plant here has produced 120 spikes this year, most of them with two flowers, and several with three; Dendrobium Farmeri, and Cymbidium eburneum Dayanum, which is very sweet-scented.

—— The recent storms in the midland counties appear to have been of almost unexampled severity, a difference of 60° in temperatare having been observed within as many hours. The railway trains were blocked in the snow, the drifts in the roads being from 8 to 10 feet in depth. Great damage was done to the trees from the weight of the snow and heavy gales; and on the melting of the snow severe floods occurred. In the neighbourhood of London the actual amount of cold was relatively slight, the chief damage having been occasioned by the weight of snow and the force of the wind. Roses and other growing plants were, as far as we observed, less injured than they were by the night frost of the fortnight previous.

—— Mr. Ware's nursery at Tottenham will be well worthy of a visit in a few days should the fine weather continue. The Narcissus are nearly over, but among the latest to flower one of the best is N. bicolor. It has short, broad, bluntly rounded leaves, with a pure canary-yellow tube and white petals the length of the tube. N. intermedius bifrons, one of the dwarf bunch-flowered section, is also very fine. At the present time one of the most interesting plants in flower here is Ornithogalum nutans, whose greyish-white flowers are very attractive in clumps. Iris stylosa is one of the best of the early flowerers. It has light lavender-mauve standards, and darker shaded falls. Amongst Anemones a semi-double form of A. nemorosa, named bracteata, is very distinct. The new Tulipa Greigii has been flowering very freely here, and brilliant indeed are its scarlet flowers.

—— Professor Bouchardat, of Paris, states that the Erythroxylon Coca has rendered most valuable services in therapeutics since its introduction, almost equal to those rendered by Cinchona bark. M. Bouchardat considers the Coca as a stimulant to the nervous and muscular systems, and ranks it as such with tea and coffee. This is a conclusion similar to that at which Sir R. Christison (see p. 559) has arrived.

—— At Messrs. Hugh Low & Co.'s nursery at Clapton we saw the other day a batch of over a thousand plants of Dendrobium Wardianum, nearly all of which were in flower. The sight was unique, and defies description. In the same establishment we also noted a very fine batch of Dendrobium Devonianum in flower, most of the plants showing three, four and five flowers on a corymb. Cattleya gigas has been in flower for three or four weeks in the Phalænopsis-house, where, by-the-bye, are some very pretty varieties of the P. intermedia strain, and some splendidly marked forms of P. amabilis. The Burmese Dendrobium crystallinum will shortly be flowering in fine condition. Some of the plants have made splendid bulbs. D. Falconeri, of which there is such a wealth of plants here, is also coming into flower, and will be worth seeing. Other good things in bloom now are the rich orange-scarlet Epidendrum vitellinum majus, and very fine varieties of Phalænopsis Luddemanniana. In another department of the nursery there is a splendid collection of show and fancy Pelargoniums coming on. These are in 48's, and of quite a superior order of merit.

—— A few days ago we had the pleasure of inspecting the small but remarkably choice collection of Orchids got together by a young but enthusiastic grower—Mr. H. G. Elliott, of The Crescent, Downs Park Road, Hackney. Mr. Elliott's garden, it must be admitted, is a very small one, and of the usual suburban jack-towel form — such a garden, in fact, as one would never dream of finding Orchid-houses in, much more a valuable collection. But there are three Orchid-houses here, necessarily small ones, and they are full of the choicest of good things, every plant having been selected as the best type of its kind. There were in flower when we saw them Dendrobium Devonianum, with five good spikes, the flowers being as high-coloured as any we have seen; D. lituiflorum, very richly coloured; D. Wardianum, several with flowers of fine size and rich colours; D. crassinode, a few good varieties; D. thyrsiflorum, very fine; D. chrysotoxum, another sweet-scented D. heterocarpum, both good; Phalænopsis Luddemanniana, a beautifully marked variety; P. Mannii, noticed by Professor Reichenbach at p. 503, believed to be one of the finest pieces in England, and carrying three spikes, with sixteen fully expanded flowers; Odontoglossum Pescatorei, a fine variety, with thirty flowers on a spike; and a very beautifully marked O. Cervantesii. The collection also includes fine plants of Phalænopsis amabilis and Schilleriana; a splendid piece of Aerides Veitchii coming into flower, a good specimen of Aerides Fieldingi, and a very fine piece of the scarce Aerides Schroederi; Cypripedium Roezlii, niveum, and villosum; Odontoglossum Roezlii, showing six spikes; O. sceptrum, several O. Alexandræ, and a gem in Dendrobium Wardianum candidum, which is believed to be an even finer variety than the one flowered by Mr. E. G. Wrigley, and noticed by Professor Reichenbach at p. 460. A flower which Mr. Elliott sent us at the time measured 4 inches across.

—— In what excellent condition Grapes can be preserved in a cut state was well illustrated at the Manchester Horticultural Society's meeting at the Town Hall on Tuesday last by Mr. Jamieson, Haigh Hall Gardens, Wigan, who staged two bunches each of Black Alicante and Lady Downe's Grapes—the berries large, plump, and covered with a beautiful bloom. The bunches were cut from the Vines early in February, and had been preserved in bottles of water.

—— Mr. Webber, who has lately given up the management of the gardens at Barwell Court, Surbiton, has called our attention to an admirable plan of growing bedding Pelargoniums on turves instead of in pots. It seems that the cuttings are put into 48-pots in the ordinary way in September, and stored in such pots until the month of March, when they are planted on or in the turves, and make fine stuff by bedding-out time. We should be much obliged to Mr. Webber for more particulars.

—— The beautiful new Saxifraga peltata is flowering freely just now with its introducer, Mr. Bull. The flowers are of a beautiful soft rose colour, and borne in large clusters on erect spikes about 12 inches high. It has large, roundly-lobed, dark green leaves, is a robust grower, and was sent to England from the River Sacramento in California.

—— We have been informed that arrangements are being made for holding the Nottingham and Midland Counties Rose Show and Horticultural Exhibition in the Arboretum at Nottingham on July 6, 7, 8, and 10 next, and that a liberal schedule of prizes is in course of preparation.

—— We have not often met with the charming hybrid × Passiflora Munroi in gardens, but where there is a house kept to a medium temperature between greenhouse and stove it should certainly be

grown if only for its delicious fragrance, which resembles that of the Honeysuckle. It is a hybrid between P. alatum and P. cœruleum, and was raised with several others by Mr. Robertson Munro, of the Lawson Company's Nurseries, Edinburgh, and was described in our columns in 1868, p. 1288. The plant is elegance itself in habit, and produces plenty of its richly coloured flowers. We saw a good example of it at the Clapton Nursery a few days ago.

—— In a recent number of the *Revue Horticole* M. Carrière gives the history of the garden variety of Heliotrope, commonly known as H. Voltairianum, but which Professor Decaisne states should be H. volterræ, as it was raised in a place called Volterra, in Italy. M. Carrière quotes the *Portefeuille des Horticulteurs* for 1847, where it is figured and described. It appears from this that it was raised from seed in 1845 by a M. Lemaire, gardener to the Countess of Boigne, at Chatenay, the birthplace of Voltaire, hence the dedication to the great author. It was brought out by Thibaut in 1846 or 1847.

New Garden Plants.

Xanthoceras Sorbifolia, *Bunge.**

Though new to British gardens we can scarcely call this a new plant, inasmuch as it has been long known to botanists, while the attention of horticulturists was attracted by the figure in Van Houtte's *Flore des Serres* in 1870. The accompanying description from M. Decaisne gave the history of the plant, and from which we take most of the following particulars.

Xanthoceras sorbifolia is an ornamental hardy shrub or small tree of the first rank. It was introduced in 1868 to the Jardin des Plantes, by the Abbé David, from Mongolia, where it grows, together with another handsome hardy tree long known in our gardens, viz, Kölreuteria paniculata, and when full-grown it is supposed that it will attain to about the same size. In general appearance the plant has very much the habit of Staphylea pinnata, the Bladder-nut, but the flowers, as will be seen by our sketch (fig. 101, p. 565), are much finer.

The flowers are produced in spring from the same terminal bud as the leaves. The latter are glabrous, pinnate, with 6—8 lateral and one terminal leaflet of a lanceolate outline, and slightly saw-toothed. The flowers are in terminal clusters, each regularly 5-parted, about an inch in diameter; the petals, crumpled before expansion, are whitish, obovate, and stalked, the stalk being remarkable for the change of colour it exhibits, being at first yellow, then reddish brown, and lastly violet-purple. M. Decaisne suggests that the plant might well be grafted on Kölreuteria paniculata.

In 1872 the plant was figured in the *Revue Horticole*, the drawing being apparently adapted from that in the *Flore des Serres*. Still more recently (1876, p. 524) an excellent coloured figure of the plant was given in the *Garden*, and quite lately the plant was exhibited by Messrs. Veitch, on behalf of MM. Thibaut & Keteleer, of Paris, at one of the meetings of the Royal Horticultural Society, the plant in question having been lifted from the open ground, placed in a pot and forced. From that specimen Mr. Worthington Smith's drawing was taken, and it will serve to give some idea of the great beauty of the plant. That it should be hardy, free-flowering, and easy to force, are all qualities which need no recommendation of ours. We perceive that the New Plant Company of Colchester have also the plant for sale. The construction of the flowers is very singular, indeed the name Xanthoceras alludes to the presence of five erect, curved, yellow horns, which stand up in the flower within the petals; while the specific name accurately denotes the resemblance of the leaves to those of Pyrus or Sorbus domestica, the true Service Tree, or to those of the Mountain Ash. *M. T. M.*

Dendrobium crassinode Barberianum, *Rchb. f., supra*, 1875, i., 68.

The splendid importation of Burmese Dendrobia, made by Mr. Low last spring, has proved an inexhaustible source for Orchidic gossip. As to D. crassinode there were many doubts whether it was the true D. crassinode or "crassinodis," as it is called by so many who play beyond the area of the celebrated spelling bee, hoping for a "grammar wasp." Well, it is not the old one; it is crassinode Barberianum. I never saw (at least, I believe so now, for one is always partial to the youngest children) such a beauty of crassinode as the one Mr. Low sent me some weeks ago. Both sepals and petals had the last outer third in deepest violet, which made a most lovely impression. The flowers having been sent quite fresh (*avis aux correspondents!*) they dried beautifully, keeping full colour, and may be shown as a testimony for what I say.

Now, as to the much bespoken D. Wardianum, I do not think the stems are so much thicker than those in the original representation in the splendid folio book of the grand lover and grower of Phalænopsis—Mr. R. Warner. I had the pleasure of seeing the fresh importation last spring. After all, it is the first time in my Orchidic life that I have heard amateurs complaining of the bulbs being so stout. One used to like them to be so. I could not find the least difference between the flowers of the old Assam and the new Burmese plant. They appear, however, to vary a good deal in expansion and brightness of colour, just probably from the amount of light and moisture given, and from their individuality.

I had the pleasure of obtaining the white variety, that appeared first with Mr. E. G. Wrigley, from Mr. H. G. Elliott. *H. G. Rchb. f.*

Eria acutissima, *n. sp.**

A plant in the way of Eria ringens, Rchb. f. This has been named later E. retroflexa by Dr. Lindley, who, by a mistake, thought my ringens to be his own ovata (Lindl.); a very different plant, with lamellæ on the lip, with a larger flower and a much higher mentum. The stem is rather thin, a little fusiform, with some leaves at its top, which are linear-lanceolate acute. The rich racemes bear small yellow blooms, with a brownish red base. The reflexed bracts are acute, one-nerved, and rather conspicuous. As a species it is distinct from both E. ringens (Rchb. f.) and rostriflora (Rchb. f.), by its distinctly three-lobed lip and a slender column. The origin is no doubt Sondaic, or Polynesian, or Philippinese. It is, however, unknown, as I am told by Mr. Harry Veitch, who obtained the specimens from Mr. Haskins, gardener to the Duke of Buckingham at Stowe. *H. G. Rchb. f.*

× Lælia Veitchiana, *Rchb. f.; supra Gardeners' Chronicle*, 1874, vol. i., p. 566.

I have at hand a peduncle of unusual strength and thickness, dark purplish. It has six large flowers, the ovaries and pedicels of which are purplish also. The flowers have rosy sepals and petals, and the lip is half yellowish-white and half deep purplish-violet, of a most beautiful tint. There is no doubt that among the raised hybrids this one claims a very great appreciation. I have obtained it from Messrs. Veitch. *H. G. Rchb. f.*

Home Correspondence.

How Soil Influences Colour in Bedding Plants.—I had a striking proof of the beneficial results arising from a proper selection of soil for the various herd of bedding plants last year, and although the information may not be anything new to the majority of your readers, still if it should render assistance to only one isolated individual my object will have been gained. Nearly everybody knows that the variegated tribe of bedding Pelargoniums lacks that brilliancy of colour which should characterise them when planted in heavy rich soils, yet one often sees loads of manure being wheeled to the flower garden preparatory to planting out, without any respect whatever to the conditions of culture which should guide us in preparing for the reception of a class of plants whose individual requirements vary as widely as the East does from the West—the natural consequence arising from this treatment being very often an immense crop of leaves instead of flowers, and the evil is aggravated if the season should turn out to be a wet one. For reasons which would be uninteresting to your readers, the bedding here has been reduced to a minimum. Last year I had a few dozens of Crystal Palace Gem left after I had finished bedding out, and they were planted out for stock plants quite carelessly in a border three-fourths of which was sand, or as near to that proportion as possible. In order to give a little effect we edged with blue Lobelias from cuttings, and the border presented an appearance which was the admiration of all who saw it. I have just finished a new terrace for carpet bedding, and taken the hint strongly myself, and I anticipate a brilliant effect by next July. Perhaps I ought here to mention that we have a sandy sub-soil, and where colour is the object I can strongly recommend a light sandy porous soil through which the sun's rays will penetrate freely, thereby giving a degree of warmth to sub-tropical plants which in strong adhesive soils they cannot enjoy. It must be borne in mind that I am writing from the wettest county in England and the worst climate, and your readers will therefore see the necessity of a careful study of the points to which I have adverted. With the exception of the Liverpool Botanic Gardens, the *beau ideal* of a spring and summer flower garden was always to be seen at "Knowsley Cottage" when Mrs. Hornby lived there. This lady arrived at a style of perfection in bedding which can only be accomplished by careful study and refined taste. There is no getting beyond the fact that ladies, who are always refined and accomplished, can assist us very materially by suggestions with regard to the arrangement of colours—which will be most agreeable to the eye, and which will harmonise best with one another. The ribbon system of bedding has very properly died out; it was, in my opinion, the greatest violation of good taste that was ever perpetrated in our British gardens. This may appear a sweeping assertion to some, and perhaps I ought to qualify it, but, unless where there was some degree of taste exercised in the arrangement of the colours, and success followed in the growth of the plants, the effect always appeared to me as vulgar rather than pleasing. I think that, in a general way, much might yet be done in regard to a careful study of the soil and its influence on colour, and also the flowering properties of plants; for instance, it would be next to madness to plant a bed of Calceolarias in the same preparation that a variegated Geranium or a blue Lobelia would revel in. There has been a good deal of noise about Calceolarias dying off for some years past; I have not as yet experienced any such disaster. I make a special preparation for them, but they are never "coddled." They are grown in leaf-mould and nothing else, planted out about the middle of April and mulched; they have a weakness for coolness and moisture, and I know of no other secret with regard to their successful culture. I should also mention that Golden Gem is a perfect gem with us; in fact, I grow no other. The flower-spikes are boldly thrown up above the foliage; and what gives a more pleasing effect than a large bed centred with a glowing mass of yellow Calceolarias, and edged with the now old-fashioned Perilla? The latter, of course, requires weekly attention, otherwise it will not assume that fringy chocolate appearance which pinching and pegging down alone can procure. Verbenas, too, are almost exiled from our gardens: can nothing be done to resuscitate their culture? I am of opinion that a change of stock every year or two is the best remedy for grappling with this difficulty of disease. I am quite satisfied that they do degenerate when propagated and grown in the same garden for a number of years. As a probable solution of this difficulty, I would recommend the total destruction of any collection which exhibited traces of disease, and the importation of fresh blood from other quarters. *W. Hinds, Otterspool Gardens, Liverpool.*

Grafted Potatos.—The result of grafting one kind of Potato into another has been simply to produce a modified form of growth for a year or two, and then the sorts have relapsed into their original form. [We should be glad of confirmatory evidence of this]. All efforts to effect change in the tuber in this direction have therefore come to nought. If Mr. Maule really obtained *bonâ fide* Potato tubers from his graft of a Potato bud into Solanum Dulcamara, it may at once be accepted as a certainty that they will produce Potatos again, and nothing more. It would have been more satisfactory, however, could the tubers have been placed in the Editors' hands for inspection before planting; we should also like to know what was the variety used in the process, and whether the tubers bore any close resemblance to those of the sort in question. The two species of Solanum have so little in common that it seems extremely improbable that any tangible fusion of them has been produced. The explanation of the production of tubers is probably this, that the stock proved to be a medium for the conveyance of the tuber-forming sap from the leafage, and nothing more, and this idea is borne out by the fact that the tubers were only attached to the terminal roots, and none were developed from the side buds, as is the case with those on the Potato stem. *A. D.*

Peaches, Nectarines, &c.—I thank Mr. Simpson for his able article. I shall certainly try his system next year, for under glass I am a failure this year. I should like some one to invent a "sprayer" or "bedewer." I have often thought how much good such an instrument would do to the above fruits in their minority. I shall put some gauze over the nozzle of my syringes next year, and copy Mr. Simpson's plan. The fruits have set well out-of-doors for so severe a spring. The bees were at work a little time back, and, I think, helped to set the fruits. The foliage has not, over 100 or more trees, a single blistered leaf. There are two most distinguished gardeners near here

* Bunge, Enum. Pl. Chin. Bor., p. 11; Endlicher, Genera Plant. 5629; Bentham et Hooker, Gen. Pl. i. 408; Baillon, Hist. Plant. v. 358; Van Houtte, Fl. des Serres, t. 1899, 1870; Carrière, Revue Horticole, 1872, p 291, 1873, p. 448, fig. 40; Walp. Rep. i. 422; Hemsley, Handbook of Hardy Trees, &c., p. 105; The Garden, 1875, p 524.

* *Eria* (*Urostachya*) *acutissima*, n. sp., Rchb. f.—Affinis Eriæ ringenti caule gracili subclavato apice plurifolio; foliis lineari-lanceolatis acutis; racemis multifloris; bracteis lanceis ovaria pedicellata dimidia æquantibus reflexis, mento angulato; sepalis lineari-triangulis acutissimis; tepalis æqualibus; labello bene breviori lanceo basi utrinque obtusangulo; columna gracili sub fovea angulata. Flores ½ pollicis longi, flavi, basi floris atropurpurea.

who come to see me, but not so often as I could wish, namely, Mr. Beck and Mr. Leach—respectively the head gardeners of my two oldest friends, Lord Alington and Lord Portman. There is also another distinguished gardener who came to see me last year, namely, Mr. Bennett, head gardener to Baron Hambro, Milton Abbey. Now, if any of these, or all, should like to see the trees before disbudded, I shall be glad to show them one of the greatest triumphs of Peach management in a most severe situation. The walls are wholly open to the east, south, and south-west. There is a low wall to the west and north. Behind the wall facing south, to the north of me, is a grassy wet vale till the Wiltshire hills at Mere are reached (20 miles), and a similar vale to the Marchioness of Westminster's, north-east of me (12 miles), near Shaftesbury. Is it not remarkable that, situated on the apex of Okeford, my trees are unblistered, while in the warm parts of the parish the leaves are almost totally blistered? When I remove a tree, or receive one from the nursery gardens, the foliage is generally more or less blistered, but after establishment I see little or none of it. With regard to fruit prospects, as far as I can seen at present, Cherries, Apples, Black Currants, Strawberries will be a great success. Pears and Plums are very short of blossom. Red and White Currants will be but moderate. Gooseberries are a total failure; the twigs have died. I have cut back close up to the old wood. We all owe an immense debt of gratitude to Mr. D. T. Fish for his able articles (and here let me not forget the debt we owe to the late Mr. Robert Fish), but I remember when, some years ago, I said I did not allow "blister" on my trees, he treated the observation as *fanfaronade!* Well, I won't disbud until after the next publication of the *Gardeners' Chronicle*, and then any one coming here, or commissioning either of the above-named distinguished gardeners to come and see, will be able to tell Mr. D. T. Fish and others that trees can be managed so as to escape wholly or greatly that gutta-percha disfigurement called blister. *W. F. Radclyffe, Okeford Fitzpaine, April* 24.

Syringing Peach Trees in Flower.—In an early Peach and Nectarine house that we had in bloom here the latter end of January we used neither syringe or brush, nor did we shake the trees to fertilise the flowers, the result being an abundant crop, almost every flower setting. In a later house of the same sort which we had in flower the beginning of the present month we thought of trying the syringe on the mornings of clear days only, thinking if it did no good at this advanced period of the season, we could do very little harm. I must confess the result of our experiment has been very disappointing, our lot being very meagre indeed. I would just remark that writers ought to be very cautious in dogmatising in favour of pet hobbies, for the best of them are but very imperfect. *J. McC., Alexandria, N.B., April.*

Primula Prince Arthur.—What has been the experience of your readers with the seeds of the new Primula Prince Arthur? I sowed a packet of it during the first week in March, but I am sorry to say not a single seed has germinated. Three other sorts were sown at the same time, and have been since standing side by side with Prince Arthur, under the same conditions as to temperature, shading, watering, &c.; all three sorts germinated freely. I should be glad to hear the experience of others in raising Prince Arthur Primula from seed this season. *M.* [Wait a little longer. EDS.]

To Keep Out Cockroaches.—It may possibly interest those who are much troubled by cockroaches (black beetles as they are commonly called) to mention that a cement or stopping of plaster of Paris mixed with a solution of sulphate of copper, and well pressed into the chinks and crannies they frequent before it sets, answers well for keeping them out. Many of the common applications in the way of poisons and traps are useful in diminishing the numbers of cockroaches when once in, but where other houses are near a constant supply of intruders is apt to be kept up from without, and the work of extermination seems nearly hopeless. Under these circumstances about half a year ago I tried the sulphate of copper plaster, and immediately and for a short time after filling up the most obvious cockroach runs the premises were almost entirely clear, and since then, by stopping up each point of entrance successively as the cockroaches, driven from one spot, tried another, the appearance of the disagreeable intruders has been reduced to two or three a night; and I hope soon, when the remaining unstopped hole has been discovered, to get rid of them altogether. The plaster once in remains firmly fixed, and the application is simply made by dissolving enough of the sulphate of copper in water to turn it a full blue colour, mixing the plaster of Paris with this to the consistency of thick gruel, and as soon as it begins to set (which, if the plaster is good, should be in about 3 minutes) pressing it firmly and plentifully into the cracks and holes. As far as I can judge it answers permanently and satisfactorily, the only difficulty being the filling of all the holes, which is a matter requiring some search and successive operations as they are found out, and some care is also requisite that the crystals of sulphate of copper should not be left about, as their great beauty and poisonous nature make them at once attractive and dangerous to children. *O.* [We thank our correspondent for this valuable suggestion, which will probably be as efficacious in the case of crickets! EDS.]

Weather in Leicestershire in April.—The copy I send is taken from our record of the weather of the second week in April. It tells a tale of severity hardly paralleled in this century. Indeed, I do not remember recording so great a fall of snow at any period in any winter; while railway traffic interrupted, roads impassable tell more emphatically than any words the extent of the fall of snow, which had not all disappeared on the 22d even under an April sun. On the first week in April the spring gardens were bright and beautiful with their characteristic flowers. On the 13th, 14th, 15th, the beds were covered more than a foot in depth with snow, and not a flower or trace of a bed could be seen, yet on the following week, when the snow passed away, and a few genial showers fell, the plants, with the exception of some Hyacinths, broken by the weight of snow, and the more exposed beds of Myosotis dissitiflora, re-appeared as bright and beautiful as ever. The spring garden this year has certainly triumphed over difficulties.

April, 1876.	Max.	Min.	Max. in Sun.	Min. on Grass.	Rain.	
	°	°	°	°	Inches.	
11	52	30	72	28	0.47	
12	43	27	83	23	0.02	
13	43	29	99	21	0.90	Snow.
14	35	30	42	30	0.80	Snow.
15	42	28	93	18	0.12	Snow.
16	52	28	104	18	..	
					2 31	

W. Ingram, Belvoir.

Pickling Plant-houses—Injurious Effects of Creosote.—Having seen in the *Gardeners' Chronicle* of the 22d inst. an allusion made to the injurious effects of gas-tar on plants, I beg to say that I am the owner of the house referred to by Mr. Renny some few weeks back at a meeting of the Horticultural Society. It was not strictly speaking gas-tar, although I believe it is a preparation from it; but creosote, such as the Kent and Sussex Hop growers use for steeping the ends of their poles in, and which renders the part thus steeped or immersed comparatively indestructible. A neighbour of mine, a Hop grower, informed me that he had seen the end of a pole which had been thus pickled, and left in the ground for sixteen years as an experiment, now perfectly sound. During the autumn and winter of 1874 I was engaged in forming several pieces of ornamental water for Samuel Newington, Esq., of Ticehurst, and when there observing his large vineries and other houses which had never been painted "but pickled," and which were perfectly sound after many years of exposure, I determined that when I again commenced building operations I would try the experiment. I felt satisfied that, although it would render the wood imperishable, it would be injurious to plants, knowing that gas-tar in any form is injurious if nothing is done to counteract it, and I had been told that, on account of the greasy sort of surface left by the creosote, it would not take paint. I commenced therefore by having my woodwork all prepared and fitted, then took it to pieces again, and having obtained the use of a large tank, 12 feet long, 4 feet wide, and 3 feet deep, used for pickling hop-poles, I gave it all a thorough pickling; some of it remained in eight hours, some twelve hours, and some twenty-four hours, according to the thickness. After being taken out and thoroughly dried I cleaned it all over with a piece of cloth dipped in turpentine, then had it fixed, and gave it a good coat of paint, which, after the cleaning, dried as well as on ordinary wood; that I thought would have prevented the injurious effects on the plants, as for some time you could smell the paint but not the creosote, but after a few weeks the injurious effects became apparent. Pelargoniums lost their leaves, Cinerarias were killed outright, and many soft things in like manner; Primulas, Solanums, Camellias, Azaleas and Chrysanthemums were uninjured, as has also been the case with Cyclamens and Spiræa japonica, but many hundreds of plants had to be consigned to the rubbish heap; clearly showing that ordinary paint is utterly useless to prevent it, as it comes through as though nothing had been put on it, and the smell in the house is purely of creosote and not of paint. I have been trying various experiments so as to be able to overcome it, and I believe I have succeeded in making a composition that will be as hard as enamel, and will thoroughly stop it and the smell also. I enclose a piece of the pickled wood painted on one side with the composition I purpose using; it has had two coats. After I have given it a fair trial I shall be pleased to communicate any information respecting it, as I feel certain that if it could be used without injury to plants it would be an immense boon to horticulturists generally, but especially to those in the trade, who know the great expense and inconvenience caused by having to clear out their houses and paint once in three years. Especially is it so in Tunbridge Wells, as the best time for doing so is in the months of August and September—just the season when we get the best class of visitors here, and when we wish our houses to look gay, we have to clear out and paint, all of which would be unnecessary could we use creosote without danger. But I console myself with the reflection that the injurious effects will last but one year, and though I have sustained a certain amount of loss this season, I shall have a house comparatively imperishable, and should I live for twenty-five years longer it will not require clearing out and painting. In proof of the injury not lasting more than one season, I may say that I saw a Peach-house at Lord Calthorpe's, Elvetham Hall, in which the Peach and Nectarine trees were killed or rendered quite useless the first season, while the second year others were doing well. Neither does it require fire-heat to develope its effects, as my house was used up to Christmas principally for blooming Chrysanthemums and storing bedding Geraniums, and scarcely any fire-heat was applied, only sufficient to keep out an occasional frost; and I believe the effects would be similar the first season in a cold frame. *John Charlton, Summer Vale Nursery, Tunbridge Wells.*

The Birmingham Potato Exhibition.—This exhibition, to which allusion is made at p. 532, is now, thanks to the exertions of Mr. E. W. Badger, elevated to a position something higher than being a mere cattle-show accessory. It would, however, tend greatly to popularise the show amongst growers if the present expensive conditions of entry for competition were considerably modified, as the number of exhibitors even last year, when the best show was held, did not exceed seven or eight. Under existing rules every exhibitor must be an annual subscriber of 21*s.*, and for every entry, whether it be for a single dish only, or for a collection of sorts, must pay 2*s.* 6*d.* This, including travelling and hotel expenses for a show extending over a week, renders exhibiting at Birmingham exceedingly expensive, especially to those who are non-prizetakers. The Council would do well to follow the conditions of the International Potato Exhibition, which permits all subscribers of 21*s.* annually to exhibit in all classes free, or non-subscribers to exhibit on payment of entrance-fees of from 1*s.* up to 5*s.*, according to the value of the prizes contended for. *A. D.*

Zinc Labels.—I can bear testimony to the excellence of the zinc labels with glass fronts referred to by a correspondent in your paper of the 8th inst, which I think you will be able to confirm on seeing the specimen I enclose, which has been in my Rose border uncared for at least the last ten years. I purchased the labels about twenty years ago either in Gracechurch Street or Bishopsgate Street at a zinc warehouse, but on enquiring afterwards for them I was told, if my memory serves me, that they were considered too expensive, and were no longer made. I had great difficulty at first in finding a material on which to write the names of the plants, as parchment, paper, and cardboard soon became discoloured and perished with the damp, but I at length found that the thin strips of wood of which "night-light" boxes were made answered admirably, with the slightest coating of white paint and a black-lead pencil. *Much Hadham, Herts, April* 18.

Arundinaria falcata.—It may interest some of your readers to know that the above named Bamboo is now in full flower here, and as a proof of the statement made on p. 506, that "certain species flower over a large area at the same time," I may say that all the clumps of Arundinaria falcata here, which number several hundreds, and planted at long distances apart—also all small clumps that I have seen for several miles around—are all in flower and leafless, whilst several other species growing in the same place are perfectly free from flower. This leads me to ask through the medium of the *Gardeners' Chronicle*—How can I save the life of the plants? as from my experience of last year, where a few canes bore seed and matured it they have not emitted any leaves from their nodes, or joints, and seem to have no vitality in them; the tops of our Bamboo plantations have now the appearance of a field of black Oats in flower, and quite leafless. As the Bamboos are one of the chief features of this

place, I am doubly anxious to prolong their existence, and wish to do something to save them. I have cut off all the lateral growths from a few canes as an experiment, to see if they would start a new growth from their joints. I also thought of cutting a few clumps down to the ground. I think this might preserve the vitality of the roots, and assist them in throwing up fresh canes. *W. Osborne, Fota, Cork.* [They will in all probability throw up new shoots from the base. In the Himalaya the annual stems are, according to General Munro, beaten down by the snow every winter, and sprout again in spring. Eds.]

Apiary.

Supers and Swarms.—The arrival of the "merry month of May" heralds the season of greatest activity for bees as well as for their masters, now all the perils of winter have passed, and if my instructions in the number of February 26 last have been attended to our stocks should be vigorous and active; under the most favourable circumstances swarms will issue early in May, and from the blossoms of the fruit trees a honey-harvest should be obtained. The bee-keeper must decide whether he prefers a large harvest of honey, or an increase of his stocks; for a colony which devotes all its energies to honey-getting cannot be expected to breed young bees in sufficient numbers to give large swarms, and small ones are worse than useless. There are of course many exceptional cases, but I speak of a general rule. The proper time to put on supers is very important, and may be said to be as soon as the bees begin to find themselves inconvenienced for storage room; if longer delayed the bees may make preparations for swarming, by constructing queen cells, and having advanced so far they may not be diverted from their intention. Should the fruit trees blossom early we may often get a fine super of honey before swarming time (which will not be too late in the middle of June), so if the weather be propitious at the end of April let all the strong stocks be examined, and if any be found in a happy state of repletion put on a super. Now putting on a super does not by any means insure that the bees will fill it. No; they are capricious little labourers, not to be forced, so persuasion must be used if we would have our wishes gratified. In the first place remember that however clumsy and ugly may be the super it matters not to the bees, they will as readily work in a flower-pot as in a beautiful crystal glass; but it matters everything to the marketable value of the honeycomb, or its appearance on our own tables, so it is poor economy to supply our harvesters with old, dirty or ill-looking receptacles. Again, I know it is a proud thing for a bee-keeper to be able to show a super of 60 lb. to 100 lb. weight, but to make tolerably certain of such requires great skill and constant care, which does not usually fall to the lot of rural bee-keepers. Our friends north of the Tweed fully realise this, and with the Stewarton hives seldom attempt to get more than 20 lb. in one box, although not infrequently they obtain several such from one hive. The Americans, yet wiser, content themselves with a great number of little boxes, holding from 2 lb. to 5 lb. of honeycomb, or else what are termed "sectional supers," that is, boxes easily divisible into sections, with a single comb attached; and these I should like to see brought into general use here, feeling satisfied a good and unlimited market would be found for them at high prices.

The common super for straw skeps is a small copy of the body-hive or else a bell-glass, but supers of any shape may be used by first putting on a flat wooden platform sufficiently large to cover the open bottom of the intended upper storey. The selection of the super being made, certain conditions leading to success must be borne in mind. In the first place, ascertain that the bees have begun to discover that they want more room. The super should be clean, and furnished either with some pieces of clean empty comb (of drone construction if possible), or frame-hives may have artificial wax guides as a decoy. The super should be warmly wrapped in baize or some such material, and which fits closely on its stand. As it is very undesirable that the queen should use the new chamber for breeding purposes, and so spoil its appearance, which she is very apt to do when admission is given through the bung-hole of a skep, it is advisable to prevent this if possible, and it has been found that workers travel readily through apertures ⅝ inch in diameter, and the queen cannot; so that her majesty may be kept in her proper dominion by the interposition of perforated zinc with holes of the above diameter only, or, if wooden hives are used, the usual slits in the crown-board or adapter may be kept within the mark. To facilitate the removal of full supers, each should have a bottom of its own. Very thin wood will do; but *something* is required, or the bees will probably fasten their combs to the crown-board of the hive.

We will suppose the bee-master has been successful, and finds on his hive a well-filled super; now comes the operation of removing it, and ridding it of the bees. Many people find this last a formidable job, and sometimes make such a bungle of it that robbers are attracted, to the loss of honey and beauty. My friend Mr. Cheshire suggested a very simple and inexpensive contrivance, which will be found very useful: he styles it the 5-pin bee-trap. On this the Rev. J. L. Zabriskie has made an improvement which I will

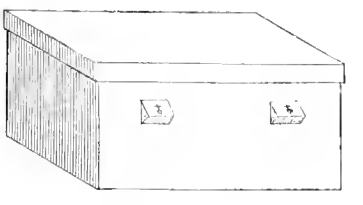

Fig. 102.—Five-pin bee-trap.

now describe, and I take the drawings from the *Bee-keepers' Magazine* of New York.

The first requisite is a box (fig. 102), dark when closed, and large enough to hold the super, or any number of them; holes three-quarters of an inch in diameter are bored in the front of the box, and the traps, as fig. 103, are hung or tacked over these holes. The trap is made of a block of deal seven-eighths of an inch thick by three-quarters wide and 2½ inches long. Half the block is chamfered or sawn off, as in the drawing, which will give a sloping face to the block when in place. A quarter-inch hole is bored through the middle of the block, and two staples of wire about the thickness of an ordinary pin are fastened one above the other below this hole. The staples are inclined upward, and are of such a width that a pin being dropped between from above can easily traverse them, and yet they must be narrow enough to prevent the head of the pin from slipping through, and its body from being pushed sideways much beyond the

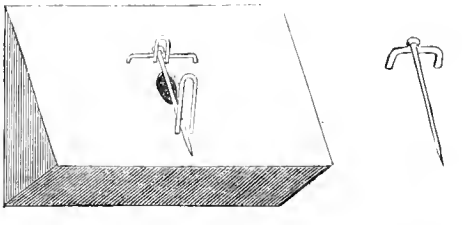

Fig. 103. Fig. 104.

centre of the hole. A third square staple (fig. 104) is placed close above the upper round staple, and its points driven in until its horizontal part lies tightly against the face of the block. The head of the pin rests on this square staple, and the metal surface relieves the slight friction which sometimes might prevent the point of the pin from dropping into its proper place.

When the apparatus is in use the super is placed within the box (of course in such a position that the bees can leave it) and the lid closed down; the imprisoned bees will soon be attracted to the only light—that which comes through the traps; here they will easily pass out one at a time by pushing the pin outward, which each time drops and effectually prevents the entrance of robbers. At sun-down it will be found that all the bees have gone home, and the honey may then be secured. By a proper management of supers, swarming may in a great measure be controlled, but not by any means with certainty; neither is it desirable that increase should be wholly hindered, for we must remember that when a swarm issues the parent hive obtains a young queen who naturally becomes more prolific than the old one, and the colony prospers accordingly. Early swarms are desirable, if the weather be fine, but not otherwise; for should cold and wet ensue, no honey comes in, the young brood and eggs are mercilessly destroyed, the parent stock dwindles by the natural deaths of the adult bees, and probably the swarm, having no stores, die of starvation. Of course these evils may be somewhat ameliorated by artificial supplies, but the swarmed bees would have been much better in their old home. Watching for swarms is often very troublesome and tantalising, especially if in a moment of inattention the bees suddenly start unobserved and are lost, so that artificial swarming should be more practised than it is at present. How often do we see a large cluster of bees "hanging out" for days and even weeks, and the owner spending as much time looking after them as would suffice to make them swarm a hundred times over. Master the art of "driving," and in half an hour a swarm may be taken from any straw skep, and the idlers taught to resume their industrious habits. With frame hives there are several processes equally simple and efficacious, which the accomplished apiarian practises as a matter of course, feeling it a stigma on his reputation for skill when a natural swarm issues. However the swarms come—of their own free will or by that of their master—in mercy to the poor bees feed them in unfavourable weather, and do not forget that they come from a home abundantly supplied to one absolutely empty. *John Hunter, Eaton Rise, Ealing.*

Forestry.

The Scots Pine, though proverbially a hardy tree, and one that will thrive under the most adverse circumstances, is yet the subject of many hardships and privations. Not only is the beetle, of which I gave a full account in your issue of April 15 last, an enemy at once very destructive and uncontrollable, but the Pine-leaf caterpillar, several species of other beetles, and even black game and the capercailzie, are each and all enemies of that invaluable forest tree at some stage of its growth. So far, however, as my own observation testifies, any of those, or all combined, are not so fatal to it as the squirrel (Sciurus).

The injuries inflicted by the squirrel, like all others upon the Scots Pine, may justly be pronounced incurable, but we have the consolation that injury done by squirrels may be prevented if only due and proper means are taken, while most of the others can scarcely be said to be under human control. Besides the small brown squirrel, which inhabits and infests the British woods and forests, there are several others in America and other countries, as the fox squirrel, the cat squirrel, the flying squirrel, the ground squirrel, the red squirrel, the grey squirrel, the great-tailed squirrel, &c.

The beauty, symmetry, and agility of the squirrel are all so perfect as to merit the highest admiration, and endear it to every admirer of Nature; but I am now speaking of it, not as an object of interest, but as an enemy of the Scots Pine tree and several other species of the Conifer family.

During the months of April, May, and June the squirrel, in order to reach its desired food, peels off the bark from the stem and large branches of the tree, generally within 4 or 6 feet of the top. The bark is peeled off by the teeth of the squirrel in shreds of about half an inch in breadth, and generally 3 to 4 inches long. The part of the stem where the bark is peeled off frequently extends quite round the tree; in other cases a square piece is neatly peeled off, as if performed with a sharp knife. The squirrel does not consume the bark, but peels it off, that it may regale itself with the saccharine matter contained between the last-formed wood and the bark. It is most active in hot, dry weather, and usually in the morning a little after sunrise, or after a warm shower of rain. The age of the tree which the squirrel prefers for peeling is usually from fifteen to twenty-five years; it prefers the smooth, clean part of the stem after it has shed its leaves, and selects the most healthy and vigorous growing trees, and will seldom attack trees of sluggish or stunted growth, or in any way diseased.

The bark on being peeled off the Pine tree does not again heal up, as in the case of hardwoods, in consequence of which the sap, though allowed to ascend in the inner layers of the wood, and thus reach the extreme top of the tree, is, nevertheless, entirely obstructed in its descent; hence that portion of the tree below where the bark is peeled off from that time ceases to enlarge, except what is elaborated in the live branches below the wounded part.

Though the Scots Pine is undoubtedly the squirrel's favourite food, yet in dry, warm seasons it attacks indiscriminately the Larch, Silver Fir, Spruce, and even Poplars. The greatest amount of damage done to trees is by peeling off the bark during spring and early in summer, but in districts where the Pine sows itself, the loss sustained by the squirrel devouring the seed is very considerable.

The squirrel also destroys the young shoots, which causes double tops of trees. It is also found of Acorns, Hazel-nuts, Haws, the fruit of the Brier and Juniper. Since the squirrel became more numerous it has been known of late years to devour eggs, eat grain, peel off the bark of old trees for the sake of larvæ, and even to rob the woodpecker of its young, and devour them! When we consider the vast amount of wood property annually destroyed in Britain by squirrels, and the rapidity with which they are increasing in numbers, it is certainly alike the duty and interest of every woodland proprietor to adopt means for their suppression or extirpation. The means necessary for the accomplishment of this end are both simple and effective. Give liberty or instruction to qualified persons, such as gamekeepers, upon every wooded property to shoot them between the months of February and August—in other words, during the time of the year when game is out of season, thereby avoiding as far as possible inconvenience to the gamekeepers. When the squirrels are numerous, I would recommend 3*d*. per tail being given during the first season, 6*d*. the next, and so on, advancing as the numbers decreased. In addition to the stipulated price I would further recommend an extra annual prize to be given to the person who produces as killed exclusively by his own hands the greatest number of squirrels. Unless these or some more effective means be employed for extirpating the squirrel in Britain, we may soon bid adieu to all future successful cultivation of the Scots Pine. So far as I am able to ascertain, the first squirrels seen in the wild state in the woods in Scotland were in the county of Edinburgh in 1814; a student in the College in Edinburgh shot one near Dalkeith, which he got stuffed, and it was exhibited as a rare curiosity for many years.

In 1824 a few domesticated squirrels escaped from their cage at Minto House, in Roxburghshire, where they had been kept for several years under charge of the gardener. They were imported from some foreign part by a member of the family, and attended to with great care, and regarded as rare and interesting animals, and it was with much sorrow and regret that their escape was noted. Previous to these dates no squirrels were seen in that part of the country, and it appears that they were not seen in many other parts, both in England and Ireland, till many years subsequently. That the squirrel is not a native of Britain appears very certain, for, if it were, the densely wooded state the country would have encouraged its propagation to such an extent as to have made it a subject of more general interest and history than it is; but where it was imported from, by whom, and at what period, I am unable to ascertain, and would feel obliged by any of your readers giving information upon the subject. *C. Y. Michie, Cullen House, Cullen, April* 24.

RICHARD HEADLY.

As an addition to the remarks which we made at p. 539 respecting this fine old florist, we may mention that it was about the year 1830 when he commenced the cultivation of florists' flowers, commencing first with the Auricula and following with the Pink and Ranunculus. The Dahlia, Aster, French Marigold, Chrysanthemum, &c., were all cared for and grown by him, together with fruits, vegetables, and stove and greenhouse plants. Of Pinks he raised Conqueror, King Richard, Duke of Northumberland, and others. In 1837 he was one of the leading exhibitors of Ranunculus, and at that time we find his name as the raiser of Earl Grey and Queen Victoria, and later on he produced Princess Royal, Fairy Queen, Gipsy Prince, Cantab, Jason, Murdock, Defiance, Hannibal, King James, St. Cecilia, Dolphin, Comus, Harlequin, Columbine, Commodore Napier, and others—generally flowers of remarkably fine character.

Of Carnations his earlier productions were Achilles and William Cobbett (scarlet bizarres), Incognita and Empress of Purples (rose flakes). His earliest Picotee was Sarah (red edge), which appeared about 1841, and obtained great popularity in those days, and was the forerunner of many fine sorts. He also raised Julia (purple edge), Fair Rosamond and Richard Headly (red edge), and his King James (heavy red edge) was the parent of all the fine heavy red edges in cultivation; Venus (rose edge), John Lenton (heavy red edge), and many others. The Tulip, with the Auricula, is the flower with which Mr. Headly's name will be inseparably connected. In a notice of the Cambridge Florists' Society, in the *Florists' Guide* for 1842, in speaking of the Tulips, the Editor remarks:—"We must not conclude without congratulating Mr. R. Headly on possessing one of the finest bizarres (Osiris) we ever saw, and which was justly placed as the premier on the stand. The same gentleman has had the good fortune to break an excellent feathered byblœman (Calypso), and we anticipate, at further shows, many more new varieties, as Mr. Headly has raised from seed the finest breeder Tulips in the kingdom." Of his seedlings subsequently distributed we may mention Adonis, Sarah Headly, Mary Headley. Demosthenes, Pactolus, W. E. Gladstone, and others. He was always a thorough enthusiast in Tulips, and used to take great satisfaction in showing the invoice of Rutley's Queen at £7 7*s*. from Mr. Alexander, and gave 30 gs. for three roots from Mr. Groom, viz., Rose Lac, Carnua de Croix, and Dutch Ponceau Trublanc; £30 for Strong's Lord High Admiral, and Thalia was bought for 19 gs. In these days new Tulips fetched high prices, and no man was more ready to give them than Mr. Headly. So wide a range of flowers did his regard for them cover that he has raised seedling Tropæolums, a seedling Apple, &c.

THE POULTRY-YARD.

Preparations for Poultry Rearing.—Before the spring rearing of poultry is fully begun it is well to have a thorough look round to make good deficiences and clear away all the encumbrances and untidinesses that may have accumulated during the winter. The poultry shed should be well swept out, and every nook and corner, such as the insides of the sitting pens and any space between them and the floor carefully examined, and all lumber which can be got rid of should be removed, or (if this is not possible), it should be rearranged so as to see what is hidden in it, and cleaned.

The bits of old boards and sacking, old brooms and boots and oddments no one could guess at who did not practically know the miscellanea that find their way into poultry sheds not under lock and key, are all so many hiding-places for dirt, fleas, and possibly four-legged vermin, which will all, if not looked to, play an active part in "not being lucky with the chickens" in the coming season; and in addition to a general tidying a general limewashing of everything that limewash can be applied to costs little and does a great deal of good.

Where there are several heights of perches these require looking to as the accumulation on them gradually renders them unfit for use and injurious to the fowls, clogging both their feet and feathers with dirt. If possible, these perches should be replaced from time to time, otherwise they should be cleaned by scraping or washing, or by throwing them for a few hours into a pond, and then cleaning them with a scraper or rough scrubbing-brush.

If the sitting-pens in the general fowl-house have doors, it should be seen that their hinges and catches are in order. If there is any difficulty in getting proper ones, a bit of thick leather fastened with a few nails will act quite well enough for a hinge, and a stout bent bit of wire catching on a round-headed nail may serve for a proper hook and loop, but it should be done at once, to save disturbance to the hen presently, or possible accidents from the brick too often made to do duty as a temporary door-fastening. Any secure nooks in which poultry are disposed to set themselves should be made the most of. A little hay under some projecting boards will make a dark corner where a duck will establish herself, instead of stealing a nest less safely in the bushes. Some of the hens are almost sure to have a choice of their own as to a nesting place, and their own selected spot, such as a lump of hay in some corner of a manger, or behind a hurdle in a barn, a disused dog-kennel, or any similar places, which, with a little care, can be made secure, will probably produce a better hatch than the less airy pens.

If any special arrangement is made for the water-birds near the pool, a search for rat-holes is desirable, and in any case the means of getting on and off the pool should be made safe and easy both for young and old birds, and arranged, if possible, in two or three places, that if frightened or attacked on one side they may get off on the other. A smooth incline on the bank, or, if this is not possible, of a good wide board gradually sloping under the water, so that the birds may dabble in gradually, and float off as they get out of their depth, is the best; but they should on no account be obliged to throw themselves into the water wildly from the bank, or in returning to struggle on their breasts with legs and wings in all directions up steps too high for them. The falls and bruises are particularly injurious to the young birds, and if the ducks cannot leave the water conveniently there is a loss in the eggs, from their being laid in the pond. For the free access to water needed both by geese and ducks before and during laying and sitting time, the little pools of water such as are seen on our open commons often only a few yards across exposed to the full sunshine and sheltered from the cold wind by Gorse and rough bushes, are more desirable than large deep pools. The water thaws earlier in the spring, and later in the season soon warms in the sunshine, and where the enjoyment with which the duck or goose can take her bath tempts her off the nest of herself, and enables her to moisten the eggs in the natural way, a deal of risk and trouble and fretting of the birds will be saved. All possible disturbance of their tempers (which are of an irritable sort in the water birds, at best), should be spared, and their comfort studied; the nests should be made up well with hay, so that the eggs are safely massed in the middle, and if in a pen, a turf under the hay to give a slight dampness as in natural circumstances, or a board to keep the eggs from being rolled out at the door are desirable. Metal or earthenware milk-pans though favourites are not good sitting places on account of their variations of temperature, and (if out-of-doors) from their leading to disasters (from want of drainage) in wet weather.

Just now is the time to lay the foundation (if not already begun) of the poultry operations to be attended to in detail presently, and one not the least important is insisting on all subordinates quietly and without harm to the birds keeping the gander and turkey-cock from becoming the turbulent foes they are often most unnecessarily allowed to be to every one who comes near them. Driving them off, or pressing them aside (on no account striking them), or if very pertinacious taking the struggling offender by the throat, leading it off the spot, usually soon teaches the best of behaviour, to the great relief of all chance visitors. *O.*

Reports of Societies.

National Auricula Society: *April* 25.—The dull sunless weather which prevailed during a great portion of the autumn and winter, followed by such gusts of wind and storms of snow as accompanied the month of March, and especially the opening weeks of April, operated in a great degree to retard the Auricula bloom, while it also necessitated the keeping close of frames and pits, which served to give the plants a drawn appearance. All the Auricula cultivators in the midland and northern districts concurred in a general testimony as to the backward season, and many contrivances had been resorted to to hasten the time of flowering. Some growers were unable to show a single flower, and there is reason to believe that, had the exhibition taken place a fortnight later, a much better show would have resulted; as it was, a great number of flowers were staged, and in spite of all the retarding and uncongenial influences of the early spring, some fine flowers were produced.

In addition to what in the North are termed "pans," but in the South groups or collections, of six and four Auriculas, there were, as usual, classes for varieties of the four sections into which Auriculas are divided, namely, green-edged, grey-edged, white-edged, and selfs. There were also classes for alpine Auriculas with yellow centres, and alpine Auriculas with white centres, it having been deemed advisable to separate these for competitive purposes, owing to the greater prominence given by cultivators and judges to varieties having golden centres to those having white centres. The old gold-laced Polyanthus is cared for also, for some of the fine old florists' varieties with their richly-laced margins are still cultivated in the North, though comparatively unknown in the South, and these are shown in pairs of two distinct

varieties, and also as single plants. As a general rule, and especially if the exhibitor lives at a distance from Manchester, the plants are brought to the show turned out of their pots, with the balls of soil reduced, and then bound up in paper with damp moss about the roots. A stake is placed to each truss to keep it steady, and cotton wool placed around and about the pips, to keep them from rubbing against each other. At the Town Hall—the exhibition of Auriculas annually taking place under the auspices of the Manchester Botanical and Horticultural Society—clean pots and short green grass are provided by Mr. Bruce Findlay, and the plants are placed in the pots and secured in an upright position by stuffing the grass or moss firmly about the balls. The supports to the flower stems are then removed, for the trusses are shown free from all artificial packing and support, and regularly arranged on tables. The task of judging then proceeds, invariably with great caution and deliberation. The awards are pretty certain, however, to lead to difference of opinion, but they are acquiesced in, and remain unreversed.

The premier prize is for the best pan of six dissimilar varieties, one at least of each of the classes. This was again won by the Rev. F. D. Horner, Kirkby Malzeard, Ripon, the Hon. Secretary of the Society, who has won this prize two years in succession, staging on this occasion, green-edged Traill's Anna and Booth's Freedom, the latter in fine condition; grey-edged Lancashire Hero and Sykes' Complete; white-edged Smiling Beauty, in superb condition, and Topsy, an excellent dark self; 2d, Mr. Wilson, Halifax, with green-edged, Prince of Greens and Colonel Taylor; grey-edged George Lightbody (Headly), very fine; white-edged Regular and Smiling Beauty, and Portman's Garibaldi, a fine dark self; 3d, Mr. Thomas Woodhead, Halifax, with green-edged Lady Richardson and Colonel Taylor; grey-edged The Czar (Read), a most promising new variety; and Sykes' Complete; white-edged Smiling Beauty, and self, Mrs. Sturrock; 4th, Mr. B. Simonite, Sheffield, with green-edged Imperator and Talisman, a promising flower of his own raising, with a fine broad pip; grey-edged Conqueror of Europe and Robert Traill; white-edged Frank Simonite(Simonite), appearing as if it would become a good standard variety; and self Bessy Bell. Six collections competed in this class. In that for four dissimilar varieties five collections were staged, and the 1st prize was awarded to Mr. B. Simonite, Sheffield, who had green-edged Admiral Napier, grey-edged Robert Traill, white-edged Traill's Beauty, and self Mrs. Sturrock; 2d, Mr. Wilson, Halifax, with green edged Imperator, grey-edged George Lightbody, white-edged Smiling Beauty, and self Meteor Flag; 3d, Mr. Woodhead, Halifax, with green-edged Imperator, grey-edged Chapman's Maria, white-edged Smiling Beauty, and self Mrs. Sturrock; 4th, the Rev. F. D. Horner, with green-edged Traill's Anna, grey-edged George Lightbody, white-edged Smiling Beauty, and self Mrs. Sturrock. In the class for the best pair of Auriculas, the plants to be dissimilar both in variety and class, the Rev. F. D. Horner was 1st with green-edged Prince of Greens and white-edged Smiling Beauty; 2d, Mr. Woodhead, Halifax, with green-edged Imperator and grey-edged Maria; 3d, Mr. Wilson, Halifax with green-edged Colonel Taylor and white-edged Smiling Beauty; 4th, Mr. Mellor, Ashton-under-Lyne, with grey-edged Conqueror of Europe and self Charles Perry. In this class seven pairs competed.

In the classes for premier honours, in each class a considerable number of flowers were staged, especially of selfs, which may be accounted for from the fact that the selfs are invariably a week earlier to bloom than the edged varieties. In the class for green-edged the premier prize went to the Rev. F. D. Horner, for the fine old Lancashire Hero, which was both well and somewhat numerously shown on this occasion; then Mr. Wilson, Halifax, with Colonel Taylor; the Rev. F. D. Horner, with Traill's Anna; Mr. W. Wardle, with Imperator; the Rev. F. D. Horner, with Prince of Wales; Mr. B. Simonite, with Talisman; Mr. E. Elliott, with Walker's Peveril of the Peak; and Mr. B. Simonite, with Lord Palmerston. The premium grey-edged came from Mr. B. Simonite, who had Samuel Barlow, an exceedingly good and promising flower, in the way of, and indeed a fine George Levick; then Mr. T. Mellor, with Ringleader; the Rev. F. D. Horner, with George Lightbody; Mr. T. Holden, with Sykes' Complete; the Rev. F. D. Horner, with John Waterson; Mr. S. Cooper, with Privateer; Mr. S. Barlow, with General Bolivar; Mr. T. Mellor, with Unique; and the Rev. F. D. Horner, with Ne Plus Ultra. The premier white-edge was Smiling Beauty, shown by the Rev. F. D. Horner; then Mr. Elliott, with Venus, and the same with Catharina; Mr. B. Simonite, with Maria; Mr. W. Wilson, with Regular; Mr. Dyson, with Smith's Ne Plus Ultra; the Rev. F. D. Horner, with Ann Smith; Mr. Wilson, with True Briton; and Mr. B. Simonite, with John Simonite (Walker), a fine variety, but not in good condition on this occasion. Mr. Walker has raised some fine seedlings, but they require a quick, warm, early season to bring them to perfection. The premier self was Turner's Charles Perry, shown by the Rev. F. D. Horner, who followed with Othello and Charles Perry, thus taking the first three prizes; then Mr. Wilson, with Mrs. Sturrock; Mr. S. Cooper, with Meteor Flag; the Rev. F. D. Horner, with Pizarro, and next with William Lightbody; Mr. S Cooper, with Mrs. Smith; and the Rev. F. D Horner, with Lord of Lorne.

The Alpine Varieties, though somewhat in force, were rather disappointing, as they seemed to lack the brilliancy of expression peculiar to this race. Coarseness rather than refinement, with a few exceptions, was the prevailing characteristic. This may to some extent be attributed to the fact that the fine self-coloured alpines are excluded from competition, owing to the absence of the shaded edge. The light, too, was not of a sufficiently powerful character to bring out the brightness of the alpine race with vivid distinctness. The best four dissimilar varieties came from Mr. Henry Steward, York, who had Conspicua, one of the best of the true shaded varieties, and three seedlings of but indifferent value; 2d, R. Gorton, Esq., Eccles, with Beatrice, Miss Reed, Diadem, and Queen Victoria, on the whole a better quartette than that placed before it; 3d, Mr. S. Cooper, with Diadem, Prior, Neatness, and Dazzle; and 4th, Mr. Thomas Holden, with Duchess of Cambridge, and three others unnamed. The premier yellow-centred flower was Ovid, from Mr. S. Cooper; Mr. Elliott, with an unnamed variety; Mr. S. Barlow, with Dazzle; Mr. R. Gorton, with Diana, and next with Diadem; Mr. T. Mellor, unnamed; Mr. S. Cooper, with Edgar, and next with Prior; and Mr. R. Gorton, with Brilliant. The premier white-centred flower was Mauve Queen, raised and shown by Mr. R. Gorton, a beautiful variety, having a dark ground, regularly shaded with bright mauve, and next with Purple Emperor; then Mr. S. Cooper, with Brilliant; Mr. R. Gorton, with a seedling; Mr. S. Cooper, with Diadem; Mr. Holden, with an unnamed variety; Mr. H. Steward, with a seedling; Mr. Holden, with an unnamed variety; and Mr. R. Gorton, with Crimson Queen.

Polyanthuses of the gold-laced section were much more largely represented than last year, and in better condition. Mr. Dyson, of Middleton, had the best pair in Exile and George IV., and Mr. T. Mellor, Ashton, 2d, with the same. The premier Polyanthus was Exile, from Mr. Dyson; and he was placed 2d also with the same variety; Mr. Elliott came 3d and 4th with Lord Lincoln and the Rev. F. D. Horner; then Mr. Dyson, with Cheshire Favourite; Mr. Elliott, with George IV.; Mr. Holden, with a seedling; Mr. Dyson, with Hilton's President; and Mr. Steward, seedling.

A new feature of interest was the introduction of some special prizes. One was for the best example of Lancashire Hero, green-edge, offered by Mr. Thomas Lancashire, the son of the raiser, which was awarded to the Rev. F. D. Horner. Mr. John Beswick offered prizes also for the best green-edge, and the best grey-edge flower—the former going to the Rev. F. D. Horner, for Booth's Freedom, shown in his collection of six varieties; and the 2d to Mr. Wilson, for George Lightbody. In each case the best flowers were selected from the entire exhibition.

A selection of flowers made in the several classes gave the following as the best in the entire show:—Green-edged: Booth's Freedom, Imperator, Traill's Anna, Simonite's Talisman, Prince of Greens, Beeston's Apollo, and Colonel Taylor. Grey-edged: Lancashire Hero, Sykes' Complete, George Lightbody, Read's Czar, Robert Traill, Conqueror of Europe, and Maria. White-edged: Smiling Beauty, Traill's Beauty, Ashwell's Regular, and Simonites' Frank Simonite. Selfs: Topsy, Headly's Petronella, Garibaldi, Pizarro, Lord of Lorne, Mrs. Sturrock, Charles Perry, and Lightbody's William Lightbody, a fine variety. As a rule the self flowers have not bloomed kindly this season. Of the alpine varities, the best yellow-centred flowers were Diadem, Prior, Queen Victoria, Dazzle, Diana, and Ovid. White-centred flowers: Mauve Queen and Duchess of Cambridge.

A feature that proved specially interesting to the Manchester people was a group of charming examples of spring-flowering Clematis, staged by Mr. C. Noble, Bagshot. The varieties were Miss Bateman, Queen Guinevere, Lord Napier, Lord H. Lennox, Albert Victor, Lady Emma Talbot, Lady Londesborough, Lord Londesborough, and Proteus, a distinct double variety. A group of Orchids and other plants, contributed by Dr. Ainsworth, Professor Williamson, and Messrs. E. Wrigley, J. Broome, and J. Leech, included good examples of Dendrobium nobile, D. Farmeri, D. Wardianum, D. crystallinum, D. Devonianum, Cattleya citrina, C. Mendelii, Oncidium longipes, O. Hallii, Odontoglossum Pescatorei, O. Phalænopsis, Saccolabium curvifolium, Masdevallia Veitchii, Cypripedium spectabile, &c. A robust-growing glaucous form of Araucaria excelsa, named Napoléon Baumann, appeared to be a very desirable plant. This came from Mr. J. Broome. Messrs. G. & W. Yates staged a miscellaneous group of plants, among which was a very fine example of Anthurium Scherzerianum, with spathes of brilliant colour and 3 inches across. Some hardy plants, including the rosy lilac Arabis blepharophylla, were staged by the same firm, together with some charming bouquets. Mr. S. Barlow staged some hardy Primulas, and Messrs. R. P. Ker & Co., Liverpool, some baskets of seedling forms of Azalea mollis, varied in colour and highly attractive.

Royal Botanic: *April* 26.—The second spring show of this Society was not such a good one as that held at the end of March. The long corridor had a thin appearance, and, but for a few good things, would have been unworthy of notice. The most striking objects exhibited were two splendidly-flowered groups of Clematis, from Messrs. G. Jackman & Son, Woking, and a group of specimen plants of Mignonette, shown by Messrs. James Carter & Co., and which were admitted to be probably the finest examples of cultivation ever exhibited. Amongst the Clematis the most striking varieties were Vesta, Sir Garnet Wolseley, Albert Victor, Lady Londesborough, The Queen, Stella, and Lord Mayo. These were remarkable for the richness and purity of their colours, and all were remarkable for their fine development and floriferousness. Messrs. James Carter & Co.'s finest specimens of Tree Mignonette were shown in the class for four plants, and most deservedly gained the 1st prize. The varieties shown were Tall Pyramidal, Hybrid Tree, Crimson Flowering Giant, and New White, and the plants were of perfect pyramidal growth, averaging about 5 feet in height from the rim of the pot, and from 3 to 4 feet in diameter at the base, each plant being amply furnished and splendidly flowered. Half-a-dozen smaller plants were shown in the miscellaneous class, the varieties represented being the New Dwarf Compact, Pyramidal Bouquet, Long Flowering White, New White, and Parson's Tree. A bronze medal was awarded to them. Hardy herbaceous plants were but sparsely shown, though they are always interesting. The best twelve came from the garden of W. Terry, Esq., Peterborough House, Fulham (Mr. W. P. Roberts, gr.), and included admirably flowered examples of Triteleia uniflora, conspicua, Primula cortusoides amœna, Trillium grandiflorum, Aubrietia purpurea grandiflora, Arabis albida, Symphytum caucasicum, &c. Mr. Terry's gardener was also the only exhibitor in the class for six herbaceous plants introduced before the beginning of the present century. The plants shown were Trollius asiaticus, Narcissus poetarum, Pulmonaria virginica, Daphne Cneorum, Alyssum saxatile, and Arabis albida, and the 1st prize was awarded. The best group of stove and greenhouse plants, and also of Heaths, were contributed by F. G. Wilkins, Esq., Leyton (Mr. Ward, gr.), included in the first-named being a plant of the remarkable Anthurium Scherzerianum Wardii, with eight grand spathes; and an Odontoglossum Pescatorei with three charming spikes. Half-a-dozen finely flowered dwarf standard Azaleas came from R. Thornton, Esq., The Hoo, Sydenham, (Mr. Ratty, gr.), and these had no difficulty in winning the 1st prize in their class. Mr. Turner was the only exhibitor of nine Roses in pots; and W. F. Watson, Esq., Isleworth (Mr. James gr.), of six Cinerarias. Both collections were good, and gained 1st prizes. Mr. Turner was also 1st in the nurserymen's class for six Azaleas. Messrs. James Carter & Co. were the winners of the 1st prize in a class for six Dielytras, with nicely grown plants. The best twelve Auriculas came from Mr. Turner, W. F. Watson, Esq. (Mr. James, gr.), being 2d. Mr. Turner had fine examples of Charles Perry (Turner), Topsy (Keynes), Colonel Champneys (Turner), Lord Clyde (Lightbody), Prince of Greens (Traill), George Lightbody (Headly), Mrs. Sturrock (Martin), Omega (Turner), and John Waterston (Cunningham).

Amongst miscellaneous subjects exhibited were a fine group of new and rare plants, from Mr. B. S. Williams; a smaller group from Messrs. W. Cutbush & Son, of Highgate; a nice collection of Caladiums, from W. Shuter, Esq., Belsize Park (Mr. A. Clark, gr.); a very attractive group of Orchids, from F. A. Philbrick, Esq., Avenue Road, Regent's Park (Mr. Heims, gr.); a collection of well-coloured Tricolor and Bronze Pelargoniums, from Mr. T. Pestridge, Brentford; four boxes of nice cut blooms of Roses and two of Zonal Pelargoniums, from Messrs. W. Paul & Son, Waltham Cross; and two boxes of nice blooms of Maréchal Niel Rose, from Mr. J. Walker, Thame, Oxon.

Botanical Certificates were awarded to Mr. B. S. Williams for two new Ferns, Niphobolus heteractis and Hypolepis Bergiana; and Mr. Turner had a Floral Certificate for Auricula Mrs. Purves (Turner), a very refined grey-edged variety, with the ground of a dark purple colour, and a pure white paste. Messrs. Paul & Son, The Old Nurseries, Cheshunt, received a similar award for their seedling H.-P. Rose Duke of Connaught, a full and well-built flower of a dark crimson-claret colour, somewhat in the way of Lord Macaulay.

Notices of Books.

The *Botanische Zeitung* for the past three months contains, as usual, many interesting articles, one or two of which we will briefly summarise. Dr. E. Askenasy has been following up the investigations by Sachs and others in Germany, and Sorby in this country, on the influence of light on the colour of flowers. Experiments were made with the varieties Silver Standard (red and white), Tournesol (red and yellow), and Canary Bird (yellow) of Tulipa Gesneriana, both in the full light and in complete darkness, with the result that there was no appreciable constant difference in the colours of the flowers. The plants of both series were in a temperature of about 15° C. (69° Fahr.), and the etiolated leaves and stems of the plants kept in the dark quickly became green on being exposed to the light. Yellow and blue varieties of Crocus vernus developed well-formed fully-coloured flowers in the dark in a temperature of 46° Fahr. Experiments with a deep violet blue variety of Hyacinthus orientalis furnished very different results. Light exercised a twofold influence—an acceleration of at least a fortnight in the development of the flowers, and a much more intense and more diffused colour. The flowers unfolded in the dark were not colourless, but they were only tinged in the parts that were most deeply coloured in the normally developed flowers. The terminal portion of the inflorescence of several of the plants in the dark was taken off before all the flowers were expanded, and placed in water on the south side of a greenhouse, and in three days these exhibited the normal colour, whilst those of the lower portion, left in the dark, had not increased in intensity. It is worthy of remark that this change of colour is independent of the previous formation of chlorophyl, for the older expanded flowers did not first change green and then blue, but at once assumed a dark blue, whereas the unopened flowers at the top first secreted chlorophyl, which gradually lost its colour, and its granules were ultimately dissolved. The dissolved colouring matter in the flowers of Hyacinths resides chiefly in the layer of cells immediately underlying the epidermis; in the anthers alone it occurs in the epidermal cells, and in the darkened plants the anthers were always dark blue. Flowers of Pulmonaria officinalis darkened exhibited the normal change of red to blue, but in proportion to the less advanced stage of the flowers when placed in darkness the fainter the colours, until they were almost colourless. Experiments with a red-flowered variety of Silene pendula, with Antirrhinum majus and Prunella vulgaris gave similar results, and therefore it appears clear, says Dr. Askenasy, that some flowers require light to develope their normal colours, whilst others are independent of it. Dr. Ernst, of Caracas, contributes some miscellaneous notes, chiefly observations on the phenomena exhibited by tropical vegetation. He gives two instances of what he regards as "extraordinary vitality of seeds." On removing the old market buildings at Caracas and levelling the ground for a garden, thousands of plants of Capsella Bursa-Pastoris and Broteroa trinervata sprang up. After carefully investigating the circumstance, Dr. Ernst believes that the seeds of these plants must have lain dormant in the soil for a very long period. Less open to doubt is the case of a plant of Ipomœa acuminata continuing to grow and flower for three weeks after it was cut off at the root. It was still growing when Dr. Ernst wrote, but showed signs of exhaustion in the fall of the larger leaves and weakness of the young shoots. Datura Tatula, instead of being a common plant in the mountains of Caracas, as De Candolle states, is only found on cultivated ground and in the vicinity of human habitations, and presents every appearance of an introduced plant. On the periodicity of vegetation, Dr. Ernst has some interesting remarks. Last year the dry season was unusually prolonged, notwithstanding which the splendid Erythrina umbrosa and E. mitis, used as shade trees for the Coffee plantations, Bombax Ceiba, and Eriodendron anfractuosum and many other deciduous trees, unfolded their foliage and flowers at the usual time in a drought that was almost absolute. It is also impossible to prevent them from dropping their leaves and ceasing to grow during the dry season, no matter how liberally they may be watered. On the rapidity of the movement of water in plants, Dr. Pfitzer communicates some preliminary observations. He was induced to make some experiments to elucidate this question, because he was under the impression that McNab's figures published in 1871 were too low. McNab employed saline solutions, as they are easily detected by spectrum analysis, and the greatest speed he observed was 46 centimetres in the hour. Dr. Pfitzer's method was this:—A number of plants in pots were kept without water until their leaves began to droop, and then after the exact position of some of the leaves had been indicated by firmly fixed pins water was given in abundance, and the interval that elapsed before the leaves rose again to different heights noted. Of course this method of procedure is open to objections, and there are doubtless some deductions to be made from the periods given, but all pathological influences are excluded. The greatest rate of movement observed in this way was about 5 metres in the hour. Thus in a plant of Justicia Adhatoda a leaf, 25.3 centimetres above the earth, rose in 3 minutes after the water was applied. Indeed the flow is so rapid that it is impossible to determine the order in which leaves at different heights rise. Mr. McNab's second series of experiments in 1874, with lithium solution, by which he obtained a maximum of 40 inches in the hour, were also repeated by Pfitzer, with some slight modifications, on different plants. The results were, that the current in branches of Philadelphus was at the rate of about 4½ metres, in Amarantus about 6, and in leaves of Helianthus frequently over 10 metres per hour. The maximum rate reached was 22 meters per hour in leaves of Helianthus animus. As Dr. Pfitzer observes, the rate of movement of the fluid depends upon the nature of the plant under experiment, and is greatly influenced by the relative quantity of water in the plant. After a plant is fully charged the current is very slow; and a plant, or portion of a plant, that has been allowed to wither very much is a long time before it fully regains the power of conducting the water. An elaborate illustrated article on the rate of growth in plants, by Dr. Reinke, extends through six numbers, and will not bear compression within the space at our service. The principal remaining articles of importance are:—"Contributions to the Knowledge of the Swarmspores of Ulothrix zonata," by Dr. Arnold Dodel-Post; "Further Observations on the Diastase and Pepton-forming Ferments in the Vegetable Kingdom," by E. von Gorup-Besanez; "On the Behaviour of Alcoholic Yeast in a Medium Destitute of Oxygen-gas," by M. Traube; "Life History of the Basidio-Mycetes," by Oscar Brefeld; and "Morphology of the Araceæ," by Dr. Engler.

—— Now that spring may fairly be expected to call to life and activity many of the inmates of our gardens—bidden and unbidden—we may commend to the notice of our readers a charming little book, prettily illustrated, and entitled *The Dwellers in Our Gardens, their Lives and Works*, by Sara Wood (Groombridge). The titles to some of the chapters will give an idea of the plan of the work, and we need add no more than that the plan is well carried out, and that a very pleasant, readable, and, so far as we have seen, accurate book is the result—one which would form a capital present to a boy or girl blessed with a taste for natural history. Here are the titles of some of the chapters:—The Slow One who Stays much at Home, The Spinner and the Weaver, Three Lives in One, Underground Dwellers and Workers, The Busy Ones who Look to the Future, Our Garden Choristers, &c.

—— Mr. Phippen has published a third edition of his *Practical Advice to Testators and Executors* (Hamilton, Adams & Co.), a sufficient evidence of the favour with which the book has been received. So far as we have had the opportunity of testing it we have found its directions clear, simple, and accurate.

—— The last number of the *Revue Horticole* contains a coloured plate of Fuchsia boliviana, a species introduced from Bolivia by M. Roezl, and having much of the appearance of F. corymbiflora, but smaller and more free-flowering.

—— By reprinting in fac-simile Izaak Walton's *Complete Angler* from the first edition of 1653, Mr. Elliot Stock has rendered good service, not only to "contemplative men" who find their recreation in angling, but to all who appreciate quaint diction, quiet humour, and a perfect sympathy with the country and its charms. This "discourse of fish and fishing not unworthy the perusal of most anglers" has been long relished by those who never cast a fly nor are likely to do so. Those that "hate contentions and love quietness and vertue and angling," will need no reminders of ours as to the peculiar charm of this delightful volume, but they and others who cannot lay claim to all the attributes just mentioned will be glad to see the "master's" work so admirably reproduced.

—— Professor Schimper has published a second edition, much enlaged and improved, of his classical work on mosses—*Synopsis Muscorum Europæorum*—indispensable to advanced students of mosses, and to which we shall advert at greater length on another occasion. The work is in Latin, and may be procured of Messrs. Williams & Norgate.

—— The third *Annual Report of the Secretary for Agriculture* of the colony of Victoria (Melbourne) has reached us. It contains some valuable reports on forestry and meteorology, to which we shall hereafter allude at greater length.

—— The *Revue Horticole* of April 16 gives a figure and description of Agave attenuata, a species remarkable for the development of a long stem of some metres in height, at the summit of which is the tuft of elliptic leaves tapering to each end. The species flowered at the Jardin des Plantes last year. It is the A. glauca of some gardens, the A. dealbata of Lemaire, and the A. Deborryana of Jacobi, and is a native of Mexico.

—— The *Bulletin d'Arboriculture* gives this month coloured plates of Lord Suffield Apple and Lord Palmerston Peach, two fruits whose merits are so well tested in this country that we are glad to see them appreciated on the other side of the water.

—— We understand that Messrs. Hardwicke & Bogue will shortly publish a practical guide to the laying-out, planting, and arrangement of villa gardens, town squares, and open spaces, from a quarter of an acre to 4 acres, by Mr. Joseph Newton, F.R.H.S. It will be illustrated with plans, showing the various styles of arrangement, &c.

—— We have received a prospectus of a new *Landwirthschaftliches Konversations-Lexikon*, to be published by Thiel, Strassburg, in six volumes. It will be a very comprehensive work, and include not only all that appertains to practical farming and gardening, but also such subjects as botany, chemistry, geology, and other sciences bearing directly or indirectly upon agricultural and horticultural operations. The different branches are entrusted to men of recognised ability only. Thus to Drs. De Bary and Kühn is entrusted the task of writing the chapters on the maladies of plants, and M. Goeschke will treat of fruit growing. The work will be issued in fortnightly parts, and it is expected that it will be completed towards the end of 1878.

—— Among the more important reprints of the season we may mention the issue of a second edition of Mr. Darwin's *Variation of Animals and Plants Under Domestication* (Murray, 2 vols., 8vo.). At the time of the first publication of this book we gave an extended notice of it, and the experience of the seven years which has elapsed, during which we have made very frequent reference to it, has amply confirmed the high opinion we then formed of the book as a reference cyclopædia of heretofore scattered facts in natural history placed in a new light and all made to bear without unfair torsion on the central doctrine of evolution. Nowhere that we know of is there so admirable a summary of many points of the highest importance to gardeners, agriculturists, poultry rearers, and stock breeders as in these volumes, while the scrupulous care in the citation of references adds greatly to the value of the volumes. The present edition is smaller in point of size than its predecessor, the more nearly to correspond with Mr. Darwin's other works. In the introductory pages the excellent plan is followed of giving a table, with appropriate references to pages, of the principal additions and corrections to be found in the new edition. This is a piece of literary honesty adopted by the late Sir Charles Lyell and by Mr. Darwin, and for which they deserve the thanks alike of those who have to

purchase and those who have to consult their books. Among the additions relating to plants we find references to Major Hallett's Pedigree Wheat, to the origin of the cultivated Radish, an abstract of all the cases recently published of graft hybrids in the Potato, additional cases of bud variation cited, and various other matters which add to the already encyclopædic character of the volume, and render it more than ever a necessary adjunct to the naturalist's library.

—— Messrs. Groombridge's *Handy Concordance to the New Testament*, with contexts, comprising nearly 30,000 references, is a work whose title is accurately descriptive of its nature. It will be most useful for school use, but very many readers will be glad of so serviceable a little book, and to them we heartily commend it.

—— The *Revista de Horticultura* for March, 1876, contains a description of a new Lælia, L. geraensis, by Signor J. Barbosa Rodriguez. Among other articles we extract the following list as stated to be the best twenty-five Roses for the climate of Rio Janeiro, and which may be useful to some of our correspondents who grow Roses in the tropics. François Lacharme, Aleindor, Rainha de Portugal, Maréchal Niel, Elizabeth Vigneron, Madame Boll, Paul Néron, Dr. Henon, Société d' Horticulture de Melun, Emily Peel, Belle Lyonnaise, Célestine Forestier, Dr. Raynaud, General Washington, Pierre Notting, Madame Hippolyte Jamain, Adrien Christophle, Marie Sisley, David Pradel, Catherine Mermet, Cicero, Denis Helye, Princess Helena, Jean Pernet.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, APRIL 26, 1876.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
April	In.	In.	°	°	°	°	°	°	°		In.
20	29.17	−0.59	57.6	43.0	14.6	48.7	+ 1.3	43.1	81	S.S.W.; S.W.	0.04
21	29.44	−0.32	58.5	43.3	15.2	49.4	+ 1.8	45.4	86	S.S.W.; S.W.	0.00
22	29.71	−0.05	61	8 43.8	18	0 50.6	+ 2.8	45.3	82	WSW.; W.	0.00
23	29.82	+0.06	60	5 44	8	15.7 50.1	+ 2.1	41 5	76	E.N.E.; S.	0.00
24	29.86	+0.09	65.9	41 3	24	6 53.5	+ 5.3	43.6	69	S.; S.S.W.	0.02
25	29.93	+0.16	63.0	45.4	17.6	52.9	+ 4.6	41.1	64	WSW.; W.; WNW	0.01
26	29.96	+0.19	62.3	39.1	23.2	49.6	+ 1.1	38.7	66	W.; WNW	0.00
Mean	29.70	−0.07	61.4	43.4	18.0	50.7	+ 2.7	42.7	75	S.W.	sum 0.07

April 20.—Fine, but cloudy, with occasional showers, and strong wind.
— 21.—A fine day, but very dull and cloudy at times.
— 22.—A fine day. Cloudy and dull at times.
— 23.—Dull and cloudy till 11 A.M. Fine and bright afterwards.
— 24.—Fine, and partially cloudy. Frequent thin rain fell after 7 P.M.
— 25.—A fine day. Cloudy. A smart shower of rain at noon. Lightning seen at 10 P.M.
— 26.—Fine, but very cloudy. Overcast at night.

—— During the week ending Saturday, April 22, in the neighbourhood of London the reading of the barometer at the level of the sea decreased from 30.26 inches at the beginning of the week to 28.93 inches by the morning of the 19th; and increased to 29.98 inches by the end of the week. The mean reading for the week was 29.50 inches, being 0.29 inch below that of the preceding week, and 0.43 inch below the average.

The highest temperatures of the air observed by day ranged from 61¾° on the 22d to 49½° on the 17th; the mean value for the week was 56½°. The lowest temperatures of the air observed by night varied from 35¼° on the 16th to 43¾° on the 22d, the mean weekly value being 40¾°. The mean daily range of temperature in the week was 15¾°, the greatest range in the day being 20½° on the 18th, and the least 9½° on the 17th.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—16th, 43°, — 3°.6; 17th, 43°.6, — 3°.2; 18th, 47°, 0°.0; 19th, 46°.8, — 0°.4; 20th, 48°.7, + 1°.3; 21st, 49°.4, + 1°.8; 22d, 50°.6, + 2°.8. The mean temperature of the air for the week was 47°, being 0°.2 below the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo placed in sun's rays were 103° on the 16th, but on the 17th the reading did not rise above 58½°. The lowest reading of a thermometer on grass with its bulb exposed to the sky was 31½° on the 16th; the mean for the seven low readings was 38°.

The direction of the wind was mostly from the south, and its strength gentle. The weather during the week was generally dull, showery, and cloudy, though fine at intervals.

Rain fell on three days in the week, the amount collected was a quarter of an inch.

In England, the highest temperatures of the air observed by day was 63° at Leicester; at Bradford 56¾° was the highest temperature in the week; the mean from all stations was 59½°. The lowest temperature of the air observed by night was 25½° at Cambridge; at Norwich 37½° was the lowest temperature in the week. The general mean from all stations was 32⅞°. The range of temperature in the week was the largest at Cambridge and Hull, both 34°, and the smallest at Liverpool, 20¼°. The mean range of temperature from all stations was 27°. The mean of the seven high day temperatures was the largest at Leicester, 57°, and the smallest at Sunderland, 50¾°. The mean value from all stations was 54¼°. The mean of the seven low night temperatures was the smallest at Truro, 38°, and the largest at Brighton, 42½°. The general mean from all stations was 40°. The mean daily range of temperature in the week was the greatest at Cambridge, 17½°, and the least at Bradford, 11½°. The mean daily range of temperature from all stations was 14½°.

The mean temperature of the air for the week from all stations was 45½°, being 2½° lower than the value for the corresponding week in 1875. The highest in the week was 47½°, at Brighton, and the lowest 43½°, at Sunderland.

Rain fell on every day in the week at Wolverhampton, and on five and six days at most other stations; the amounts measured varied from 1¾ inch at Plymouth to a quarter of an inch at about London and Nottingham; the average fall over the country was three-quarters of an inch nearly.

The weather during the week was generally dull, cloudy, and showery. Thunder was heard at Liverpool on the afternoon of the 21st.

In Scotland, the highest temperatures of the air ranged from 61° at Dundee to 53½° at Aberdeen; the mean from all stations was 57°. The lowest temperatures of the air varied from 30½° at Greenock to 35° at Paisley; the mean from all stations was 32½°. The mean range of temperature from all stations was 24½°.

The mean temperature of the air for the week was 43¾°, being 4½° lower than the value for the corresponding week in 1875. The highest was 45½° at Glasgow, and the lowest 43° at Aberdeen.

Rain fell at Aberdeen to the amount of 1¾ inch nearly; at Dundee 1¼ inch fell; but at Paisley five-hundredths of an inch only was measured; the average fall over the country was three-quarters of an inch.

At Dublin, the highest temperature of the air was 60°, the lowest 35°, the range 25°, the mean 47⅛°, and the fall of rain 0.62 inch.

JAMES GLAISHER.

Enquiries.

He that questioneth much shall learn much.—BACON.

114. ALLOTMENT GARDENS. — Will some of your readers be kind enough to say where I can obtain rules for management of allotment gardens? *R. Binns, Derby.*

115. LEICESTER MARKET. — *J. R., Rugby*, would be glad to know whether Leicester is supplied with fruit and vegetables from its own district or from the surrounding counties.

Answers to Correspondents.

BLACK-EYED SUSAN: *W. T. T.* It seems to us that Susan, *alias* Potentilla fragariastrum, has had a blow in the eye from Jack Frost—very ungallant, no doubt. Report the case to the Clerk of the Weather.

BOOKS: *Subscriber.* Kemp's *How to Lay Out a Garden* (Bradbury, Agnew & Co.). We know of no good work on the construction of rockwork.

GARDENERS' BENEFIT SOCIETY: *A Subscriber.* If you mean the Gardeners' Royal Benevolent Institution, write to the Secretary, Mr. E. R. Cutler, Tavistock Row, Covent Garden.

NAMES OF PLANTS: *E. G. H.* The Willow-leaved Pear tree (Pyrus salicifolia).—*A. W.* Scopolia carniolica.—*G. T. W.* Millet, Sorghum.—*J. R., Rugby.* A double form of the old Russian Violet, we believe. —*A Subscriber.* Berberis Darwinii.—*J. H.* Linum flavum, as far as we can tell from such a scrap.

ORCHIDS: *J. R. H.* Get Mr. B. S. Williams' *Orchid Growers' Manual.* It will tell you all that you will want to know,—for a time, at all events. Do not attempt to grow Melons and Cucumbers on wires in an Orchid-house.

PEACH LEAVES: *J. S.* The affection on your Peach leaves is not caused by any fungus, but by atmospheric conditions. Precisely the same affection has occurred in a Peach tree situated just under an aperture which admitted cold draughts, and occasionally rain spots; and doubtless the condition of your leaves is due to some peculiar situation, which you can best appreciate yourself. Where an artificial temperature is kept up it is sometimes strange what an effect may be produced by a sudden, though momentary, admission of a cold blast, especially when the leaves are delicate. *M. J. B.*

ROSES: *W. A.* Triomphe de Caen is a hybrid perpetual. We know nothing of the other two, nor can we find the names in Rose catalogues.

SOILS: *A. Millar.* Please be more explicit. We cannot understand what you want to know.

VIRGIN CORK: *J. C.* The so-called roots on your Cork are nothing but a kind of lichen, similar to that found on Apple trees, &c.

WOODLICE: *J. H.* Pour scalding hot water into the crevices occupied by them. If you persevere with this their numbers will soon be reduced.

☞ FOREIGN SUBSCRIBERS sending Post Office Orders, payable at the post-office, King Street, Covent Garden, London, are requested to be good enough to write to the Publisher, at the office of this paper, 41, Wellington Street, Covent Garden, at the same time, to inform him of the fact.

CATALOGUES RECEIVED:—Messrs. Simon-Louis Bros. (A Plantières-les-Metz, Lorraine annexée, Germany), Catalogue of Plants, &c.—Mr. W. Rumsey (Joyning's Nurseries, Waltham Cross, N.), List of New Verbenas, Select Seeds, Miscellaneous Bedding Plants, &c.—M. Louis Roempler (11 and 15, Rue des Jardiniers, Nancy, Meurthe-Moselle, France), General Catalogue of Seeds, Plants, &c.—M. Alexis Dallière (Faubourg de Bruxelles, Ghent, Belgium), Supplement to General Plant Catalogue.—M J. Linden (52, Rue du Chaume, Ghent, Belgium), Illustrated Catalogue of Plants, &c.

COMMUNICATIONS RECEIVED.—W. J. (with many thanks).—Professor Decaisne.—W. B. H.—E. M.—E. S. D—H J O. W.—N. E.—H. H. D.—J. G. E.—J. J.—J. Cameron.

*** IMPORTANT NOTICE.—*The* AGRICULTURAL GAZETTE *is now* PUBLISHED *on* MONDAYS, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, April 27.

A better tone has pervaded the market since the last report, and though supplies have been good, prices have been generally maintained. Grapes, owing to the much larger quantities than usual received from the Channel Islands, are in excess of the demand, and inferior samples are only cleared at very low prices. The first Peaches have arrived, but, though of good size, show a great want of colour. St. Michael's Pines still come in large quantities, but are falling off very much in appearance, and foreshadow the close of their season. *Jas. Webber, Wholesale Apple Market.*

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per doz.	24	0-60	Fuchsia, per doz.	9	0-18
Begonias, per doz.	6	0-12	Genista, do.	6	0-18
Bouvardias, do.	12	0-18	Heaths, in var., doz.	12	0-30
Calceolaria, per doz.	12	0-24	Hyacinths, per doz.	9	0-18
Cineraria, per doz.	6	0-18	Lily of Valley, doz.	12	0-30
Cyclamen, do.	9	0-18	Mignonette, do.	6	0-9
Cyperus, do.	6	0-12	Myrtles, do.	3	0-9
Deutzia, do.	6	0-18	Pelargoniums, scarlet, per doz.	4	0-9
Dielytra, do.	12	0-24	— in variety, doz.	18	0-36
Dracæna terminalis	30	0-60	Roses, Fairy, do.	9	0-15
— viridis, per doz.	18	0-24	— various, do.	18	0-30
Epacris, do.	12	0-18	Solanums, do.	6	0-24
Euphorbia jacquiniæflora, per doz.	9	0-18	Spiræa, per doz.	9	0-24
Ficus elastica	2	6-15	Veronica, do.	4	0-12

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	4	0-12	Nemophila, 12 bun.	1	6-4
Azaleas, 12 sprays	0	6-2	Pelargoniums, 12 spr.	1	0-3
Camellias	1	6-12	— Zonal do.	0	6-1
Carnations, 12 blooms	2	0-4	Pinks, white, p. doz.	2	0-4
Cineraria, per bunch	1	0-2	Primula, dbl., p bun.	1	0-1
Cyclamen, 12 blooms	3	0-6	Rhododend., 12 buds.	1	6-6
Eucharis, per doz.	6	0-12	Hyacinths, 12 sprays	1	0-3
Gardenia, per doz.	2	0-9	Roses, indoor, p. doz.	1	6-10
Heliotropes, 12 spr.	0	6-1	Spiræa, 12 sprays	1	0-4
Lily of Valley, 12 spr.	1	0-4	Stephanotis, 12 sprays	6	0-18
Mignonette, 12 bun.	6	0-9	Violets, 12 bunches	1	0-4
Narcissus, per dozen	0	6-3			

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1	6-5	Oranges, per 100	6	0-12
Cobs and Filbts., lb.	0	9-1	Peaches, per doz.	21	0-36
Grapes, per lb.	4	0-18	Pears, per doz.	3	0-15
Lemons, per 100	6	0-10	Pine-apples, p. lb.	1	6-4
Melons, each	0	0-0	Strawberries, per oz.	0	3-1

VEGETABLES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	4 0– ..	Lettuces, per score..	2 0– ..
— Jerusalem, p. lb.	0 3– ..	Mint, green, bunch	0 6– 1 0
Asparagus (English), per bundle ..	6 0–10 0	Mushrooms, per pott.	1 0– 2 0
— French	4 0– 5 0	Onions, young, bun.	0 4– 0 6
Beans, French, p. 100	1 3– 2 6	Parsley, per bunch..	0 4– ..
— Longpod, basket	5 0– ..	Peas, green, per lb..	1 0– ..
Beet, per doz. ..	1 0– 2 0	Potatos (new), baskt.	1 0– ..
Cabbages, per doz. ..	1 0– 2 0	— new Jersey, p. lb.	0 6– 1 6
Carrots, per bunch..	0 6– ..	— Sweet, per lb. ..	0 6– ..
— new, do. ..	2 0– ..	Radishes, per bunch.	0 1– 0 3
Cauliflowers, p. doz.	2 0– 4 0	— Spanish, doz. ..	1 0– ..
Celery, per bundle ..	1 6– 2 0	— French	0 6– ..
Cucumbers, each ..	0 6– 2 0	Rhubarb, per bundle	0 6– 1 0
Endive, per doz. ..	1 0– 2 0	Salsafy, per bundle..	0 9– ..
— Batavian, p. doz.	2 0– 3 0	Seakale, per punnet	2 0– 3 0
Herbs, per bunch ..	0 2– 0 4	Shallots, per lb. ..	0 3– ..
Horse Radish, p. bun.	3 0– 5 0	Spinach, per bushel	3 0– ..
Leeks, per bunch ..	0 2– 0 4	Turnips, per bundle	0 4– ..
		— New French, do.	2 0– ..

Potatos — Rocks, 105*s.* to 110*s.*; Regents, 120*s.* to 170*s.*; Flukes, 130*s.* to 160*s.*; Victorias, 120*s.* to 160*s.* per ton.

SEEDS.

LONDON: *April* 27.—A steady retail trade is now doing in agricultural seeds. For red Clover seed, although the quantity remaining is comparatively small, some holders, taking into consideration the advanced state of the season, and being anxious to clear out their stocks, appear not unwilling to make some slight concession in price. White and Alsike are firm, the supply of both descriptions being limited. Trefoils are also in narrow compass, and, being in good demand, move off at full rates. Perennial grasses are easier, and Italian two points downwards. For spring Tares there is a fair sale at last week's currencies. More inquiry is shown for Rape seed, and Mustard likewise readily finds buyers, the impression prevailing that higher rates for both varieties must shortly rule. In Canary seed a further drop must be noted. Hemp is steady. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Trade at Mark Lane on Monday was very dull. The supply of English Wheat was small, and of foreign moderate, millers, however, were very slow to buy, and holders had some difficulty in supporting previous quotations. Barley was held for extreme rates, but there was little disposition to operate in either malting, grinding, or distilling. Malt was quoted as before. Oats met with a quiet sale, and no material change was observable in prices. Maize was steady, as also were Beans and Peas, and in the value of flour no change was reported. Some concession, however, was occasionally made to close sales.—On Wednesday prices for Wheat were rather in buyers' favour. Barley was slow of sale, and only the superior qualities were fully as dear as on Monday. Malt was nominally without change. The supply of Oats was not large, and there was not much disposition to operate. Maize, Beans, and Peas were quoted as before, and there was no change reported in flour. — Average prices of corn for the week ending April 22:—Wheat, 45*s.* 3*d.*; Barley, 34*s.* 2*d.*; Oats, 25*s.* 5*d.* For the corresponding week last year:—Wheat, 43*s.* 4*d.*; Barley, 41*s.* 1*d.*; Oats, 29*s.* 9*d.*

CATTLE.

At the Metropolitan Market on Monday there was a large increase in the supply of both English and foreign beasts, consequently prices were lower, although there was a fair demand. The number of sheep was also considerably larger. Choicest English were readily disposed of at late rates. Calves were lower, the demand being very limited. Quotations: —Beasts, 4*s.* 4*d.* to 4*s.* 10*d.*, and 5*s.* 4*d.* to 5*s.* 10*d.*; calves, 5*s.* 4*d.* to 6*s.* 4*d.*; sheep, 5*s.* 6*d.* to 6*s.*, and 6*s.* 4*d.* to 6*s.* 10*d.*; lambs, 8*s.* 4*d.* to 9*s.* 4*d.*; pigs, 4*s.* 6*d.* to 5*s.* 8*d.* — The beast market was scantily supplied on Thursday, but sales were slow, and prices no better, the assortment being rather unsaleable. Sheep met a fair inquiry, and prime Down wethers realised advanced rates. Lambs were in strong demand, and much dearer. Calves brought full value for prime.

HAY.

Cumberland Market quotations:—Superior meadow hay, 140*s.* to 147*s.*; inferior, 100*s.* to 126*s.*; superior Clover, 150*s.* to 160*s.*; inferior, 120*s.* to 135*s.*; and straw, 48*s.* to 53*s.* per load. — At Whitechapel market on Thursday supplies were fair, and the trade steady. Quotations:—Clover, best, 120*s.* to 150*s.*; inferior, 85*s.* to 95*s.* Hay, best, 112*s.* to 135*s.*; inferior, 55*s.* to 75*s.*; straw, 38*s.* to 50*s.* per load.

POTATOS.

From the Borough and Spitalfields markets we learn that the trade was steady, and prices were well supported, for the better descriptions of which there was a fair supply. Kent Regents, 130*s.* to 180*s.* per ton; Essex ditto, 100*s.* to 145*s.*; Rocks, 95*s.* to 110*s.*; Flukes, 130*s.* to 170*s.*; Victorias, 150*s.* to 170*s.*; Kidneys, 110*s.* to 140*s.* The imports into London during last week were:—41 boxes, 468 sacks, 1277 casks, 1731 pkgs., 120$5\frac{1}{2}$ tons, and 39,425 bags.

COALS.

There was a good demand for house coals in the market on Monday, and the prices advanced 6*d.* to 1*s.* per ton. On Wednesday there was a fair demand, and Hartleys rose 6*d.* per ton. Quotations:—West Hartley, 18*s.* 3*d.*; Walls Ends—Harton, 19*s.* 3*d.*; Hetton, 22*s.*; Hetton Lyons, 19*s.* 3*d.*; Lambton, 21*s.* 6*d.*; Original Hartlepool, 22*s.*; Tunstall, 19*s.* 3*d.*; Chilton, 21*s.*; East Hartlepool, 21*s.* 9*d.*

NEW VERBENAS (ECKFORD'S).
The finest ever yet offered. See
JOHN KEYNES' CATALOGUE, 1876.

NEW ROSES, 1876.
Selected varieties. See
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LETTY COLES (KEYNES')—
the ROSE of the season—
Will be sent into commerce the first week in May.
All particulars, consult
JOHN KEYNES' CATALOGUE.

NEW DAHLIAS for 1876.
Keynes' grand flowers. See
JOHN KEYNES' CATALOGUE for 1876.
Castle Street Nursery, Salisbury.

COCOA-NUT FIBRE, as supplied to H.R.H. the Prince of Wales, the Emperor of Germany, Messrs. Veitch & Co., and thousands of Nurserymen, Gardeners, and others, is INVALUABLE for Forcing and Plunging, a wonderful incentive to growth of Flowers, Vegetables, &c. 20 bushels, 6*s.* 8*d.*; 50 for 12*s.* 6*d.*; truck, 45*s.*; sample bag, 2*s.* 6*d.*; delivered free on to rail or within 5 miles.
ABBOTT AND CO., 80, Bishopsgate Street Without, E.C., Manufacturers of Cocoa-nut Fibre, Mats, and Matting, at Eagle Steam Works, Hatcham Road, Old Kent Road, S.E. Importers of Russia Mats, Raffia Fibre, &c.
Price LISTS on application.

COCOA-NUT FIBRE.—Invaluable for Decorative and other purposes, 20 bushels, 6*s.* 8*d.*; 20*s.* per 100 bushels, 45*s.* per 300 bushels. Larger quantities contracted for.
J. STEVENS, Fibre Works, High Street, Battersea, S.E.

Fibrous Peat for Orchids, &c.
BROWN FIBROUS PEAT, best quality, for Orchids, Stove Plants, &c., £6 6*s.* per truck.
BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, New Holland Plants, 17*s.* per ton.
Delivered on rail at Blackwater, S. E. R., or Farnborough, S. W. R., by the truck-load. Sample sack, 5*s.* 6*d.* each.
Fresh SPHAGNUM, 10*s.* 6*d.* per sack.
WALKER AND CO., Farnborough Station, Hants.

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Sub-Manager and Secretary—C. T. MACADAM.
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WESTERN COUNTIES BRANCH—Queen Street, Exeter.
Particulars will be forwarded on application to the Secretary, or may be had of the Local Agents.

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BELL'S MILDEW COMPOSITION, as used by them for the last twenty-five years at their "HORTICULTURAL ESTABLISHMENT, BRACONDALE," their "NURSERIES, LAKENHAM," and "VINERIES, THORPE HAMLET," consisting of over 30,000 feet of glass. Retail, 1*s.* 6*d.* and 2*s.* 6*d.* per bottle, of the Sole Manufacturers,
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GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.
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BONDED TOBACCO STORES, SHAD THAMES, LONDON, S.E.

TOBACCO PAPER and CLOTH.—NURSERYMEN, SEEDSMEN, and FLORISTS, can be supplied with TOBACCO PAPER and CLOTH (best quality guaranteed), 28 lb. for One Guinea. Orders for 1 cwt. or over carriage paid to any railway station in London. Warranted genuine.
DARLINGTON BROS., Frederick Street, New Road, Chatham, Kent.

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Wholesale and Retail Price (low) on application to
J. GEORGE, Putney Heath, London, S.W.

TOBACCO CLOTH and PAPER.—The cheapest and best article for Smoking Greenhouses and Destroying Fly. Price 1*s.* 4*d.* per lb.; over 10 lb., 1*s.* 1*d.* Tobacco Paper, 1*s.* per lb., £4 4*s.* per cwt. P.O.O. payable at 165, Blackfriars Road, S.E.
JOSEPH BAKER, 14, Nelson Square, Blackfriars Road, S.E.

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MADE of PREPARED HAIR and WOOL.
A perfect non-conductor of heat or cold, keeping a fixed temperature where it is applied. A good covering for Pits and Forcing Frames.
PROTECTION from COLD WINDS and MORNING FROSTS.
"FRIGI DOMO" NETTING, 2 yards wide, 1*s.* 4*d.* and 1*s.* 10*d.* per yard.
"FRIGI DOMO" CANVAS.
2 yards wide .. .. 1*s.* 10*d.* per yard run.
3 yards wide .. .. 3*s.* per yard.
4 yards wide .. .. 3*s.* 10*d.* per yard.
ELISHA T. ARCHER, only Maker of "Frigi Domo," Stanstead and Brockley Roads, Forest Hill, London, S.E.; and of all Florists and Seedsmen. All goods carriage paid to London.
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RUSSIA MATS, for Covering Garden Frames.—ANDERSON'S TAGANROG MATS are the cheapest and most durable. Price List, which gives the size of every class of Mat, forwarded post-free on application.
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RUSSIA MATS.—A large stock of Archangel and Petersburg, for Covering and Packing. Second sized Archangel, 100*s.*; Petersburg, 60*s.* and 80*s.*; superior close Mat, 45*s.*, 50*s.*, and 55*s.*; packing Mats, 20*s.*, 30*s.*, and 35*s.* per 100; and every other description of Mat at equally low prices, at
J. BLACKBURN AND SONS, Russia Mat and Sack Warehouse, 4 and 5, Wormwood Street, E.C.

RUSSIA MAT MERCHANTS.
Tanned and New Netting—Wholesale Prices.
Raffia Fibre, Tiffany, Canvas, &c.
MARENDAZ AND FISHER, James St., Covent Garden, W.C.

MATS.—Several thousand Petersburg and others, for Packing and Tying, from 20*s.* per 100. The Trade supplied.
MALTBY AND CO., Importers, 11, Fenchurch Buildings, London, E.C.

RALPH WALLER AND CO., 45, Dale Street, Manchester, Manufacturers of all kinds of GARDEN NETTING, &c., for protecting Fruit Trees from Frost; also
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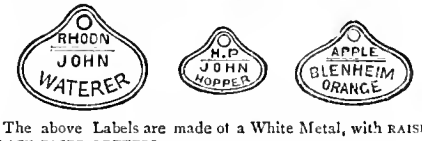

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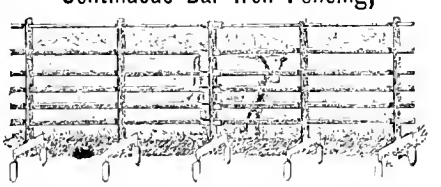

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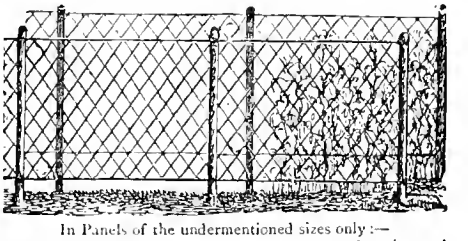

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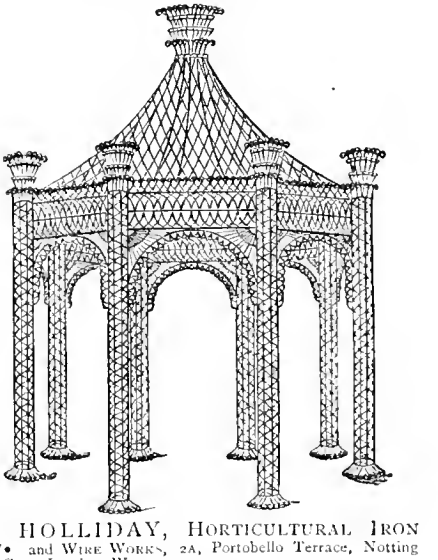

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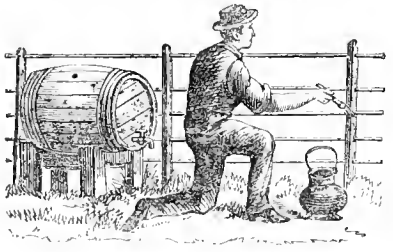

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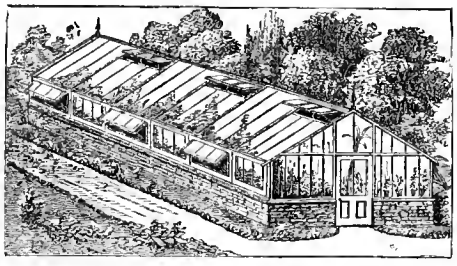

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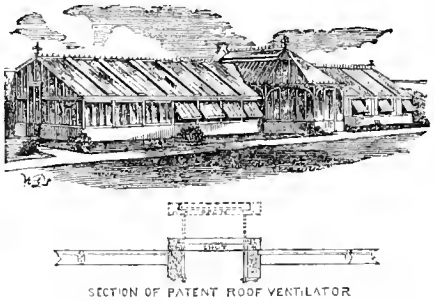

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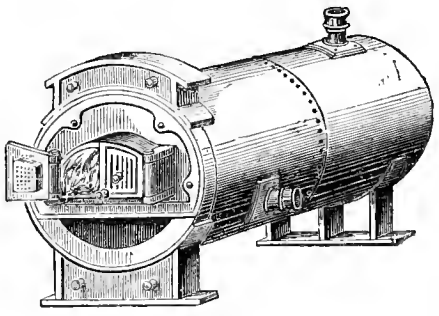

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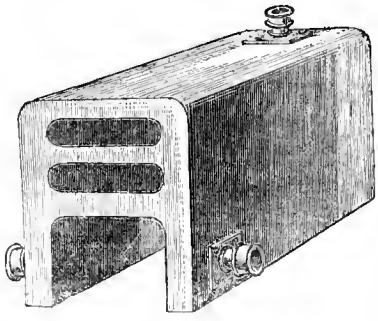

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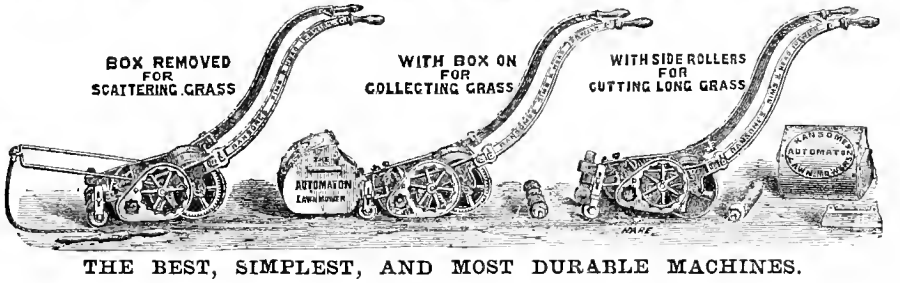

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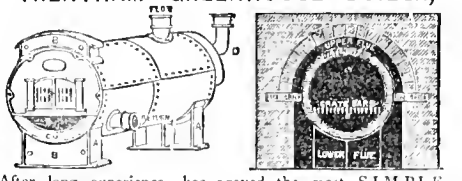

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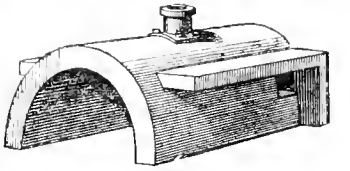

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GRATEFUL—COMFORTING.
"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided our breakfast tables with a delicately-flavoured beverage which may save us many heavy doctors' bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal shaft by keeping ourselves well fortified with pure blood and a properly nourished frame."—*Civil Service Gazette.*

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The best remedy for ACIDITY of the STOMACH, HEARTBURN, HEADACHE, GOUT, and INDIGESTION; and the safest aperient for delicate Constitutions, Ladies, Children, and Infants.
DINNEFORD AND CO.,
172, New Bond Street, London, and all Chemists.

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DR. LOCOCK'S PULMONIC WAFERS.
—"The Convent, Temple Street, Wolverhampton.—Dear Papa,—The Dr. Locock's Wafers you sent me completely cured my chest. I do not think I could have lived had it not been for them.—TERESA NORMAN.—To Mr. Norman, 29, Smith Street, Warwick."—They instantly relieve Asthma, Consumption, Coughs, Colds, Gout, Rheumatism, and all nervous pains. They taste pleasantly.
Sold by all Druggists, 1½d. and 2s. 9d. per box.

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Or NOISELESS LAWN MOWING, ROLLING, and COLLECTING MACHINES for 1876,

THE WINNERS OF EVERY PRIZE IN ALL CASES OF COMPETITION.

Patronised by Her Most Gracious Majesty the Queen on numerous occasions, H.R.H. the Prince of Wales, the King of the Belgians, the late Emperor of the French, the Emperor of Russia, and most of the Nobility, Clergy, and Gentry in the United Kingdom.

Upwards of 75,000 of the above Machines have been Sold since they were first introduced in the year 1856,

And Hundreds of unsolicited Testimonials have been received testifying to their superiority over all other Machines, and are being received almost daily.

They have been submitted to numerous practical tests in Public Competition, and in all cases have carried off every Prize that has been given.

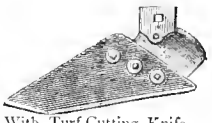
The following are their advantages over all others:—

1st. Simplicity of Construction—every part being free of access. 2d. They are worked with far greater ease than any other. 3d. They are the least liable to get out of order. 4th. They make little or no noise in working. 5th. They will cut either long or short Grass, wet or dry.

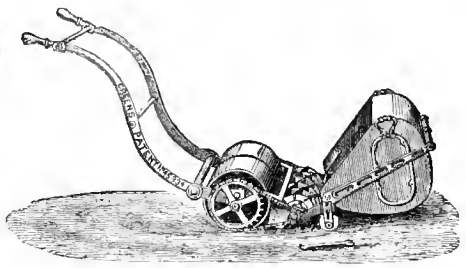
SINGLE AND DOUBLE-HANDED "SILENS MESSOR" LAWN MOWER,

And Turf-Cutting Knife with New Drum Fixing ready for attaching to Old Mowers.

	£	s.	d.
To cut 8 inches ... ... Can be worked by a Lady.	2	10	0
To cut 10 inches ... ... Ditto.	3	10	0
To cut 12 inches ... ... Can be worked by one Person.	4	15	0
To cut 14 inches ... ... Ditto.	5	16	0
To cut 16 inches ... ... Can be worked by one Person on an even Lawn.	6	17	0



With Turf-Cutting Knife. ... £5 5 0



	£	s.	d.
To cut 18 inches ... ... Can be worked by a Man and Boy.	8	0	0
To cut 20 inches ... ... Ditto.	8	10	0
* ,, 22 ,, ... Ditto.	9	0	0
* ,, 24 ,, ... Ditto.	9	10	0

If made stronger, suitable for Donkey, 30s. extra.

Prices of Horse, Pony, and Donkey Machines, including Patent Self or Slide Delivery Box; Cross-stay complete; suitable for attaching to Ordinary Chaise Traces or Gig Harness:—

DONKEY and PONY MACHINES.

	£	s.	d.
To cut 26 inches	15	0	0
,, 28 ,,	17	0	0
,, 30 ,,	18	10	0
Leather Boots for Donkey	1	0	0
,, ,, Pony	1	4	0

HORSE MACHINES.

	£	s.	d.
To cut 30 inches	22	0	0
,, 36 ,,	26	0	0
,, 42 ,,	30	0	0
,, 48 ,,	34	0	0
Leather Boots for Horse	1	9	0

The 26 and 28 inches can easily be worked by a Donkey, the 30 inches by a Pony, and the larger sizes by a Horse; and as the Machines make little noise in working, the most spirited animal can be employed without fear of its running away, or in any way damaging the Machines.

Carriage paid to all the principal Railway Stations and Shipping Ports in England, Ireland, and Scotland.

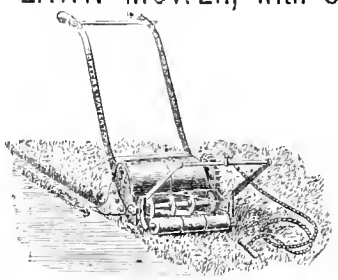
GREEN'S PATENT "MONARCH" LAWN MOWER, with Chain and Internal Gear combined.

This Mower has only few cutters in the cylinder, which runs at a very quick speed, so that it is well adapted for cutting long, coarse, rough, and wet Grass. It is strongly made, and does its work admirably. It will cut nearer to an object than any other Lawn Mower extant.

The sizes and prices of the "Monarch" Mower are in every respect the same as for the "Silens Messor," with Grass Box, &c., complete.

The sides of the 12-in., 14-in., and 16-in. "Monarch" Mowers are all prepared for the Turf-cutting Knife, so that it can be fixed to them at any time. Price 10s.

Green's Patent Lawn Mowers have proved to be the best, and have carried off every prize that has been given in all cases of competition.



"MONARCH" MR. CHAIN OFF SET FOR CUTTING TURF.

Green's Lawn Mowers are the only Machines in constant use at the Royal Horticultural Society's Gardens, South Kensington, London.

N.B.—Those who have Lawn Mowers which require repairing should send them to either our Leeds or London establishment, where they will have prompt attention, as an Efficient Staff of Workmen is kept at both places.

A Stock of 500 Mowers, including all sizes, is kept at our London establishment, from which Purchasers can make their selection and have prompt delivery.

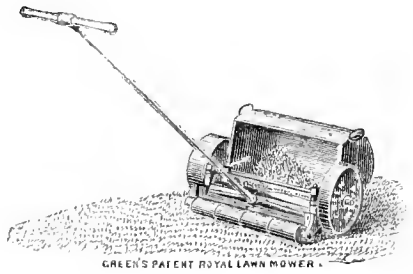
Delivered, Carriage Free, at all the principal Railway Stations and Shipping Ports in England, Ireland, and Scotland.

SPECIAL NOTICE.

GREEN'S PATENT LAWN MOWERS possess (over those of all other makers) the advantage of self-sharpening; the cutters, being steel on each side, when they become dull or blunt by running one way round, the cylinder can be reversed again and again; and by bringing the bottom edges of the cutters against the bottom blade, the Machines will cut equal to new ones. Arrangements have been made so that the cylinder can be reversed by any inexperienced person in two or three minutes.

When Green's Lawn Mowers are used there is no ridge or wave-like appearance left on the sward, but they leave the lawn with a smooth, even, and carpet-like surface, which is pleasing and delightful to the eye of the observer.

GREEN'S PATENT "ROYAL" LAWN MOWER.



GREEN'S PATENT ROYAL LAWN MOWER.

The special features of this Mower are its novel construction and its extreme simplicity. It is easily adjusted, and will cut grass close up to trees, shrubs, seats, &c., and is eminently adapted for cutting slopes, banks, flats, &c. It is easily worked, and is a good, useful and cheap machine.

Carriage paid to all the principal Railway Stations and Shipping Ports in England, Ireland, and Scotland.

With Single Gearing.

	£	s.	d.
To cut 6 inches..	1	5	0
,, 8 ,, ...	1	15	0
,, 10 ,, ...	2	10	0
,, 12 ,, ...	3	5	0
,, 14 ,, ...	4	0	0
,, 16 ,, ...	5	0	0

With Gearing on Each Side.

	£	s.	d.
To cut 18 inches..	6	10	0
,, 20 ,, ...	7	0	0
,, 22 ,, ...	7	10	0
,, 24 ,, ...	8	0	0

For Donkey or Pony.

	£	s.	d.
To cut 30 inches..	10	0	0

GREEN'S PATENT Grass Edge Clipper.

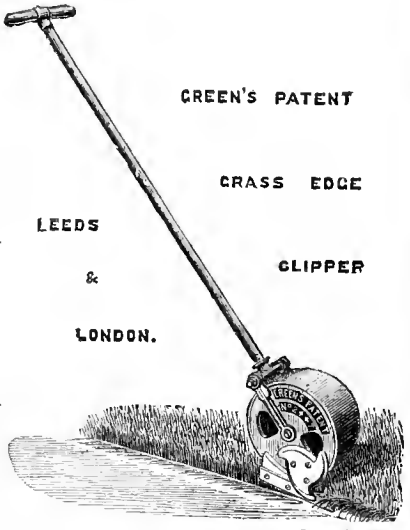
This Machine is specially designed to meet a want which has long been felt in cutting the edges of walks, borders, flower-beds, &c. With it a person is enabled to cut the edges at an easy walking pace, and a great saving of labour is thereby effected.

Price 21s. each

At the works or at our London depot:

23s. each, including Packing Case and Carriage paid to all the principal Railway Stations and Shipping Ports in England, Ireland, and Scotland.

The Grass Edge Clipper and Turf Cutter can be had in a combined Machine, price 50s. each at the Works, or at our London Depot; 53s. each, including Packing Case and carriage paid to all the principal Railway Stations and Shipping Ports in England, Scotland, and Ireland.



All the above Machines are Warranted to give entire Satisfaction, otherwise they may be returned at once, free of cost to the Purchaser.

THEY CAN BE HAD FROM ALL RESPECTABLE IRONMONGERS AND SEEDSMEN IN THE UNITED KINGDOM; OR FROM

THOMAS GREEN & SON, Smithfield Ironworks, Leeds; and 54 and 55, Blackfriars Road, London, S.E.

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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

No. 123.—Vol. V. { New Series. } SATURDAY, MAY 6, 1876. { Registered at the General Post Office as a Newspaper. } Price 5d. Post Free, 5½d.

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Subscribers who wish to have "The Gardeners' Chronicle" forwarded DIRECT FROM THE OFFICE are respectfully informed that payment MUST BE MADE IN ADVANCE.

ROYAL AQUARIUM.—The Second Grand FLOWER and FRUIT SHOWS will take place here on TUESDAY, May 16, and WEDNESDAY, May 17. All communications to be addressed to Mr. WILLS, Superintendent of Floral Department, Royal Aquarium.

SPALDING HORTICULTURAL and HORSE SHOW, June 21 and 22.—PRIZES amounting to £500. Horticultural Entries close June 16, and Cottagers' June 17. Schedules on application to GEORGE KINGSTON, Secretary.

THE OUNDLE FLOWER and POULTRY SHOW will be held on WEDNESDAY, July 5. SPECIAL PRIZES for STOVE and GREENHOUSE PLANTS, FERNS, and ROSES. Schedules, &c., of Oundle. ALFRED KING, Secretary.

SANDOWN PARK CLUB. GRAND FLOWER and FRUIT SHOW. A GRAND FLOWER and FRUIT SHOW, under distinguished Patronage, will be held in Sandown Park, Esher, Surrey, on FRIDAY and SATURDAY, July 7 and 8, when upwards of £350 will be given in Prizes. Schedules will shortly be ready, and may be had on application to JOHN WILLS, Royal Exotic Nursery, Onslow Crescent, South Kensington, S.W. J. WHITTAKER BUSHE, General Manager.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION, for the relief of decayed Farmers, their Widows and Orphans.
Patron—HER MAJESTY THE QUEEN.
President—His Grace the Duke of RICHMOND AND GORDON.
Allowances to Pensioners:—
Married .. .. £40 per annum.
Male .. .. 26 ,,
Widows and unmarried Orphan Daughters 20 ,,
Every information to be had of the SECRETARY, by whom Subscriptions and Donations will be thankfully received.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.—The SIXTEENTH ANNIVERSARY FESTIVAL, in aid of the Funds of the Institution, will take place at Willis's Rooms, on WEDNESDAY, May 24, at 6 o'Clock, The RIGHT HON. LORD CHESHAM in the Chair. Dinner Tickets 21s., application for which should be made to the SECRETARY, not later than May 22.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.—The ANNUAL GENERAL MEETING will be held at Willis's Room, St. James's, on WEDNESDAY, June 21, at 11 o'Clock precisely; and the ELECTION of PENSIONERS will take place on the same day at 11 30 o'Clock.
All Subscriptions shall be deemed payable on January 1 in each year; and no Contributor shall vote in respect of an Annual Subscription while the same is in arrear.
Offices of the Institution—
No. 26, Charles Street, St. James's, London, S.W.

Transit Agency for Plants, Seeds, &c.
C. J. BLACKITH AND CO., late BETHAM & BLACKITH, Cox's and Hammond's Quays, Lower Thames Street London, S.E.—Forwarders to all parts of the World.

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ALTERNANTHERAS — 30,000 amabilis, paronychioides, magnifica, paronychioides major, 6s. per 100; amœna spectabilis, 8s. per 100. Package included for cash. C. ALLEN, Nurseryman and Seedsman, Stone Hills, Heigham, Norwich.

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VERBENAS, VERBENAS, VERBENAS.—White, Purple, Scarlet, and Pink; also twelve extra choice named varieties, strong, healthy-rooted cuttings, perfectly free from disease, 6s. per 100, 50s. per 1000, for cash. H. BLANDFORD, The Dorset Nurseries, Blandford.

Verbenas, Verbenas.
JOHN SOLOMON offers White, Scarlet, Purple, Pink, Crimson, Rose, and other mixed sorts, good strong spring-struck cuttings, well rooted, at 6s. per 100, 50s. per 1000, package included. Cash to accompany all orders. Islington Nursery, Park Street, Islington, N.

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HOLLYHOCKS.—Wanted, strong, healthy Plants of the best named kinds, free from disease. State names, quantities, and lowest price, to FRANCIS & ARTHUR DICKSON & SONS, The Upton Nurseries, Chester.

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SUTTON AND SONS, The Queen's Seedsmen, Reading.

To the Trade. New Cineraria Seed Crop, 1876.
F. AND A. SMITH can supply the above (saved from their unrivalled strain) by weight, or in 1s., 2s. 6d., and 5s. packets. Terms on application The Nurseries, West Dulwich, S.E. N.B.—Their New General CATALOGUE is Now Ready.

Bedding Plants.
F. W. COOPER can supply the Trade and others with the above in large quantities. The stock is well grown and healthy, the plants all in separate pots. Priced List on application. F. W. COOPER, Florist, Huntingdon.

Bedding Plants.
J. SCOTT, The Nurseries, Merriott, Somerset, has now ready a choice and extensive assortment of the above. CATALOGUES on application.

HOLLYHOCKS, Superb named.—A few hundreds can be supplied, in fine named sorts, and fine strong plants. Apply to JOHN THOMPSON, Nurseryman, Seedsman, and Florist, 21, Pilgrim Street, Newcastle-on-Tyne.

CENTAUREA CANDIDISSIMA, in single pots, nice plants, 20s. per 100, package included. Not less than 25 at the above price. Half to quarter specimens. KALOSANTHES COCCINEA, well set for flower, 3s. 6d., 5s., to 7s. 6d. each, JOHN HOUSE, Eastgate Nurseries, Peterborough.

STATICE PROFUSA, in clean and healthy well-rooted Plants.—Established in 60's, 1s. 6d. each, 12s. per dozen, 75s. per 100. A large and choice Stock of all the newest and best Florist's Flowers, Bedding Plants, &c., of which Catalogues on application. JOHN FORBES, Dovemount Nursery, Hawick, N.B.

TREE FERNS.—An English Gardener is now collecting and sending to England the best specimens of Dicksonia antarctica from the coolest districts of Tasmania, from 4 feet to any height required. Freight and all expenses paid to London. For price and all particulars apply to Mr. WALKER, 9, Mount Pleasant, Tunbridge Wells.

To Nurserymen and Gardeners.
BAMBOO and SAVANNA CANES.—The largest and best assorted lot of Bamboo and Savanna Canes in England. Apply for price and samples at HARKIN'S Timber Yard, Dutton Street, Liverpool.

LARCH.—10,000, 1 to 1½ foot, at 15s. per 1000; 10,000, 1½ to 2 feet, at 25s. per 1000, 8000, 2½ to 3½ feet, at 35s. per 1000. JAMES SMITH, Darley Dale Nurseries, Matlock.

Hardy Perennials Illustrated.
THOS. S. WARE'S CATALOGUE of the above for 1876, including New, Rare, and Choice Alpines, Herbaceous Plants, Aquatics, Bog Plants, and a few Bulbs, is now ready, free on application. Hale Farm Nurseries, Tottenham, London.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Figs, Apricots, Cherries, Mulberries, and Oranges. RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

Mangel and Swede.
JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself. Bardney Manor, Lincoln.

To the Seed Trade.
H. AND F. SHARPE'S special SPRING CATALOGUE of home-grown MANGEL WURZEL, TURNIP, and other AGRICULTURAL and GARDEN SEEDS, is now ready, and will be forwarded on application. Seed Growing Establishment, Wisbech.

To the Trade.
ASPARAGUS, 1-yr., 2-yr., and 3-yr. TROPÆOLUM CANARIENSE. JAMES BIRD, American Nurseries, Downham.

SEAKALE for Planting, very fine, 30s. per 1000. For cash with orders only. RICHARD LOCKE, Nurseries, Redhill, Surrey.

Hothouses, Hot-water Apparatus, &c.
HALLIDAY AND CO., HOTHOUSE BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates and Plans free. Best Construction! Best Materials! Best Workmanship! Catalogues free. Offices: 22, Barton Arcade, MANCHESTER.

SALES BY AUCTION.

Crouch End, Hornsey, N.

Clearance Sale of STOVE, GREENHOUSE and BEDDING PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Oakfield House, Crouch Hill, Hornsey, close to the Crouch End Station, G. N. R., on TUESDAY, May 9, at 1 o'Clock precisely, the whole of the valuable Collection of STOVE, GREENHOUSE, and BEDDING PLANTS, including some very fine Camellias, Geraniums, Ferns, Carnations, Deutzias, Callas, Liliums, Caladiums, Dracænas, Orchids, Eucharis amazonica, Pelargoniums, Fuchsias, a few Cucumber Frames and Lights, and numerous other effects.

On view day prior and morning of Sale. Catalogues had on the Premises and of the Auctioneers, 93, Gracechurch Street, E.C., and Leytonstone, E.

SALE this DAY at HALF-PAST TWELVE PRECISELY.

Bedding Plants.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on SATURDAY, May 6, at half-past 12 o'Clock precisely, choice BEDDING PLANTS, consisting of Geraniums, Calceolarias, Verbenas, &c.; Dwarf Roses, from Holland, Gladioli and Lilies, Herbaceous Plants, Rustic Garden Work, Mowing Machines, &c.

On view the morning of Sale, and Catalogues had.

Odontoglossum Vexillarium, Cattleya Gigas, Cattleya MENDELLI, PHALÆNOPSIS INTERMEDIA, and Others.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, May 9, at half-past 12 o'Clock precisely, 100 healthy growing Plants of ODONTOGLOSSUM VEXILLARIUM, CATTLEYA GIGAS, PHALÆNOPSIS SCHILLERIANA, P. AMABILIS, P. LUDDEMANNIANA, P. ROSEA, one P. LEUCORRHODA, one P. INTERMEDIA, DENDROBIUM WARDIANUM, D. FALCONERI, D. FORMOSUM GIGANTEUM, D. DIXANTHUM, VANDA CATHCARTI, V. BENSONI, CYMBIDIUMS, SACCOLABIUMS, ODONTOGLOSSUMS, &c. Also imported plants, just arrived by R M steamer *Lorne*, of CATTLEYA MENDELLI, ODONTOGLOSSUM TRIUMPHANS, and MASDEVALLIA HARRYANA.

On view the morning of Sale, and Catalogues had.

Important to Orchid Growers.

MR. J. C. STEVENS has just received a consignment direct from Bogota of fine varieties of ODONTOGLOSSUMS, and will include them in his SALES on TUESDAY and WEDNESDAY, May 9 and 10. Mr. S calls particular attention to this importation, as they are a fine lot and to be sold without the slightest reserve.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Odontoglossum vexillarium, Cattleya gigas, Cattleya MENDELII, PHALÆNOPSIS INTERMEDIA, and OTHERS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, May 9, at half-past 12 o'Clock precisely, 100 healthy growing plants of Odontoglossum vexillarium, Cattleya gigas, Phalænopsis Schilleriana, P. amabilis, P. Luddemanniana, P. rosea, one P leucorrhoda, one P. intermedia, Dendrobium Wardianum, D. Falconeri, D. formosum giganteum, D. dixanthum, Vanda Cathcarti, V. Bensoni, Cymbidiums, Saccolabiums, Odontoglossums, &c.; also Imported Plants, just arrived by R M. steamer *Lorne*, of Cattleya Mendelii, Odontoglossum triumphans, and Masdevallia Harryana.

On view the morning of Sale, and Catalogues had.

Odontoglossums.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY and WEDNESDAY, May 9 and 10, a large Importation of ODONTOGLOSSUMS received direct from Bogota in fine condition.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

A Collection of Established Orchids, the Property of a Gentleman.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, May 10, at half-past 12 o'Clock precisely, a large quantity of ORCHIDS, including choice Cattleya Dowiana bogotensis, amethystoglossa, labiata, Mendelii, varieties of mossiæ, Trianæ, &c.; Cœlogyne cristata, feveral fine pans, containing 150 bulbs each; Cypripedium caudatum, and other varieties; Calanthes, some fine plants; Dendrobium chrysotis, primulinum, heterocarpum, and some fine plants of nobile, and other varieties; splendid specimen Zygopetalum Mackayii, and other varieties; Phajus Wallichii and grandiflora; Odontoglossum sceptrum, tripudians, triumphans, Pescatorei, Alexandræ, citrosmum, grande, citrosmum roseum, odoratum, and a fine variety (Dawson's) of Phalænopsis; Oncidium crispum, ornithorrynchum, macranthum, tigrinum, and stelligerum; Miltonia candida, spectabilis, cuneata, and Clowesii; with assortments of Angulras, Saccolabiums, Aerides, Lycastes, Stanhopeas, Calanthes, Phalænopsis, &c.

On view the morning of Sale, and Catalogues had.

Pine-apple Nursery, St. John's Wood, N W.

IMPORTANT UNRESERVED SALE of STOVE and GREENHOUSE PLANTS.

MR. J. C. STEVENS begs to announce that the Lease and Goodwill of the Pine-apple Nursery having been sold at the recent Auction, he is now instructed to prepare for SALE by AUCTION, on the Premises, Pine-apple Nursery, Edgware Road, St. John's Wood, N W., on THURSDAY, May 11, and five following days (Sunday excepted), at 12 o'Clock precisely each day, the FIRST PORTION of the valuable stock of STOVE and GREENHOUSE PLANTS, consisting of Specimen Azaleas, Camellias, Ericas, Epacris, Orange Trees, Ferns, Anthuriums, and other choice varieties of specimen Plants; also an unlimited quantity of BEDDING PLANTS, consisting of the best varieties of Geraniums, Calceolarias, Verbenas, Fuchsias, &c.

On view three days prior to and mornings of Sale, and Catalogues had on the Premises; and of Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

Phalænopsis.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, May 12, an importation from the East Indies of Phalænopsis Schilleriana and P. amabilis in good condition. Dendrobiums amœnum, densiflorum, chrysotis, devonianum, barbatulum, and marmoratum, &c. Also a small collection of choice Established Orchids.

On view the morning of Sale, and Catalogues had.

Odontoglossum vexillarium.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, May 12, at half-past 12 o'Clock precisely, by direction of Mr. W. Bull, a magnificent importation of ORCHIDS from the United States of Columbia, just arrived ex *Tasmania*, in first-rate condition, comprising some hundreds of the beautiful Odontoglossum vexillarium, several of them fine masses, and all with growths or breaking freely; some very fine strong pieces of Oncidium Weltoni, and a quantity of Oncidium Kramerianum and Uropedium Lindeni, &c.

On view the morning of Sale, and Catalogues had.

Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, May 15, at half-past 12 o'Clock precisely, a few very choice and rare ORCHIDS, just received from Brazil per *Minho*, all in the finest possible condition, consisting of some very fine plants of the rare Lælia elegans, amongst which will be found the Warneri variety; Oncidium Forbesii (true), very rare; Oncidium marginatum (true), see dried flowers—this is a beautiful species and very rare; Oncidium Marshallianum (true), the finest masses ever imported; Oncidium concolor (true), splendid masses; Oncidium crispum, very fine masses and quite distinct in bulb; Oncidium sarcodes (true); splendid plants of Burlingtonia fragrans (true), this lovely plant is very rare; Ionopsis paniculata, Lælia Perrini grandiflora; and a few fine plants of the very distinct and rare Cattleya bicolor, &c.; also an Importation of fine masses of Lælia autumnalis, Odontoglossum Ehrenberghi, and other Orchids just arrived from Mexico in fine condition.

On view the morning of Sale, and Catalogues had.

Sunbury, Middlesex.

To MARKET GARDENERS, HORTICULTURISTS, BUILDERS, and OTHERS.

MR. W. GOUGH is directed to LET by AUCTION, at the Running Horse Inn, Sunbury, on FRIDAY, May 12, at 3 for 4 o'Clock in the afternoon, for a term of Fifty Years from Christmas last, 15 Acres of First-class MARKET GARDEN GROUND, well stocked with Fruit Trees and Bushes of the choicest sorts, forming a most valuable Fruit Plantation, in the highest state of cultivation; beautifully situate in the Parish of Ashford, about half a mile from the Sunbury Station on the Thames Valley Line of the London and South-Western Railway, fronting the Staines high road and the main road from Feltham to Walton, on which it extends upwards of 1500 feet.

May be viewed, and particulars with conditions of letting had at the place of letting, and of Mr. W. GOUGH, Auctioneer, Surveyor, and Land Agent, Sunbury.

Highly Important Sale of Specimen Plants, Orchids, and AMARYLLIS at MEADOWBANK.

MR. DAVID MITCHELL, AUCTIONEER and VALUER, has been instructed by Mr. James Anderson to SELL on THURSDAY and FRIDAY, May 26 and 27 next, a portion of the highly important Collection of ORCHIDS, AMARYLLIS, NERINES, extraordinary fine specimen AZALEAS and HEATHS, as well as ORNAMENTAL FOLIAGE PLANTS in great variety, all of which are in the finest possible health, and many of them blooming or coming into bloom. The Amaryllis are beyond question the finest breed in the kingdom, and, as many of them will be in flower, it will be a rare opportunity for purchasers. Descriptive Catalogues will be immediately published, and may be had either from

Mr. DAVID MITCHELL, Auctioneer, Hamilton; or from Mr. ANDERSON, at the Nurseries, Meadowbank. Nurseries within three minutes' walk of the Uddingston Station, Caledonian line.

Hamilton, May 5, 1876.

Ashford, Middlesex.

To MARKET GARDENERS, FRUIT GROWERS, &c.

MR. J. S. GOMME will SELL by AUCTION, on the Premises of Mr. G. Wilkinson, on TUESDAY, May 9, at 3 for 4 o'Clock in the afternoon (unless previously disposed of by Private Contract), in one Lot, the valuable LEASE, with possession, of about 14 ACRES of capital MARKET GARDEN LAND, planted with Fruit Trees and Bushes of the best sorts, held for a Term of which twenty-five years were unexpired at Michaelmas Day last, at a moderate rental, together with the STOCK-IN-TRADE, comprising Horse, Cart, Manure, and the usual Effects. Should the Lease not be disposed of, the Stock, &c., will be Sold by Auction, in Lots, immediately after.

May be viewed, and particulars and Conditions of Sale obtained of the Market Garden Auctioneer and Valuer, 12, York Street, Covent Garden, W.C.

Mogden Lane, Isleworth.

Re R. TURNBULL, Deceased.—To MARKET GARDENERS, FLORISTS, &c.

MR. J. S. GOMME is instructed by the Executors of the late Mr. R. Turnbull to SELL by AUCTION, at the "George Inn," Isleworth, on TUESDAY, May 16, at 5 for 6 o'Clock in the evening (unless previously disposed of by Private Contract, of which due notice will be given), the valuable unexpired LEASE of the excellent detached EIGHT-ROOMED DWELLING-HOUSE, SHEDS, &c., with about 4 acres of MARKET GARDEN LAND, planted with the best sorts of Fruit Trees, Bushes, and Strawberries, in the highest possible state of Cultivation, together with the Erections of GRAPERIES, Fits and Glass thereon, one House 100 feet long, having a splendid crop of Muscat Grapes, ready for market, and two others of choice sorts in succession. Held at the nominal rental of £27 10s. per annum.

May be viewed by cards only, to be obtained of the Auctioneer, and particulars and Conditions of Sale obtained at the place of Sale, of Messrs. MILWARD AND WHITEHEAD, Solicitors, 40, Chancery Lane; and at the Offices of the Market Garden Auctioneer and Valuer, 12, York Street, Covent Garden, W.C.

To Market Gardeners, Fruit Growers, and Others.

MR. J. S. GOMME is instructed to DISPOSE OF, by PRIVATE TREATY (the Proprietor retiring from Business), the valuable LEASES of about 70 acres of well-known and first-class MARKET GARDEN LAND, situate about 4 miles from Covent Garden Market; is in the highest possible state of Cultivation, well and judiciously Cropped, and second to none in England. There are 19 acres of Asparagus, 13 acres of Fruit, and 40 acres of Open Land, capital and convenient DWELLING-HOUSE, large BARNS and PACKING-SHEDS, FRUIT-ROOM, STABLING for eight horses, CART SHEDS, &c. The Crops, Dressings, Half-Dressings, &c., are to be taken at a valuation. The Land may be viewed by cards, which may be obtained, with all further particulars, on personal application only to

Mr. J. S. GOMME, Market Garden Auctioneer and Valuer, 12, York Street, Covent Garden, W.C.

To Market Gardeners, Fruit Growers, &c.

MR. J. S. GOMME is instructed to DISPOSE of, by PRIVATE TREATV, the valuable LEASE of 16 acres of FRUIT LAND, well stocked with the choicest sorts, and in first-rate order. There is a capital roomy DWELLING-HOUSE, PADDOCK, STABLING for four horses, CART SHEDS and PACKING SHEDS, with lofts over. Held for an unexpired term of twelve years at a very moderate rental. Part of the purchase money may remain if required. For further particulars and cards to view apply personally to

Mr. J. S. GOMME, Market Garden Auctioneer and Valuer, 12, York Street, Covent Garden, W.C.

WANTED, by an Amateur Horticulturist, about an ACRE of GARDEN GROUND, and a SIX or EIGHT-ROOMED COTTAGE; country village preferred, South or Midland Counties.—L. T., Post Office, Bath.

To Nurserymen, &c.—Centre of Lake District.

VALUABLE NURSERY GARDENS and SEED BUSINESS for DISPOSAL.

TO BE SOLD, to a Private Purchaser or Otherwise, at an early date, an old-established NURSERY and SEED BUSINESS, in good condition, situate in the most favourable and central part of the English Lake district, doing a capital trade, with a most respectable and extensive connection, chiefly ready money. Nursery about 8 Acres. Stock, &c., at valuation. Suitable for an energetic person with a moderate capital. The Nursery has been laid out at considerable cost, and is largely visited by visitors to the Lake District. An extensive Wholesale and Retail Fruit and Seed Business is carried on in connection with the Nurseries. For particulars apply to

Messrs. MOSER AND SONS, Solicitors, Kendal; Mr. G. C. COOKMAN, 18, Southampton Street, Strand, London, W.C.; or to Mr. WM. BARTON, Ambleside.

Weybridge, Surrey.

TO BE DISPOSED OF, a well-established FLORIST'S BUSINESS, and where a good chance offers for the Seed Trade. Splendid situation near the station for a man of business. Parted with on account of the Proprietor retiring from the line. Stock could be taken at valuation, or be disposed of by auction beforehand. Apply for particulars to

The PROPRIETOR, or Mr. LENNEY, Surveyor, Oatlands Park, Weybridge.

TO BE SOLD, by PRIVATE CONTRACT, the GOLDEN CROSS NURSERIES, with extensive Glasshouses, Dwelling-house, &c., situate near Stroud, Gloucestershire. Apply to

RESTALL AND FORD, Auctioneers, Stroud.

Foliage and Flowering Plants for Decoration.

F. AND A. SMITH can supply the above in fine Plants, fit for immediate use; also Zonal Geraniums and other Plants suitable for Windows and Conservatories. Priced LIST on application.

The Nurseries, West Dulwich, S.E.

FOR SALE.—Large SPECIMEN PLANTS, established in large tubs and pots, Gardenias, Stephanotis floribunda, Eucharis amazonica, Azaleas, Camellias, Marechal Niel and other Roses, &c.

The NURSERY, with nineteen years' unexpired Lease, to be DISPOSED OF, with or without the stock of Plants. For further information apply to

Mr. FARRAND'S Paper Mills, Ilford, Essex.

NEW ROSE and DAHLIA CATALOGUE Now Ready. MARECHAL NIEL BLOOMS, 4s. per dozen, 25s. per 100.

JOHN HARRISON, The North of England Rose Nurseries, Darlington.

JOHN CARTER, NURSERYMAN, Keighley, begs to offer fine Plants from cutting-pots, and well hardened, of VERBENAS, Crimson and Scarlet, IRESINE LINDENI, and CUPHEA PLATYCENTRA, at 5s. per 100, cash price.

PINE PLANTS.—Eight large Fruiting and Thirty Successions, consisting of Queens and Jamaicas, all clean and in robust health. Large plants, would Fruit this season. Price on application to

Mr. DEAN, Titsey Gardens, Limpsfield, Surrey.

NEW PLANTS of 1875.—CUTTINGS, safe and free per post.—Twelve new Dahlias, 4s.; 12 new Fuchsias, 2s.; twelve new double Petunias, 3s.; 12 new Verbenas, 2s.; 12 new Show Pansies, 3s.; 12 new Fancy do., 3s.; 12 new large-flowered Pelargoniums, 4s.; 12 new Fancy do., 4s.; 12 best new Zonals, 3s. All true to name.

J. JACKSON, Nursery, Kidderminster.

Choice Tricolor and Bronze Geraniums.

THOMAS PESTRIDGE can now supply, in good plants, at per dozen for cash—Mr. Headly, 6s.; Peter Grieve, 4s.; Sophia Cusack, 3s.; Salamander, 6s.; Mysterious Night, 3s.; Lass o' Gowrie, 6s.; Mrs. Colonel Wilkinson, 4s.; Miss Pond, 10s; Marshal MacMahon, 4s; Black Douglas, 3s.; Earl of Rosslyn, 4s; Prince Arthur, 6s. Package free. Priced List of other varieties.

THOMAS PESTRIDGE, Park Road Nursery, Brentford.

Bedding Plants.

F. AND A. SMITH offer the above in strong, hardened Plants, for immediate effect, in all the best varieties. Priced LIST upon application.

The Nurseries, West Dulwich, S.E.

N.B.—Their General Plant CATALGUE is Now Ready.

Special Offer.—Vesnvius, Crystal Palace Gem.

WILLIAM BADMAN offers good plants of VESUVIUS from single pots, 10*s.* per 100, 85*s.* per 1000. CRYSTAL PALACE GEM, 15*s.* per 100. MADAME VAUCHER, finest White Pelargonium, 10*s.* per 100. Package inc'uded. Terms cash.
Cemetery Nursery, Gravesend, S.E.

Roses in Pots by the Dozen, Hundred, or Thousand.

WM. WOOD AND SON solicit attention to their enormous and splendidly grown stock of the above. Inspection invited.
Woodlands Nursery, Maresfield, Uckfield, Sussex.

Australian Plants and Seeds.

EUCALYPTUS GLOBULUS, PALMS, CYCADS, FERNS, and all kinds of PLANTS and SEEDS indigenous to Australia, Fiji, &c., supplied on the most reasonable terms. Priced CATALOGUES and Special Quotations on application.
SHEPHERD AND CO., Nurserymen and Seedsmen, Darling Nursery, Sydney, New South Wales. (Established 1827.)
Agents: Messrs. C. J. BLACKITH AND CO., Cox's Quay, Lower Thames Street, London, E.C.

BEDDING VIOLAS for the MILLION.—Perfectly hardy, easily propagated, flower from April to October. 100 in 12 distinct named sorts for 20*s.*, 50 for 12*s.* 6*d.*, 25 for 7*s.* Also Prize Show and Fancy PANSIES and PHLOXES, own selection, 6*s.* 6*d.* per dozen. Sent free by post to all parts of the United Kingdom on receipt of post-office order
DICKSONS AND CO., Nurserymen, Seed-men and Florists, 1, Waterloo Place, Edinburgh. Established 1770. New Nurseries at Pilrig Park.

CUTTINGS of GERANIUMS, &c.—One Hundred GERANIUMS, in 40 choice varieties, including Tricolor, Gold and Bronze, Variegated, Zonal, Nosegay, and Ivy-leaf, for 10*s.*; 50, 5*s.* 6*d.*; 25, 3*s.*
24 Fancy PELARGONIUMS, 3*s.* 6*d.*; 12, 2*s.*
24 CHRYSANTHEMUMS, 2*s.* 6*d.*; 12, 1*s.* 6*d.*
24 POMPONS, 2*s.* 6*d.*; 12, 1*s.* 6*d.* 24 FUCHSIAS, 2*s.* 6*d.*; 12, 1*s.* 6*d.* All post-free. Catalogues one stamp.
J. COOMBS, The Ferns, Enfield.

Cheap Bedding Geraniums.

ALFRED FRYER offers the following good Bedders at per dozen, for cash:—Golden Tricolors: Prince of Wales, 6*s.* 6*d.*; Jock o' Hazeldean, 4*s.* 6*d.*; Mrs. Pollock, 3*s.* 6*d.*; Sir Robert Napier, 3*s.* 6*d.*; Sophie Dumaresque, 3*s.* 6*d.* Silver Tricolors: Lass o' Gowrie, 6*s.* 6*d.*; Miss Burdett Coutts, 3*s.* 6*d.*; Mrs. John Clutton, 3*s.* 6*d.* Gold and Bronze: Beauty of Calderdale, 3*s.* 6*d.*; Roi de Siam, 3*s.* 6*d.* Ivy-leaf: L'Elegante, 3*s.* 6*d.*; Dolly Varden, 3*s.* 6*d.*; or one of each for 5*s.* All post or package free. For Priced Lists address ALFRED FRYER, The Nurseries, Chatteris, Cambridgeshire.

White Roman Hyacinths.

J. VANDER SWAELMEN, NURSERYMAN, Gendbrugge, Ghent, Belgium, can supply for next July good Bulbs at 24*s.* per 100, or 230*s.* per 1000. Also NARCISSUS, Double de Constantinople, and N. totus albus (paper-white) at 10*s.* per 100, or 90*s.* per 1000. Early orders are respectfully solicited.

Dr. Denny's Zonal Pelargoniums.

JOHN COPELIN begs to announce that he is now prepared to supply Dr. Denny's "Third Set" of 18 splendid varieties, reduced in price to £1 11*s.* 6*d.* per set, and 2*s.* 6*d.* per single variety.
CATALOGUES post-free on application.
Tyssen Street Nursery, Stoke Newington, London, N.

CHEAP PLANTS, post-free.—Twelve new Fuchsias of 1875 for 4*s.*, 12 choice older sorts, 2*s.*; 12 choice Coleus, 2*s.*; Dr. Denny's second set of 7 beautiful Zonal Geraniums, 2*s.* 6*d.*; 12 choice Geraniums for pot culture, 3*s.*; 12 Ageratum Countess of Stair, 2*s.*; 12 Imperial Dwarf, 1*s.*; or the whole of the above post-free for 15*s.*, carefully packed.
JOSEPH LEIGH, Sandy Lane Nursery, Lowton, near Newton-le-Willows, Lancashire.

To the Trade.

TROPÆOLUM SPECIOSUM, 20*s.* per 100; POLEMONIUM CŒRULEUM VARIEGATUM, 15*s.* per 100.
HOWDEN AND CO., Nurserymen, Inverness, N.B.

Cedrus Deodara, 10 to 15 and 20 feet high.

WM. MAULE AND SONS now offer at this most favourable season for Planting—April and May—magnificent trees, at 10*s.* 6*d.* each, well-rooted, with good balls, from large pots. For Screens, Blinds, and immediate effect as an Evergreen Tree they are both Ornamental and Useful.
The Nurseries, Bristol.

The Model Potato.

HARRISON AND SONS have a quantity of the above to offer, at 12*s.* per bushel; it is of robust habit, excellent quality, and fine shape. Highly recommended.
HARRISON AND SONS, Seed Growers, &c., Leicester.

Cranston's Nurseries (Established 1785).

TEA-SCENTED ROSES—20,000 strong, well hardened plants, in 5½-inch pots.
April and May are the best months for Bedding or Planting-out the Tea-scented, China, Noisette, and all Roses on their own roots. Selections, left to us, from 12*s.* to 15*s.* per dozen.
Descriptive Priced LISTS on application to
CRANSTON AND MAYOS, Hereford.

NEW VERBENAS (ECKFORD'S).
The finest ever yet offered. See
JOHN KEYNES' CATALOGUE, 1876.

NEW ROSES, 1876.
Selected varieties. See
JOHN KEYNES' CATALOGUE, 1876.

LETTY COLES (KEYNES')—the ROSE of the season—is now being sent into commerce. All particulars, consult
JOHN KEYNES' CATALOGUE.

NEW DAHLIAS for 1876.
Keynes' grand flowers. See
JOHN KEYNES' CATALOGUE for 1876.
Castle Street Nursery, Salisbury.

NEW FERNS.

JAS. BACKHOUSE & SON

Have pleasure in offering the following New and very interesting Ferns:—

ADIANTUM CILIATUM.

This fine Maidenhair will prove a valuable acquisition in its beautiful and much admired genus. Whilst possessing some resemblance to A. caudatum, the fronds are double the size both in length and width, with the pinnæ boldly cut or fringed; the colour is brighter and of a soft pea-green, and not liable to spot or rust from damp as A. caudatum too often does. The growth is vigorous as well as elegant, and for hanging baskets or other decorative purposes we feel assured it will be in great request.

7s. 6d. each.

MICROLEPIA ANTHRISCIFOLIA. (?)

An elegant South African Fern, supposed by Thomas Moore, Esq., to be M. Anthriscifolia, or an entirely new species. It is a plant of remarkably free growth, the creeping rhizomes throwing off an abundance of quadripinnate fronds 6 to 12 inches in length, and reminding of Cheilanthes elegans in their numerous and finely-cut divisions; whilst their more ample size, velvety texture, and soft green colour, give a delightful effect to the whole plant. Well adapted for a greenhouse or intermediate fernery, and therefore sure to become useful and popular.

7s. 6d. each.

POLYSTICHUM MUNITUM.

As a hardy evergreen alpine Fern this bids fair to be the finest in cultivation. It resembles a gigantic P. Lonchitis, with fronds 9 inches (or more?) wide, in noble plume-like tufts or crests, 4 to 5, or possibly 6 feet across. Pinnæ undivided, dark-green, long and narrow, and serrated at the edges. Even the half-unfurled fronds seem entirely unaffected by frost, as the test of winter 1874-5 at York was very severe. Sierra Nevada of California.

Established plants, 7s. 6d. to 21s. each.

JAS. BACKHOUSE & SON also desire to ask attention to the following, which, with the above, can now be supplied in good plants:—

ADIANTUM PERUVIANUM.

Of this graceful and noble habited Maidenhair we possess a fine stock in healthy well-established plants, which we offer at

3s. 6d. to 5s. each.

CHEILANTHES FRAGRANS.

A pretty dwarf Cystopteris-like Fern, forming dense tufts in vertical fissures of rocks fully exposed to the sun. Fronds bright green, two or three times divided, with deep brown bristly-scaled stalks highly fragrant with the scent of new-mown hay. A native of the mountains of Corsica and Switzerland. Probably hardy in favourable situations.

3s. 6d. each.

GYMNOGRAMMA TRIANGULARIS.

Fronds 6 to 9 inches long, firm and rigid in texture, densely covered with white or lemon tinted farinose powder on the underside. A beautiful Fern for sunny rockwork, where it can root deeply into rich soil in a narrow fissure; or for a cool Greenhouse.

Strong Plants, 7s. 6d. each.

PELLÆA ORNITHOPUS.

An interesting and distinct Fern from California. Fronds glaucous-green, rigid, erect, from 9 to 12 inches high, bipinnate; the secondary pinnæ all trifoliate, except the ultimate ones, which are simple and solitary. The pinnules are so formed and arranged in the trifoliate pinnæ as to resemble the claws of the foot of a small bird, each terminated with a distinct mucro. Stipes and rachis dark purplish. Received direct from Collector, and exhibited by us under the name of P. mucronata, before the Royal Horticultural Society, when it was much admired, and was awarded a First-class Certificate.

Good Plants, 5s. each; Stronger, 7s. 6d. to 10s. 6d. each.

TODEA SUPERBA.

Fine plants, 6 to 8 inches across,

5s. to 7s. 6d. each; Strong Plants, for Specimens, 21s. to 210s. each.

ODONTOGLOSSUM ROEZLII.

This "superb" new Orchid we can offer as under. It is remarkably free to grow and flower, a number of plants affording many distinct varieties; its large and deliciously fragrant white flowers being sometimes pure, but more generally blotched with purple, or orange, or yellow, at the base of the petals.

Well-established Plants, 21s. each; Stronger, 31s. 6d. to 63s. each.

YORK, SPRING, 1876.

MESSRS. FRASER AND BENTON, HORTICULTURAL AND AGRICULTURAL AUCTIONEERS AND VALUERS, Romford and Grays, Essex.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 98, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.
Mr. WEBB, Calcot, Reading.

T. C. PAGET begs to inform his friends and the Trade generally that he has a large Stock of PALMS, FERNS, and DRACÆNAS, well adapted for decorative purposes.
Royal Nurseries, Clapham.

HOLLYHOCKS.—Choice named seedlings, 30*s.* and 40*s.* per 100; will flower this season. List free
L. WOODTHORPE, Glazenwood, Braintree

ROBINSON'S CHAMPION OX CABBAGE plants, strong, 2*s.* 6*d.* per 1000.
THOMAS PERKINS, 42, Drapery, Northampton.

1876.—New Roses 1876.

A SELECTION of the very FINEST NEW VARIETIES for this year, 24*s.* to 30*s.* per dozen. Exceedingly strong, robust plants in pots; can be planted out at any time.
JAMES DICKSON AND SONS, Newton Nurseries, Chester.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

CENTAUREA RAGUSINA, fine plants, established in single pots, 20*s.* per 100, cheaper out of pots. THYMUS CITRIODORUS AUREUS MARGINATUS, established plants from open ground, 3*s.* per 50; 5*s.* per 100; 21*s.* per 500; 40*s.* per 1000.
J. J. MARRIOTT, Highfield Nurseries, Matlock, Derbyshire.

GIANT ASPARAGUS PLANTS, the best that money can procure, all certain to grow, 2*s.* 6*d.* per 100. This delicious vegetable does not require half the expense usually incurred in planting it. See RICHARD SMITH'S SEED LIST for 1876.
Extra strong SEAKALE, 2*s.* per dozen.
RICHARD SMITH, Nurseryman, Worcester.

To the Trade.

TEA-SCENTED ROSES, in Pots.—Magnificent Plants, of best varieties only, at 9*s.* per dozen, or 60*s.* per 100. An immense Stock of all other plants worth growing. Catalogue free.
WILLIAM KNIGHT, Floral Nursery, Hailsham, Sussex.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz, Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3*s.* 6*d.* per 1000. Robinson's Drumhead, at 3*s.* per 1000; and Red Pickling, at 5*s.* per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.
Wonersh Nursery, Guildford, Surrey.

Double Pyrethrums.

THOMAS S. WARE recommends the immediate planting of the above and other Hardy Florists' Flowers, including DELPHINIUMS, PHLOXES, DIANTHUS, PENTSTEMONS, &c. For descriptions and prices see New Spring CATALOGUE, free on application.
Hale Farm Nurseries, Tottenham, London.

Vines.

E. G. HENDERSON AND SON have fine strong fruiting-sized VINES, in several varieties, of the popular kinds, still to offer.
Wellington Nursery, St. John's Wood, London, N.W.

Fruiting and Planting Vines.

THE COWAN PATENTS' COMPANY (late Meredith) have still on hand a good selection of the above. Catalogues and prices on application. They can also offer good Fruiting and Succession PINES.
The Vineyard, Garston, near Liverpool.

Pelargoniums, Pelargoniums.

JAMES HOLDER'S unrivalled Collection—strong healthy Plants, Show, French, and Fancy varieties, at 35*s.* per 100, cash, Hamper and Packing included. Extra strong plants, in 48's and 32's, at 9*s.* and 12*s.* per dozen, Basket and Packing extra.
Crown Nursery, Reading.

Mangel Wurzel.

BOLTON AND CO. beg to offer their fine stock of YELLOW GLOBE MANGEL WURZEL SEED.
Their large Champion Yellow Globe produces an immense weight per acre, and the Pedigree Mangel is the finest one grown, small top, fine clean skin, and single tap-root. Both of these superior Mangels give great satisfaction.
Moderate prices, on application.
BOLTON AND CO., Seed Merchants, Wood Green, London, N.

Splendid Samples.

BEANS, new Scarlet Runner, 20*s.* per bushel; Black Negro Dwarf French, fine, 20*s.* per bushel; Early Long Pod, 7*s.* 6*d.* per bushel; common Windsor, 12*s.* per bushel. CABBAGE PLANTS, Enfield Market, 4*s.* per 1000; Red Pickling, 10*s.* per 1000.
Packages charged lowest price. Ferns. Cash with orders.
FREDERICK GEE, Seed Grower, Biggleswade, Beds.

New Double Zonal Pelargoniums

For 1876.

W. & J. BROWN

Will let out this month the following new and distinct varieties, raised by Mr. LAXTON (the raiser of Jewel, Emily Laxton, Guiding Star, and others), all of which are striking novelties, having the dwarf habit of the single Zonals :—

THE GHOST.—Flower pure ivory-white, finely formed, petals waxy and of great substance—a decided acquisition in double whites, and especially adapted for bouquets, 10*s*. 6*d*.

SOPHIA CLAPTON.—The plant has the remarkably dwarf and shrubby habit and pale green foliage of "Guiding Star." Flower very full, pretty Hepatica shaped, bright purplish scarlet, 10*s*. 6*d*.

WILFRID.—A beautiful pearl-white flower, fuller and more perfect in form than "Aline Sisley," very pretty and remarkably distinct—decidedly the best of its class yet sent out, 15*s*.

First-class Certificate Royal Horticultural Society.

The set for £1 12s. 6d. Trade terms as usual.

W. AND J. BROWN, Florists, Stamford.

FRANCIS & ARTHUR DICKSON & SONS.

106 Eastgate St. & The "Upton" Nurseries CHESTER.

Farm Seeds Extra Select

& of Unsurpassed Quality

Carriage Paid.

Illustrated Catalogue, Free.

THE KNAP HILL CYPRESS,

Cupressus Lawsoniana erecta viridis.

ANTHONY WATERER

Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices :—

3 feet high, 2½ feet in circumference, 30*s*. per doz.
4 feet high, 3 to 4 feet do., 42*s*. to 60*s*. per doz.
5 feet high, 4, 5 and 6 ft. do., 10*s*. 6*d*., 15*s*. to 21*s*. each.
6 and 7 feet high, 6 to 7 and 8 ft. do., 21*s*. to 31*s*. 6*d*. each.

No cuttings have been taken from the plants here referred to, which are simply perfect in growth and splendidly rooted.

KNAP HILL NURSERY, WOKING, SURREY.

HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,
KNAP HILL NURSERY, WOKING, SURREY.

BEDDING PLANTS, &c.

LITTLE & BALLANTYNE,

THE QUEEN'S SEEDSMEN,
CARLISLE,
SOLICIT EARLY ORDERS FOR
DAHLIAS, HOLLYHOCKS, LOBELIAS, VERBENAS, FUCHSIAS, PELARGONIUMS, PANSIES,
AND
An extensive Assortment of Plants suitable for Beds and Borders,
INCLUDING THE
Best Varieties of Dwarf Variegated Plants and Succulents for Edgings, &c.

KNOWEFIELD NURSERIES, CARLISLE.

E. G. HENDERSON & SON

RESPECTFULLY ANNOUNCE THE PUBLICATION OF THEIR

NEW DESCRIPTIVE SPRING CATALOGUE,

WHICH WILL BE FORWARDED ON APPLICATION.

It includes the following NEW PLANTS, offered by them the first time in trade, amongst which is a pure white-flowered AGERATUM :—

CALCEOLARIA SALICIFOLIA.
CHRYSANTHEMUM, CANARY-COLOURED CHERUB.
CARDUUS, sp. (Grande Fleur Rouge).
CUPHEA MILLFIELDIANA.
DRACÆNA, PRINCESS OF WALES.
" PRINCESS TECK.
" CERES.
FUCHSIAS, eight new (including Mr. Todman's).
MIMULUS, eight new.
SONERILA HENDERSONI METALLICA.
NERIUM OLEANDER PICTUM ARGENTEUM,
" " LUTEUM MARGINATUM.
IVY-LEAVED PELARGONIUMS, three new.
THYMUS MARGINATA ELEGANTISSIMA.
TROPÆOLUM BROOKEANUM.
VERBENAS, eight new.
PELARGONIUM STRIATA ELEGANS.
" " MAGNUM BONUM (Zonal sec.).
AGERATUM SNOWFAKE.
" TOM THUMB SNOWFLAKE.
ROMNEYA COULTERI.

The following plants are new to the great majority of English gardens :—

PRENANTHES ELEGANTISSIMA.
WHITE BEDDING DAHLIA, MARGUERITE BRUANT,
OTHONNA CRASSIFOLIA,
AND
SALVIA SPLENDENS ARGENTEA.

THE WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON, N.W.

TEA & NOISETTE ROSES

ON SEEDLING BRIER AND OTHER STOCKS

Best adapted to the respective sorts, so worked that no suckers can be produced.

Splendid Plants, in immense quantities; considering health, size and vigour, the cheapest offered in the Trade.

NEW ROSES FOR 1876 NOW BEING SENT OUT IN VERY FINE PLANTS. LISTS FREE.

EWING & COMPANY,

THE ROYAL NORFOLK NURSERIES, EATON, NEAR NORWICH.

NEW STRIPED ROSE,

BEAUTY of GLAZENWOOD.

A Hybrid Tea of a most distinct and novel kind, unlike any other variety already known, and may possibly prove to be an entirely new genus. The ground tint is a lovely golden-yellow, darker but after the style of "Madam Falcot," each petal being distinctly striped and flaked with a bright carmine, as often seen in the coloration of some Tulips, the buds before expanding being boldly and beautifully marked with crimson. The foliage is grand, of a beautiful light satiny green, the serrated edges being marked with red. The odour is delicately sweet, as in the generality of Tea Roses. The flower is of good shape and build, with plenty of petals; the flower-buds pointed and very handsome. It is impossible to convey by description the marking and beauty of this charming Rose, but it is without doubt the most striking novelty introduced for years.

"A Rose of golden-yellow, striped and flaked with scarlet or vermilion, sounds like a dream or a fairy tale. It is nevertheless a reality." H. CURTIS, *in the "Garden."*

Figured in the *Floral Magazine*, Plate 174.

Coloured Plates, 1s. each. Strong Plants in Pots, 21s. each. The usual discount to the Trade.

LEWIS WOODTHORPE,

GLAZENWOOD NURSERY, BRAINTREE, ESSEX.

EWING'S INFALLIBLE COMPOSITION

FOR THE
PREVENTION AND DESTRUCTION
OF

M I L D E W,

In Bottles, 1s. 6d. and 3s. each; Packed for Travelling, 1s. 9d. and 3s. 4d. each.

To make respectively Eight and Sixteen Gallons of Mixture fit for use.

TO BE HAD FROM ALL PRINCIPAL NURSERYMEN, SEEDSMEN AND FLORISTS.

Mr. Q. READ, *Pleasley Hall, Mansfield, in* "The Garden," *October* 23, 1875, *writes :*—

"I have had the Vines in two houses attacked with mildew just after the fruit has been set. Air had been given night and day, a brisk temperature maintained, damp and stagnation avoided, and both bunches and foliage had been well dusted with sulphur; yet, notwithstanding all this, the mildew continued to make progress. This season it appeared in my early vinery about the usual time, just after the Grapes had set, and all our efforts to stop it were unavailing. Fearing it would appear as usual in the second house, I bought a few bottles of 'Ewing's Composition,' and applied it according to the instructions received, and the result has been most satisfactory. Not a trace of mildew has been observed during the season, and the Vines have ripened the best crop of Grapes we have had in the house for nine years."

EWING AND CO., THE ROYAL NORFOLK NURSERIES, EATON, near NORWICH.

Pelargoniums, Fuchsias, and other Bedding Plants.
All established in single pots.

WOOD AND INGRAM beg to offer :—

PELARGONIUMS, Show, Spotted, and Fancy, fine flowering plants in 5-inch pots, good named sorts, 50s. per 100; 8s. per dozen.
CALCEOLARIA, Herbaceous (finest exhibition strain), extra fine plants in 5-inch pots, 9s per dozen, 1s. each.
FUCHSIAS, in great variety, to name, in 5-inch pots, splendid plants, 40s. per 100; 5s. per dozen.
PELARGONIUMS, Golden Tricolor, J. D. Bassett, Macbeth, Miss Batters, 6s. per dozen; Peter Grieve, 9s. per dozen; Louisa Smith, Mrs. Dix, Pre-eminent, 4s. per dozen; Queen Victoria, Sir R. Napier, Countess of Craven, Sunset, 4s. per dozeu; Sophia Dumaresque, 3s. 6d. per dozen.
,, Silver Tricolor, Prince Silverwings, 3s. per dozen.
,, Bronze and Gold, The Dragon, 3s. per dozen; Perilla, 3s. per dozen; Prima Donna, 4s. per dozen.
,, Crystal Palace Gem, 20s. per 100; Vesuvius, 18s. per 100; Master Christine, 20s. per 100.
DAHLIAS, Show, Fancy, and Bedding, 4s. per dozen.
AGERATUM, Imperial Dwarf, 2s. per dozen, 14s. per 100.
ALTERNANTHERA, sorts, 2s per dozen, 14s. per 100.
CINERARIA MARITIMA, 2s. per dozen, 14s. per 100.
,, ,, CANDIDISSIMA, 2s. per dozen, 14s. per 100.
GNAPHALIUM LANATUM, 2s. per dozen, 14s. per 100.
IRESINE HERBSTII, 2s. per dozen, 14s. per 100.
LOBELIAS, best varieties, 2s per dozen, 14s per 100.
MESEMBRYANTHEMUM CORDIFOLIUM, 2s. per doz., 14s. per 100.
CALCEOLARIA AUREA FLORIBUNDA, and other varieties, 2s. 6d. per dozen, 18s. per 100.
HELIOTROPES, of sorts, 2s. 6d. per dozen, 18s. per 100.
PETUNIAS, of sorts, 2s. 6d. per dozen, 18s. per 100.
SALVIAS, of sorts, 2s. 6d. per dozen, 18s. per 100.
COLEUS VERSCHAFFELTII, 2s. 6d. per doz., 18s. per 100
LILIUM AURATUM, 1s. 6d to 5s each.
ADIANTUM CAPILLUS-VENERIS, 8s. per dozen.
ASPLENIUM MARINUM, 9s. per dozen.
W. & I's new descriptive Spring CATALOGUE is now ready, and will be sent free on application.
The Nurseries, Huntingdon.

AVENUE TREES.

	Girth 4 ft. from ground.
LIMES, 12, 14, 15, 16 and 18 feet high ..	6 to 10 inches.
PLANES, Occidental, true, 12 to 15 feet high	5 to 8 ,,
MAPLES, Norway, 12 to 16 feet high	5 to 8 ,,
CHESTNUTS, Horse, 10 to 14 feet high ..	8 to 10 ,,
,, Scarlet, 10 to 14 feet high	8 to 10 ,,
,, Double, 10 to 14 feet high	8 to 10 ,,
POPULUS CANADENSIS NOVA, the fastest growing and without doubt the very best tree for smoky and exposed situations, 12 to 18 feet high	5 to 10 ,,
ELMS, 15 to 18 feet	7 to 9 ,,

ANTHONY WATERER respectfully invites an inspection of his stock of the above trees, now growing in his Nursery, stout and straight in stem, with well balanced heads, and above all, splendid roots. They are unquestionably the finest lot of Avenue Trees to be met with in any Nursery in Europe. Intending planters will not be disappointed, there are many thousands to select from.
Knap Hill Nursery, Woking, Surrey.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of
WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

DAVID LLOYD AND CO. (LIMITED).
CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.
Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following :—
J. T. RUBERY, 8B, Rumford Place, Liverpool.
SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birming-
R. AND J. TAYLOR, 17, Vachel Road, Reading. [ham.
AGENTS WANTED.

GREAT REDUCTION IN PLANTS.—Having a very fine stock of the following, I have great pleasure in offering them at the low prices annexed :—GERANIUMS, Tricolors, in sorts, 3s. 6d per dozen; Bronze, in sorts, 2s. 6d. per dozen; Ivy-leaf, L'Elegante, Lady Edith, 3s. per dozen; Silver edged, 3s per dozen; Zonal and Nosegay, Lord Macaulay, Richard Cœur de Lion, Rose of Allandale, Nelson, 3s. 6d per dozen: Jean Sisley, Congress, Velocipede, Rosalia (fine pink), 3s. per dozen; Vesuvius, H. M. Stanley, Thomas Moore, 2s. 6d. per dozen. GERANIUMS in variety, for mixed beds, 20s. per 100; very fine varieties for pots or bedding, carefully selected from Pearson's, Denny's, and other noted raisers, 3s. per dozen, 21s. per 100; Doubles, Scarlet Jewel, 2s. 6d. per dozen; Whites, alba-plena, 2s. 6d., Aline Sisley, 3s. per dozen. One hundred Geraniums in fifty varieties, including Tricolor, Bronze, Silver-edged, Ivy-leaf, Zonal, and Nosegay, for 24s. COLEUS, in great variety, 2s. per dozen, 14s. per 100; from stores, 8s. per 100. Coleus Verschaffelii, 2s. per dozen, 14s. per 100. VERBENAS, Purple, Scarlet, White, Pink, and Crimson, 2s. per dozen. LOBELIA, speciosa, 2s. per dozen, 12s. per 100; pumila grandiflora, 2s. per dozen, 12s. per 100. HELIOTROPES, mixed, 2s. per dozen. AGERATUM, Countess of Stair, 2s. per dozen; Imperial Dwarf, 1s. 6d. per dozen. FUCHSIAS, new, of 1875, in sorts, 4s. per dozen; choice older sorts in great variety, 2s. per dozen. PENTSTEMONS and ANTIRRHINUMS, in sorts, 3s. per dozen. PETUNIAS, Seedling (Dunnett's new hybrids), 2s. per dozen; the above are all good plants in single pots. CALCEOLARIAS, Golden Gem, turned out of pots, 2s. per dozen. PANSIES, twelve fine exhibition sorts, 3s.; 100 Pansies in thirty choice varieties, for 18s.; Cloth of Gold, the finest yellow, 2s. 6d. per dozen, 16s. per 100. Pansies, in ten fine varieties, for borders, 12s. per 100. All the above package free for cash with order. Plants turned out of pots 3d. per dozen off the above prices.
JOSEPH LEIGH, Sandy Lane Nurseries, Lowton, near Newton-le-Willows.

Sutton & Sons

CHOICE FLOWER SEEDS,

FREE BY POST OR RAIL.

Sutton's Collections of Choice Flower Seeds, to produce a beautiful and continuous display during Summer and Autumn.

No. 1 Collection, Free by Post or Rail			..	£2 2 0
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Small and Useful Collections can also be had, from 2s. 6d. to 7s. 6d. Free by Post.

Complete Instructions as to the Cultivation of Sutton's Choice Flower Seeds will be found in

"SUTTON'S AMATEUR'S GUIDE,"

The most practical work on gardening yet published, beautifully illustrated with 300 engravings.

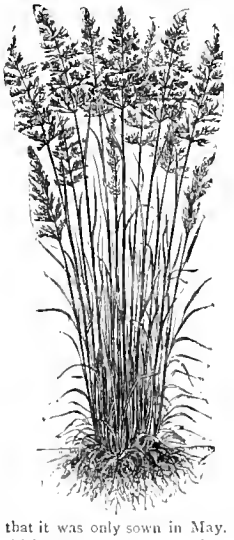
Price 1s., post-free for 14 stamps. Gratis to Customers.

TO OBTAIN THE

Best Garden Lawns and Croquet Grounds

SOW

SUTTON'S LAWN GRASS MIXTURE,



Which forms a close velvety turf in a very short time. For making New Lawns or Croquet Grounds 3 bushels or 60 pounds is required per acre, or 1 gallon to every 6 rods (or perches) of ground.

For improving those already in turf, 20 pounds should be sown per acre.

March, April, and May are the best months for sowing.

Price 1s. per lb.; 20s. per bushel.

From Mr. J. MERRICK, *Gardener to* S. Forster, Esq., *Le Court.*

"The Seed you sent me last year turned out uncommonly well. Several gentlemen who came to Le Court could scarcely credit, from the appearance of the lawn, that it was only sown in May. In August it was as fine and thick as I have seen some lawns that had been laid down for three years."

Instructions on the Formation and Improvement of Garden Lawns and Croquet Grounds Gratis and post-free.

THE QUEEN'S SEEDSMEN, READING.

SEEDS—EXTRA QUALITY.

CYCLAMEN PERSICUM MONSTROSA PLENA, 2s. 6d. and 5s per packet.
CYCLAMEN PERSICUM, choice quality, single-flowered, 1s. and 2s. 6d per packet.
PRIMULA SINENSIS FIMBRIATA, 2s. 6d. & 5s. per pkt,
,, ,, FLORE PLENA, 2s. 6d, and 5s. per packet.
CINERARIA and CALCEOLARIA, 2s. 6d. and 5s. per pkt.
E. G. HENDERSON AND SON, Wellington Nursery, London, N.W.

Seed Potatos.

H. AND F. SHARPE have still on hand the following varieties of SEED POTATOS, which they offer at reasonable prices :—

Myatt's Prolific Kidney,	Walker's Improved Regents,
Alma Kidney,	Yorkshire Regents,
Rivers' Royal Ashleaf Kidney,	Fluke Kidney,
American Early Rose,	Paterson's King of the Flukes,
Early C ..	Alpha,
Paterson's Victoria,	Eureka
Model,	

Seed Growing Establishment, Wishech.

NEW and SELECT LANTANAS.—This free-blooming class of Plants are very useful for Bedding (equal to Verbenas), and they also make desirable pot plants, blooming all through the season. Twelve select and very superb varieties, 2s. 6d., post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW COLEUS of 1875.—Twelve superb varieties New Coleus, selected from the best varieties of 1875, very effective and distinct; the twelve varieties in good plants, 3s., post-free; also twelve very select older varieties, 2s., post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW and SELECT PELARGONIUMS.—Now ready to be sent out in good plants, large-flowered Show, Fancy, and French spotted Pelargoniums; twelve best selected varieties, post-free, 6s.
NEW AGERATUM, DUCHESS of EDINBURGH, the best Dwarf Blue yet produced, 3s. per dozen, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex,

NEW and SELECT HELIOTROPIUMS.—This highly fragrant and free-blooming class of Plants has been much improved The new compact growers are very effective for Bedding and Pot Culture. Twelve select and very superb varieties, 2s. 6d., post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW FUCHSIAS of 1875, now ready to send out, carefully selected from the best kinds sent out in 1875, in good plants. Twelve select New Fuchsias, 4s.; 12 best selected varieties of 1874, for 3s.; 12 very fine older varieties, 2s.; all sent post free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW DOUBLE WHITE GERANIUM, "GEORGE SAND," the largest and best Double White; 12 superb varieties Double Geraniums, including "George Sand" and other new colours, in good plants, post-free for 6s.
NEW AGERATUM, DUCHESS of EDINBURGH, the best Dwarf Blue yet produced, 3s. per dozen, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW VICTORIA DAISIES.—This new strain of Double Daisies produces flowers 6 inches in circumference, on long foot-stalks 8 inches high, looking more like large Ranuncuh than Daisies. They are decided acquisitions to our early spring-blooming plants. B. W. K. is now enabled to offer the following six varieties, post-free, for 2s., viz. :—Albert Edward, Albert Victor, Masterpiece, Nil Desperandum, Renown, Queen Victoria; 12 newer varieties of 1873, in 12 fine varieties, for 6s., post-free; also a fine mixture of colours, unnamed, at 1s. 4d. per dozen, or 8s. per 100, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham, will be glad to send their CATALOGUE for this season on application. The stock of the undernamed, in best sorts and good plants, is very large and fine :—

	Per doz. s. d.	P. 100 £ s.
Antirrhinums	3 6	1 5
Ageratums	2 0	0 12
Chrysanthemums	3 0	1 0
Carnations and Picotees, single plants	6 0	2 5
,, pairs	11 0	3 15
Clematis	15 0	5 0
Calceolarias	1 0	0 8
Coleus	3 0	1 1
Carpet Bedding Plants	1 6	0 10
Daisies, various colours	1 0	0 5
Fuchsias	3 0	1 0
Geraniums, Tricolor	3 6	1 5
,, Bicolor	3 6	1 5
,, Zonal and Nosegay, in sorts for pots	3 0	1 1
,, autumn struck, for bedding, out of pots	2 0	0 15
Heliotropes	2 6	0 18
Iris germanica	3 0	1 0
Lobelias	1s. to 2 0	6s. to 12
Succulents	6 0	
Greenhouse plants	12s. to 18 0	
Stove plants, 12s. to	18 0	
Tree Carnations	12 0	
Echeveria secunda glauca	2 0	12 0
Delphiniums, seedlings, bloomed last year	3 6	
Spiræa japonica, ditto	9 0	
Rock plants	0	1 0

	Per doz. s. d.	P. 100. £ s.
Pansy Mrs. Felton, the best white	3 0	1 3 0
,, Clevedon, Purple and C. Blue	2 0	12 0
Viola, Golden Perpetual, the best yellow	2 0	12 0
Pelargoniums, 6s. to	0 0	
Herbaceous plants	3 0	1 0
Pelargonium Queen Victoria	18 0	
Pansies, show	3 6	1 5
,, bedding	2 0	0 15
Pinks	3 6	1 5
Pæonies	12 0	4 10
Pentstemons	3 6	1 5
Pyrethrums	1 0	0
Salvias	3 0	1 1
Sedums	3 0	1 1
Saxifrages	3 0	1 1
Violas	1 6	0 10
Violets	2 6	0 18
Roses in Pots, H.P.'s	12 0	4 10
Hardy Climbing plants, in pots	12 0	
Dactylis elegantissima	1 0	4 6
Begonias	4 0	
Achimenes	2 6	
Dracæna terminalis and Cooperi	18 0	
Caladiums	15 0	
Epiphyllums	12 0	
Phloxes	3 6	1 5
Sempervivums for edging	2 0	0 12
Double Sweet Williams	3 0	1 0

BEDDING PANSIES, &c.

PANSY, Queen of the Yellows. This flowers freely during the summer, is of a rich bright yellow, of a compact neat habit; will make a capital substitute for the yellow Calceolaria: 12s. per 100, £5 per 1000.
,, Blue Perfection, Magnificens, Blue King, and Clevedon Blue, 2s. per dozen.
PYRETHRUM, Golden Gem, in single pots, 4s. per dozen.
PRIMULA JAPONICA, in 3-inch pots, most of them showing flower, 40s. per 100, 6s. per dozen; smaller, in store pots, 25s. per 100.
GERANIUMS, Mrs. Pottle, lovely pink, dwarf, free bloomer, good bedder, 6s. per dozen.
POLYANTHUS, fine, gold-laced (Wiggins' strain), strong, 21s. per 100, 3s. per dozen.
,, ,, seed, 1s. per packet, or ½ oz., 3s.
Terms cash with order.
H. McMILLAN, Nurseryman, St. James' Road, Kingston-on-Thames.

NEW AND CHOICE PLANTS

FOR 1876.

Carter's

CATALOGUE

OF THE ABOVE IS NOW READY,

And will be sent, gratis and post-free, to Purchasers.

THE QUEEN'S SEEDSMEN,

237 and 238, HIGH HOLBORN, LONDON, W.C

THE ROYAL NORFOLK SEED ESTABLISHMENT
ESTº 1844.

SNOWFLAKE POTATO.

Having imported and grown largely of this splendid new variety last season we are in a position to offer fine English-grown seed tubers at the following rates :—

	s.	d.
Per pound	0	6
Per peck of 14 lb.	6	0
Per bushel of 56 lb.	21	0

Cheaper by the sack or ton.

Orders of 21s. and upwards carriage free.

P. McKinlay, Esq., Beckenham, the well-known authority, writing of this Potato in the *Gardeners' Magazine*, Jan. 15 last, says :—"My experience with American varieties has been somewhat extensive, and I find that they generally improve as they become acclimatised. . . . I have no doubt Snowflake will improve in quality, and will become one of the best in cultivation."

Upwards of Fifty other Varieties in Stock.

BEAUTIFULLY ILLUSTRATED
Catalogue of Kitchen Garden and Flower Seeds, Gladioli, &c.
POST-FREE ON APPLICATION.

DANIELS BROS
Seed Growers
NORWICH.

ROBERT MORRISON, NURSERYMAN, Pinefield, Elgin, begs to intimate that, in consequence of the state of his health, he has assumed his Brother, ALEXANDER MORRISON, SOLICITOR, Elgin, as a PARTNER, and that the Business will in future be carried on under the name of R. AND A. MORRISON.
R. AND A. MORRISON beg to offer their best thanks to those who have entrusted their Orders to Mr. MORRISON in past years, and to express a hope that they will continue their support to the new Firm.
They have now secured the services of a Manager who has had large experience in English and Scotch Nurseries, and is thoroughly acquainted with the rearing of all kinds of Forest Trees, Shrubs, &c.
All orders will receive immediate attention, and great care will be taken in Lifting and Packing Plants.
Pinefield Nurseries, Elgin, April 10, 1876.

Cheap Plants.—Cheap Plants.

WILLIAM BADMAN offers the following cheap plants for present potting :—
VERBENAS, Purple, White, Scarlet, Rose, Crimson, &c., rooted cuttings, 6s. per 100, 50s. per 1000 ; good plants from single pots, 1s. 6d. per dozen, 10s. per 100 ; twenty ned sorts, 8s. per 100.
CALCEOLARIA, Golden Gem and Kayii Improved, 5s. er 100, 40s. per 1000 , or strong established plants, 1s. 6d. per dozen, 10s. per 100.
LOBELIA SPECIOSA (true), from cuttings, 3s. per 100, 20s. per 1000 ; good plants, from single pots, 1s. 6d. per dozen, 10s. per 100.
HELIOTROPIUM, finest dark, 6s. per 100; or large plants, 1s. 6d per dozen, 10s. per 100.
PELARGONIUMS, Vesuvius and Jean Sisley, scarlet; Madame Vaucher, fine white ; Mrs. W. Paul and Blue Bell, pink ; Waltham Seedling, fine bedding crimson ; all good plants, from single pots, 1s. 6d. per dozen, 10s. per 100 ; Master Christine, finest pink, 2s. per dozen, 15s. per 100.
,, Gold-leaf: Crystal Palace Gem, good plants, 2s. per dozen, 15s. per 100.
,, Silver-leaf: Flower of Spring, Bijou, Prince Silverwings (fine), 2s. per dozen, 15s. per 100.
,, Tricolor : Mrs. Pollock, 2s. 6d. per dozen, 18s. per 100.
ALTERNANTHERA, magnifica and paronychioides, 6s. per 100, 50s. per 1000 ; amœna spectabile (finest), 8s. per 100, 1s. 6d. per dozen.
AGERATUM, Imperial Dwarf, blue, makes a fine bed, 1s. per 100 ; from single pots, 1s. 6d. per dozen, 10s. per 100.
IRESINE, Lindeni, crimson leaf, fine thing, 6s. per 100, 1s. per dozen.
COLEUS, Verschaffeltii, rom store pots, 6s. per 100 ; or larger, 1s. 6d. per dozen, 10s. per 100.
STELLARIA AUREA, new golden edging plant, 4s. per 100, 1s. per dozen.
CENTAUREA CANDIDISSIMA, silver-leaf, 3s. per dozen, 20s. per 100.
Package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

ORCHIDS, ORCHIDS, ORCHIDS.

W. F. BOFF
Offers Orchids, good sorts, nice plants, at 21s., 30s., and 42s. per dozen.
203, UPPER STREET, ISLINGTON, LONDON, N.

Choice Bedding Plants.

All strong Plants, established in single pots, except those marked ( ).

ISAAC BRUNNING AND CO.
Beg to offer
PELARGONIUMS, strong blooming Plants, in 5-inch pots, good named show and fancy varieties, 6s. per dozen
,, Scarlet (such as Tom Thumb, Attraction, and others), 2s. 6d. per dozen, 18s. per 100
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,, White Madam Vaucher, 3s. per dozen
,, Nosegay (as Stella, &c), 2s 6d. per dozen, 18s. per 100
,, Choice Zonal, leading varieties, 3s. to 4s. 6d. per dozen
,, ,, ,, in 5-inch pots, 6s. to 9s. per dozen
,, Silver Variegated—Bijou, Flower of the Day, &c., 3s. per dozen
,, Tricolor (as Mrs. Pollock), 3s. 6d. per dozen
,, Gold and Bronze, many varieties, 3s. to 4s. 6d. per dozen
,, Double Flowering, best sorts, 3s. to 4s. 6d. per dozen
,, ,, ,, in 5-inch pots, 6s. to 9s. per dozen
CARNATIONS, finest named varieties, 18s. to 24s. p. doz. pairs
CALCEOLARIA, aurea multiflora, 2s. 6d. p. doz., 18s. p. 100
COLEUS, many varieties, 3s per dozen
DAHLIAS, in variety, 3s. to 6s. per dozen
GAZANIA SPLENDENS, 2s. per dozen, 14s. per 100
,, ,, VARIEGATA, 2s. per dozen, 14s. per 100
HELIOTROPES, in variety, 2s. 6d. per dozen, 18s. per 100
FUCHSIAS, in great variety, 3s. to 6s. per dozen
AGERATUM, Clapton Gem, splendid new, 4s. per dozen
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PERILLA NANKINESIS, 2s. per dozen, 14s. per 100
MESEMBRYANTHEMUM, cordifolium variegatum, 2s. per dozen, 14s. per 100
PETUNIAS, a splendid assortment, 3s. to 6s. per dozen
,, Single, 2s. per dozen, 14s. per 100
PICOTEES, finest named varieties, 15s. to 21s. per dozen pairs
PINKS, Choice mixed Border, 3s. per dozen, 20s. per 100
PYRETHRUM AUREUM, 2s. per dozen, 14s. per 100
VERBENAS, many sorts, 3s. per dozen

Brunning & Co 's Guinea Collection of Bedding Plants contains :—

24 Geraniums, in sorts	12 Pyrethrum aureum
12 Calceolarias, yellow	6 Dahlias
6 Fuchsias	12 Iresines
12 Lobelias, blue	20 Asters
12 Ageratums	20 Stocks
12 Mesembryanthemums	

Forwarded package and packing free (turned out of pots) on receipt of post-office order or cheque.
For other varieties, see Plant CATALOGUE, post-free on application.
ISAAC BRUNNING AND CO., Great Yarmouth Nurseries.

CABBAGE PLANTS, CABBAGE PLANTS. —Robinson's Champion Drumhead Cabbage Plants, at 2s. per 1000.
J. PERKINS AND SON, 52, Market Square, Northampton.

VIRGIN CORK.
For Decorating CONSERVATORIES, GARDENS, &c.
Loose .. .. .. £11 per ton.
Baled .. .. .. £12 per ton.
Sample Bales of 1 cwt., 13s.
G. F. CONWAY AND CO., 53, Hop Exchange, Southwark, S.E.

Odontoglossum vexillarium, Cattleya gigas, Cattleya Mendelii, Phalænopsis intermedia, and others.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, May 9, at half-past 12 o'Clock precisely, 100 healthy growing plants of Odontoglossum vexillarium, Cattleya gigas, Phalænopsis Schilleriana, P. amabilis, P. Luddemanniana, P. rosea, one P. leucorrhoda, one P. intermedia, Dendrobium Wardianum, D. Falconeri, D. formosum giganteum, D. Dixanthum, Vanda Cathcarti, V. Bensoni, Cymbidiums, Saccolabiums, Odontoglossums, &c. Also imported Plants just arrived by R. M. steamer *Lorne*, of Cattleya Mendelii, Odontoglossum triumphans, and Masdevallia Harryana.

On view the morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

ODONTOGLOSSUM VEXILLARIUM.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, May 12, at half-past 12 o'Clock precisely, by direction of Mr. BULL, a magnificent importation of ORCHIDS from the United States of Colombia, just arrived, *ex Tasmania*, in first-rate condition, comprising some hundreds of the beautiful ODONTOGLOSSUM VEXILLARIUM, several of them fine masses, and all with growths, or breaking freely ; some very fine strong pieces of "Oncidium Weltoni," and a quantity of "O. Kramerianum" and "Uropedium Lindeni."

At the same time will be Sold an importation from the East Indies of "Phalænopsis Schilleriana" and "P. amabilis," in good condition, Dendrobiums "amœnum," "densiflorum" "chrysotis," "devonianum," "barbatulum," and "marmoratum," &c. Also a small Collection of choice Established ORCHIDS.

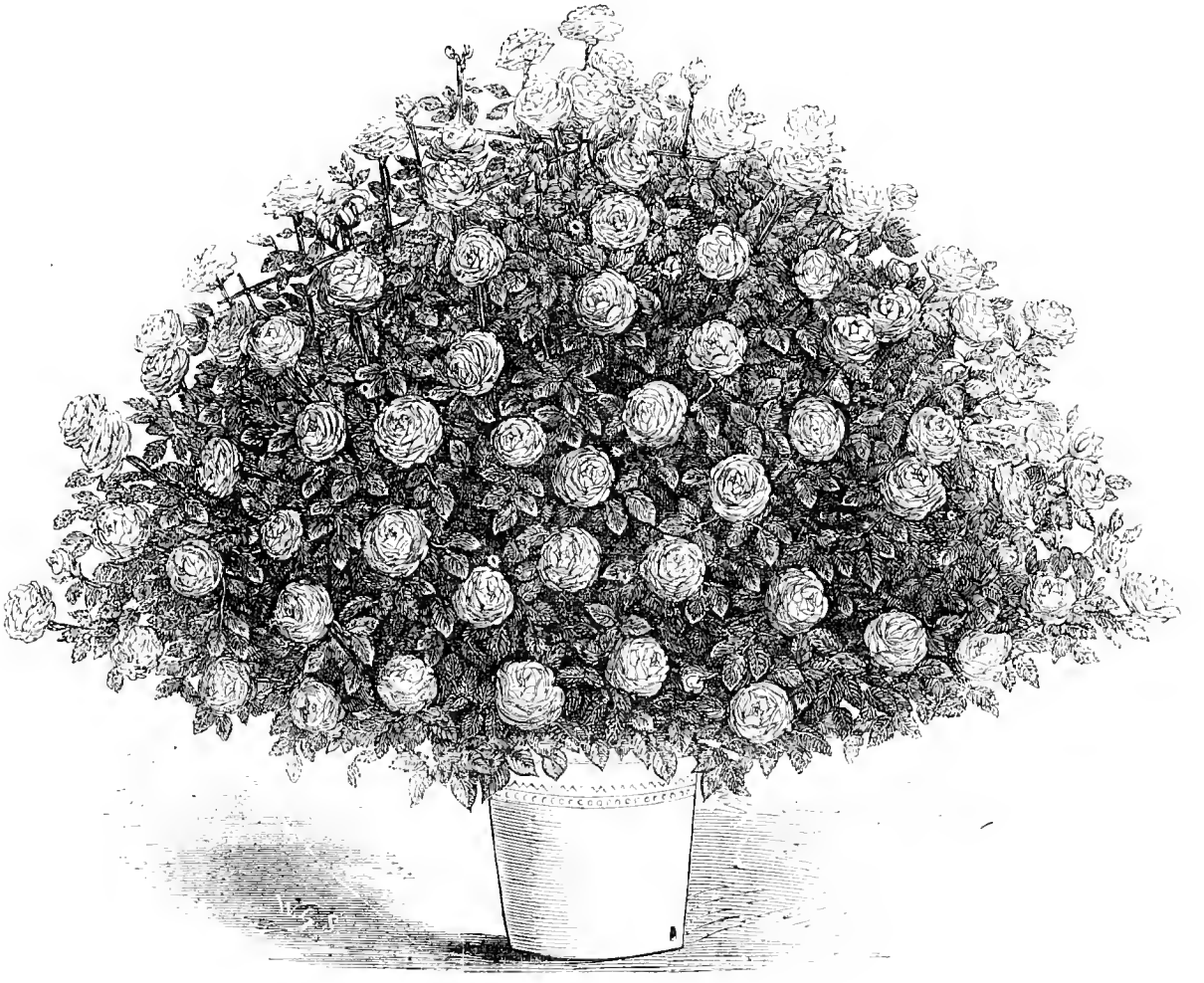
On view the morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

PAUL & SON'S ROSES IN POTS

AT

THE "OLD" NURSERIES, CHESHUNT, N.



H. C. CHARLES LAWSON, grown by Paul & Son in 1875.

The Pot Roses and Rose House promise to be in bloom on and after Thursday, May 11. All interested in Pot Rose Culture are invited to inspect these specimens. They are considered by PAUL & SON to be the finest ever grown. The above specimen is from a photograph of a plant of last year's culture.

On the 1st of June will be ready the New English Raised Seedling Roses,

RAISED BY PAUL & SON, OF THE "OLD" NURSERIES, CHESHUNT, N.

A continuation of their Cheshunt-raised Seedlings, LORD CLYDE, DUKE of EDINBURGH, S. REYNOLDS HOLE, CHESHUNT HYBRID, THE SHAH, and W. W. SAUNDERS, a series of fine varieties, which year by year have grown more into public favour.

1876.

H. P. DUKE of CONNAUGHT (Paul & Son). Fine plants in pots, 10s. 6d each.

First-class Certificates Crystal Palace Rose Show, Royal Aquarium, Royal Botanic Society, and Royal Horticultural Society (unanimous) Colour rich velvety crimson with an intense fiery flush, the brightest in its way; shape exquisite, an almost perfect form—in our opinion the finest dark Rose sent out since Duke of Edinburgh. A strong vigorous grower, flowering freely in autumn.

"Undoubtedly a variety of first-class merit, and one which will be invaluable as a dark variety for exhibition purposes."—*The Garden.*

"Paul & Son, of Cheshunt, exhibited a beautiful 'Duke of Connaught' claret-coloured Rose, which was deemed worthy of a special certificate of merit."—*Daily News.*

The *Gardeners' Chronicle*, *Journal of Horticulture*, and other papers spoke most favourably of it as shown both during summer and in spring.

Will be figured in the *Floral Magazine*. Plates 1s. each.

H. P. SULTAN of ZANZIBAR (Paul & Son). 7s. 6d. each.

Blackish-maroon, each petal positively edged with scarlet; a round globular form: wonderfully free and constant. This fine and distinct variety was named and obtained a First-class Certificate at the Royal Botanical Society on the occasion of his Highness's visit to the May Show. Figured in the *Garden*.

H. P. Dr. HOOKER (Paul & Son). 7s. 6d. each.

Most distinct shade of colour, rich scarlet-crimson, with a violet shading, large, very fine, double flower. The first really double seedling obtained from Duke of Edinburgh, one of the finest autumnal Roses we have.

H. P. EMPRESS of INDIA (T. Laxton, Esq.) 10s. 6d. each.

Dark brownish-crimson, very double, finely-shaped flower; most distinct from any other Rose. This may be described as a very dark Maurice Bernardin, being in the way of the old Rose Louis XIV., but a strong grower and a very free autumnal. First-class Certificate Royal Horticultural Society. Figured in *Floral Magazine*.

The Set for 30s.

Ready for delivery, the best Twenty-four of the New French ROSES of 1876, *36s. per dozen, selected by Messrs. Paul & Son at the several raisers'.*
Carefully compiled DESCRIPTIVE LIST now ready.

Please carefully Address—PAUL & SON, the "Old" Nurseries, Cheshunt, N.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

RENDLE'S PATENT SYSTEM OF GLAZING

RAILWAY STATIONS, WINTER GARDENS, EXHIBITION BUILDINGS,

SKATING RINKS, RAILWAY SHEDS, MARKETS, PUBLIC BUILDINGS, &c.,

Also Conservatories, Plant Houses, Orchard Houses, &c.

The new system of Glazing will speedily be introduced for the above; and Architects, Surveyors, Builders, and Contractors are especially recommended to adopt it.

On some Railways the expense of Repairing and Renovating of Glass Roofs is very large; and an enormous saving will be effected when the new system of Glazing is introduced.

The Patentee has already received instructions from the Great Western Railway Company and the South Devon Railway Company to cover several of their Stations on the system.

Architects, Surveyors, Builders, and Contractors, are requested to see the great Circular Roofs of the Royal Aquarium and Winter Garden in Westminster, and the new Ridge-and-Furrow Roofs at Paddington Station, near the departure platform.

On the old putty system the intense heat of the sun in the summer months cracks the putty, then the heavy autumnal and winter rains get in the crevices, the putty perishes, and in a short time the bars are rotten and decayed. On the new system there are no sash-bars, no putty nor paint to destroy. All perishable materials are completely covered by the Glass from the damaging influences of the weather, and the system may therefore fairly be called Indestructible.

PUBLIC AND PRIVATE SKATING RINKS.

Estimates will be forwarded on application for the formation of Public and Private Skating Rinks.

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WILLIAM EDGCUMBE RENDLE,

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SPECIAL AND IMPORTANT NOVELTIES.

THOMAS METHVEN & SONS

Have the pleasure to announce that they have made arrangements to send out the following splendid acquisitions to the class of Decorative Bedding Plants:—

VIOLA "LADY SOPHIE."

Colour reddish purple, with yellow eye. Fine close erect habit. One of the finest and most effective bedding Violas yet sent out.

VIOLA "LADY DIANA."

Colour very dark glossy purple, with fine clear yellow eye. Good habit. Received a First-class Certificate from the Royal Botanic Society, Regent's Park, London.

The above were raised by Mr. Gray, of Eglinton Castle Gardens, Ayrshire, in 1873, from which time they have been used extensively there for bedding purposes, and have been universally admired.

Price 18*s. per dozen. Cheaper by the Hundred.*

CLOVE CARNATION "DUKE OF WELLINGTON."

A most profuse bloomer; colour a brilliant scarlet.

Mr. Thomson, of Drumlanrig, says of it:—"I consider Clove Carnation Duke of Wellington to be the most profuse and lasting bloomer of any variety I have ever seen. It is of a brilliant scarlet colour. The flowers are medium-sized, and the sheath does not burst—qualities which render it invaluable for cutting. In beds it forms a dense mass of colour."

Price 18*s. per dozen.*

GERANIUM "ROBERT BURNS."

This Geranium is a cross between Bronze Crown Prince and Ivy-leaf Duke of Edinburgh. It is without doubt the finest Golden Bronze Bedding Geranium ever introduced.

Although a most luxuriant grower, in height it does not exceed 3 or 4 inches. The leaves are much larger than those of Crown Prince, and it possesses the creeping habit of Duke of Edinburgh. The leaf is of a bright golden colour, with a distinct chestnut zone. It has received several First-class Certificates.

Mr. Thomson, of Drumlanrig Gardens, writing in the *Gardener*, says of it:—"We saw the other day what we are fully convinced is the finest Bronze Geranium that has ever been raised for outdoor purposes. It is a seedling raised by Mr. Gray, of Newfield Gardens, near Kilmarnock. It is a cross between the Ivy-leaf Duke of Edinburgh and Crown Prince, partaking of the creeping or spreading habit of Duke of Edinburgh; and as a Bronze we consider it as far superior in marking to Crown Prince as Crown Prince is to most others. The ground is a bright orange-yellow, with a distinct dark chocolate zone. It grows very strongly, and spreads closely to the ground, with every leaf turned up; and, unlike many of the Bronzes, when planted out and exposed to wet and sunshine, it does not get damaged at the edges of the leaves. It has been named 'Robert Burns.'"

Price 18*s. per dozen.*

VERBENA "PINK QUEEN."

This Verbena, raised by Mr. Niven, of Hopetoun Gardens, is a most beautiful and attractive variety. In colour it is of a pleasing bright pink, it is an early and abundant bloomer, and in habit it resembles the well-known Purple King, and makes a good companion to that variety. It has been greatly admired by all who have seen it at Hopetoun during the last three seasons.

Price 18*s. per dozen.*

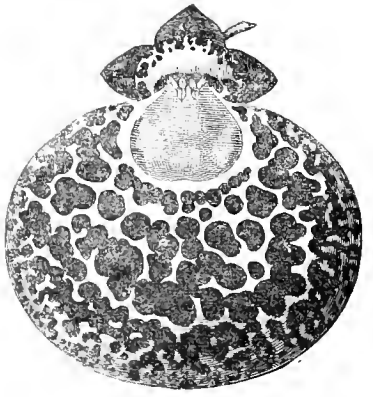
LEITH WALK NURSERIES, EDINBURGH.

B. S. WILLIAMS'

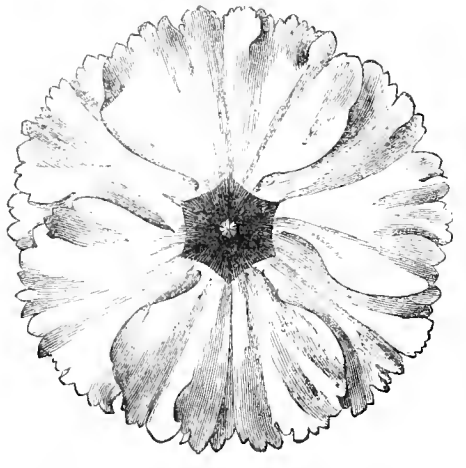
CHOICE

FLOWER SEEDS.

	Per Packet.—s.	d.
AURICULA, saved from the finest show varieties ..	1	6
,, ALPINE, extra choice	1	0
BEGONIA FROEBELII (new).—This is a new and distinct species	2	6
,, SEDENI SEMI-PLENA, a new semi-double flowering variety	2	6



CALCEOLARIA, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
CARNATION, from choice double flowers, 5s., 3s. 6d., 2s. 6d. and	1	6
CINERARIA, Weatherill's Extra Choice Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
CYCLAMEN PERSICUM, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1	6
,, ,, GIGANTEUM	5	0
GLOXINIA, Finest Drooping Varieties	1	6
,, Finest Erect Varieties	1	6
HOLLYHOCK, from the best named flowers	1	0
PANSY, from finest Prize Flowers .. .. 2s. 6d. and	1	0
PICOTEE, extra choice mixed	1	6
PINK, finest mixed	1	6
POLYANTHUS, Wiggin's Prize Strain	1	0



PRIMULA, Williams' Superb Strain, Red, White, or Mixed .. .. .. 5s., 3s. 6d., 2s. 6d., and	1	6
STOCK, Williams' Improved Giant Scarlet Brompton ..	1	6
,, East Lothian, an assortment of 3 colours	2	6
,, Virginian, New Crimson, a distinct variety; the flowers are large and of a bright crimson colour, the habit is dwarf, robust and branching ..	1	0
WALLFLOWER, Harbinger, Autumn and Winter Flowering	1	0
,, Saunder's Dark	1	0

ILLUSTRATED SEED CATALOGUE
Gratis and post-free on application.

ILLUSTRATED NEW PLANT CATALOGUE
Is now ready, gratis and post-free on application.

VICTORIA AND PARADISE NURSERIES,
Upper Holloway, London, N.

ORCHIDS

At unprecedentedly low prices.

MR. WILLIAM BULL

Is constantly receiving Importations from his Collectors and Correspondents abroad, and offers the following at the low prices annexed :—

ODONTOGLOSSUM CIRRHOSUM, £3 3s : the magnificent new Odontoglossum illustrated in the *Gardeners' Chronicle*, April 15, 1876

PLEIONE HUMILIS, good flowering bulbs 3s. 6d. each ; if a dozen are taken, 3s. each ; if fifty are taken, 2s. 6d. each ; a dozen would make a good specimen. The usual price of this hitherto rare Orchid has been 2 guineas each.

PLEIONE MACULATA, same prices as Pleione humilis.

PLEIONE HOOKERIANA (true).—This rare species is one of the coolest of cool Orchids, collected at an elevation of 10,000 feet, where the temperature often falls 12° below freezing point. 7s. 6d. each ; £3 per dozen.

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LYCASTE GIGANTEA	0	15	0
MASDEVALLIA HARRYANA	1	1	0
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,, CITROSMUM	0	7	6
,, ,, ROSEUM	0	10	6
,, CRISPUM (ALEXANDRÆ)	0	10	6
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,, HALLII	1	11	6
,, HASTILABIUM	0	10	6
,, INSLEAYI LEOPARDINUM	0	5	0
,, LINDENI	1	1	0
,, LUTEO-PURPUREUM	0	15	0
,, PULCHELLUM GRANDIFLORUM ..	0	15	0
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SATURDAY, MAY 6, 1876.

THE ROYAL HORTICULTURAL SOCIETY.

THE fact that a widespread disposition exists to canvass and criticise the acts of those who represent any public society, and the position the society itself may happen to be in, affords conclusive evidence that those who are in any way connected with, or take an interest in, the particular pursuit which such society may represent, are fully alive to its importance, inasmuch that people do not usually trouble their heads about that which they do not care for. If this view is correct, and we see around us abundant proofs in everyday life that it is so, there are sufficient reasons for predicting that the Royal Horticultural Society, great as are the difficulties with which it is beset, will ultimately shake them off. There is one thing to a certainty—that if the outpourings of critics and croakers could have caused its destruction, the Society would have ceased to exist ere this, for there are few mistakes, real or imaginary, either of commission or omission, that have not been freely commented upon, not only through the horticultural press, but in the daily and weekly papers as well. Any dispassionate observer cannot fail to see that many things that have been done by the different Councils that have been in office since the Society has been in its present helpless position, however objectionable, were simply the result of circumstances over which they had no control.

But some measures have been introduced which it would be difficult to surmise a motive for, and which appear completely without object. Your correspondent, "Sylvanus" (p. 504) speaks of the resolution passed to exclude nurserymen from a seat on the Council. What reason there could be for passing such a resolution would be beyond most people's comprehension, as all who have had much to do with the Society's affairs know the general feeling that exists amongst nurserymen who take any part in the Society's proceedings, that it is better that none of them should be on the Council—a conclusion which those outside their body by no means concur in, for the simple reason that the knowledge they possess upon horticultural matters could not fail to benefit the Society. But at all events, they may say, as did the damsel in a very old ballad that to some will no doubt be familiar, who, when her *quondam* lover displayed his want of gallantry by expressing himself thus :—

"'I won't marry you, my pretty maid,'

the curt and well-merited rejoinder was—

"'Nobody asked you, sir,' she said;"

and which we submit might not inaptly be applied to the Council in this gratuitous slight upon nurserymen.

Another measure which they have carried is less objectionable but equally useless, that is the admission of those who are or have been *bonâ fide* gardeners to a nominal membership on the annual payment of half a guinea. Nominal, we say, for they have not the privilege of attending the meetings of the Fellows, to express an opinion upon the affairs of the Society, or to give a vote ; all that is conferred by such membership is the right to attend the shows, scientific meetings, lectures of the Society, and to have admission to the garden at Chis-

wick. A few gardeners who live near London may become members on such conditions, but to the great majority scattered over the country it is simply useless, and so far from being any compliment to gardeners as a body, it is about on a par with the way they have always been treated by this and similar societies, in this the greatest of all gardening countries. If the Council really felt disposed to make a handsome concession to the gardeners throughout the kingdom, whatever the rate of subscription had been fixed at, they would have attached the full privilege of Fellowship to it. Had this been done there is every reason to suppose that a large number of gardeners would have become members. If the present and preceding Councils had not been unaccountably short-sighted in this matter they might have seen what would have been the result of such an accession—simply that the majority of gardeners who became Fellows would have exerted themselves to induce their employers, and others with whom they had influence, to become Fellows also. The fact is, the Society has all along treated with indifference and turned the cold shoulder to the men who have made gardening in this country what it is at the present day.

The money which the Council have now been able to borrow will enable them to clear off their more pressing liabilities, and we are given to understand that this is to be done, and the medals which have so long been owing to exhibitors distributed, and which have been waited for, in most cases, with a forbearance that reflects credit upon those to whom they have, in some cases, been so long since awarded. Speaking of medals reminds us of one regulation that exists in the awarding of one class of these—the Lindley Medal we allude to—that is about as unsatisfactory as anything in its way possibly could be. As will, no doubt, be recollected by some who took an interest in the matter, this medal was instituted nearly eleven years ago as a reward for extraordinary cultivation in any plant or plants exhibited at the Society's fortnightly meetings. In the first instance these awards sprang from the committee generally, who, when anything is placed before them possessing extraordinary merit in cultivation, recommend such to the Council for a medal. The committee have not the power to make the award outright, no matter what point of excellence in cultivation the plant or plants before them evince; it is left to the members of the Council who may happen to be present—sometimes three, four, or half a dozen—to confirm or reject that which the committee have adjudged deserving of the distinction. Before we go any further let us look for a moment at what the committee is composed of, and also the Council. The committee consists of some forty nurserymen and gardeners, selected for their general practical knowledge of the subjects brought before them; and it is not too much to say that they represent as thorough and intimate a knowledge of everything submitted to them as it would be possible to find in any body of individuals in existence, and moreover their attendance at the meetings is very good, generally from twenty-four to thirty-six. Now, who are the Council? Some sixteen noblemen and gentlemen who take an interest in and have more or less knowledge of plants; but of whom, as might be supposed, the majority are rarely present at the ordinary meetings when plants are exhibited. Now would it be credited by any one possessing an intimate acquaintance with the comparative practical knowledge possessed by the committee on the one hand and the Council on the other, that a very small number of the latter will sometimes veto the unanimous award of the former? Yet such is the case! Here is a body of gentlemen that however great the interest they take in gardening and plants cannot collectively by any possible means possess more than a fraction of the knowledge to enable them to decide upon the cultural merits of any plant that is brought before them, as compared with the committee as a body; and this medal is intended for and looked upon as the highest award that is in this country bestowed upon the highest cultural skill. Those who made this regulation in all probability never gave a serious thought as to the ridiculous position the committee are thereby placed in, of having their deliberate decisions stultified. The Council in the position they thus hold are a standing insult to the judgment of the committee and endanger justice to those who exhibit, and who have in this way suffered, at least in one case, resulting in a positive injustice by annulling the committee's award made to plants that evinced excellence in cultivation to an extent not surpassed by any that have ever been placed before them. The ridiculous position the committee are placed in is shown by the fact that in each case when any exhibit is put before them possessing such exceptional merit as to satisfy them that it deserves the high distinction of a Lindley Medal, they in each case give a Cultural Certificate as well, so that if the Council place their veto upon the award of the medal, the plant may not pass altogether unnoticed. It might be said that the regulation was necessary to prevent the possibility of the committee not requiring a sufficiently high standard of culture. That they are not open to this charge is fully proved by the fact that in the eleven years that will shortly have elapsed since the medal was instituted only some fifteen awards have been made, twelve of which have been confirmed by the Council.

Still, notwithstanding all this, there is something attached to the name of the Royal Horticultural Society, and there are few who really love the pursuit, either employers or employed, who do not take an interest in the Society for the undoubted benefits that, though in years somewhat remote, it has conferred upon horticulture. We sometimes meet with those who take a desponding view of the situation, and who predict that the Society will die out; but for such gloomy forebodings there is no ground, as, if the Society as it at present exists were to become extinct to-morrow, it would at once rise relieved from and untrammelled by the insupportable load of adverse conditions under which it is now struggling.

Within the last quarter of a century horticulture has had double the number of adherents that it ever before had in this or any other country, and they are rapidly increasing, and will continue to do so. These require and must have a rallying-point, and this point must be the Royal Horticultural Society in some shape or other. On this we speak advisedly, from constantly coming in contact with large numbers of those engaged in the pursuit in all ways and in all parts of the kingdom, that there never was a time when so many express their readiness to give practical proof of their disposition to help the Society could they only see the way to do it. But the general cry is—What is the use of us, who reside in the country, becoming subscribers, and throwing our money into the vortex at South Kensington? For it is felt, and reasonably so, by all who give even the most superficial attention to the matter, that not 5 per cent. of all the money that goes, or ever went there, can or did by any possible means benefit horticulture in any way. Those who stand by the Society with a view to save something from the wreck which it seems ultimately impossible to avert, deserve well of all who take an interest in the pursuit. May they succeed. *B. T.*

GARDENING AT BANGALORE.*

The following seeds, received a few days ago from Bangalore, were sent at once to Mr. Barron, at Chiswick, at the suggestion of Dr. Hogg:—1, Poinciana regia; 2, Canna indica, from specimens over 10 feet high; 3, Adenanthera pavonina; 4, Bauhinia alba; 5, B. variegata; 6, Erythrina corallodendron; and 7, Jatropha multifida; and ten kinds of Indian "greens" were forwarded some days afterwards. The Poinciana seed was carefully selected from the freest flowering trees, in which there was a tendency to increased variegation of the self-coloured petals. The flowers are of two kinds, one where the two larger variegated petals are suffused with a yellowish tinge, and the other with a rose-coloured ground, the other three petals being of different shades, from orange to nearly crimson. The variety in the markings of the variegated leaves is great, and experiments are being made to establish a distinct kind, with all the petals variegated and fringed. Some success has already attended the efforts made to hybridise the best kinds of P. regia, and these are again being crossed with P. alata, P. pulcherrima of two kinds, with orange and yellow flowers, and P. Gilliesii. Poinciana pulcherrima grows more as a shrub than a tree, which P. regia soon attains to, and is most valuable in the garden, from its compact, even growth, and long-continued blooming for several months together. The P. regia is so common at Bangalore that its value as a highly ornamental tree is somewhat overlooked, though in April, May, and June it is covered with its conspicuous blossoms, to the almost exclusion of its beautiful foliage. Groups of them in the Cubbon Park, set off by the varied foliage of the Mango, Pongamea glabra, Thespesia populnea, Ficus, Acacias, and other different kinds of indigenous trees, relieved by well-placed Araucarias, Lagerstroemia regina, Casuarina, Spathodea, Cathartocarpus Roxburghii and fistula, and others, have a very gorgeous effect. Efforts are being made to grow the Poincianas as small standards. The P. regia may prove too strong-growing for small standards, but P. pulcherrima can be easily so trained, and distinct and very manageable varieties are confidently expected from the experiments in crossing. If their cultivation could be introduced into this country a brilliant addition to our flower shows would be the result. Bauhinia alba blooms freely about March, the flowers being distinctly sweet-scented. B. variegata is a handsome large-leaved shrub, with variegated orange flowers. The B. purpurea is a common roadside tree, of rather ragged appearance; and B. scandens and B. Vahlii are two very strong-growing climbers, B. Vahlii particularly so—the measured growth for some months of the specimen in the Lál Bágh being at the rate of 10 feet per month along a double line of telegraph wires extended from tree to tree to show it off.

The native names of the "greens" have only been given. They are some of those in ordinary use by the vegetarians of Southern India, and are cooked by them in a great variety of ways. At a dinner given by a native gentleman of Mysore, on an occasion of ceremony, there were fifty different dishes made from five or six vegetables, each with a different appearance and a distinctive flavour. Some are highly aromatic and make into a strongly flavoured Spinach, but they are generally ignored by Europeans, who are content with the bullet-like Peas, the stringy French Beans, enormous Cabbages, Beetroot, and stunted Celery and Lettuce of the ordinary market produce, whereas if properly prepared and judiciously mixed these native "greens" afford an excellent change. The Sweet Potato, the Bhendi (Abelmoschus esculentus) and the Brinjall (Solanum melongena) are sometimes admitted, though not on ceremonial occasions. The exclusion of the native vegetables is the result of a somewhat unreasoning prejudice, or of ignorance of what might be made, with a little skill on the part of the cook, a very welcome and palatable addition to the *ménu*.

The description of the profusion in which vegetables grow in the Murcia and Valencia districts in the South of Spain, reminds me of somewhat similar growth in and around Bangalore; the Bhendi, and some of the Cucurbitaceæ that do so well there, would doubtless do well in Spain. The former, known as Gombo and Okra, if largely grown, would be an acceptable addition to the national "Olla," and could be imported by this country as the Brinjall is. The capsule when young and fresh tastes something like Asparagus, and in the dried state is most useful for stews and soups. The plant furnishes a long and excellent fibre, which a French company are, it is said, about to cultivate largely in Algeria for paper manufacture, but this additional source of vegetable food supply should not be overlooked. The Rozelle (Hibiscus Sabdariffa) might be similarly cultivated for the fibre, and for the fruit, which would be useful in many ways. Both these varieties of the Hibiscus might be grown in the South of France and Spain, and in Egypt, perhaps, with more advantage, so far as that country is concerned. The highly flavoured "Snake" vegetable, that grows freely in Mysore to a length of from 2 to 5 feet, and is a valuable source of food to the poorer classes, should grow well in the South of Spain, for there appears to be a kindred growth of aromatic vegetables there, and in the Mysore country.

The object of this paper, however, is to lay before the committee what is done in Bangalore, where horticulture has within the last few years made

* A paper read before the Scientific Committee of the Royal Horticultural Society on May 3.

rapid strides, in the hope that information may be elicited as to the best kinds of fruits and vegetables to introduce with the prospect of their successful acclimatisation. There is no frost at Bangalore, and with plenty of water and shelter from driving wind, cultivation can be carried on even during the hottest season in March, April, and May, after which there is a rainy and cool season; but with care, fruit, flowers, and vegetables are produced during every month. Apples and Roses are to be had all the year round, and Peaches and Strawberries for six months and more; gardens are kept gay throughout the year, and vegetables of different kinds are always procurable. Bangalore is about 3000 feet above the sea, and the climate may be said to be a pleasant medium between tropical and temperate, without any great extremes. All ordinary European vegetables, in addition to the native supply, grow fairly, but great improvement is required in Peas, Lettuce, and Celery. Asparagus is grown at present only by amateurs, and Cauliflowers are but sparingly brought to market in December and January, and some kind of Cauliflower or Broccoli that would stand the heat well is greatly to be desired. Good Potatos are grown over several hundreds of acres; the average yield of fine marketable tubers, twice a year under irrigation, being one ton per acre. On one occasion twenty Potatos, weighing 16 lb., were exhibited at one of the shows; but a change of seed is required, and though something has been done in this way, much more requires to be done to extend and improve a thriving industry.

A cutting of Asparagus has been obtained in seven months from date of sowing the seed, but, as may be readily imagined, the flavour was anything but desirable, and the plants would doubtless soon have exhausted themselves had the strain been continued. What is wanted is to show that this favourite vegetable can be grown by the market gardeners remuneratively. In many places in the province there is a saline earth where nothing grows very freely. The question is, if such earth would be suitable to grow Asparagus in, or be useful to mix with the ordinary red loamy soil for that purpose. The French system of growth among the shelter of the Vines would appear to be suitable, as analogous shelter could be given between Ricinus, or Cytisus, or other plants, but practical information is much required. The same kind (Connover's Colossal) has been grown (in as short a time as at Bangalore) at Madras by Dr. Cornish, who published an account of it in the *Madras Mail*. Probably the sea air compensated for the extra heat, which, however, did not appear to hurt it, for cuttings were obtained during the hottest months. Mushrooms of good flavour grow spontaneously during a wet monsoon, but no pains have yet been taken towards their artificial culture, which ought to be successful if properly carried on. With regard to fruits, the Mango, Guava, Shaddock, Loquat, Pomegranate, Custard Apple, Plantain, and other tropical growths are sufficiently plentiful, as well as Apples, Peaches, Strawberries, and Figs.

Apples are grown on upright bushes, and some kinds are procurable all the year round. Strawberries are plentiful from January to May, and the season has been extended by the introduction of the Australian berry by Colonel Pearse. Figs and Peaches are to be had twice during the year for three or four months at a time. Peaches are grown on standard trees, which bear plentifully of the kind called by Mr. Rivers the Nectarine Peach. Sir Richard Meade introduced three years ago a larger kind from Central India, but though it is more juicy it has not so much flavour or aroma; the market gardeners pick the fruit before it is ripe (to preserve it from insectivorous pests and from squirrels and crows), and attempt to make it edible by keeping it close packed in large earthen jars with straw or bran. In this way, however, it is only fit for tarts or jam, but if allowed to ripen on the tree the fruit is high flavoured and luscious. Nectarines were imported many years ago, but never fruited. One old tree was on the point of being cut down for firewood, when I interfered and had it transplanted to my own garden. After cutting off all the branches except two or three leading ones, which were afterwards headed down, the roots were also similarly pruned, and in a short time the growth was marvellous, for in four or five months the new branches that were left after much thinning-out were sufficiently ripe, and were cut back a little, but the lateral growth was simply overpowering, and seemed to be all running to wood. Pinching this growth was of no avail; it seemed only to increase it. At last many of such shoots were torn out at the axils, and their fruit-buds appeared in the same place, and in three or four months more the tree, which had assumed a fair head, was covered with bloom, which set well. The young fruit was thinned out, and in due time ten dozen almost ripe Nectarines of good flavour were gathered from a tree that had never borne fruit before. For some reason they had to be picked before they were quite ripe, as they all cracked badly, and as I had to leave the house before they were gathered I cannot state the cause of it. On my return to Bangalore in 1871 the tree was still in existence, but had been much neglected. It blossomed and bore fruit, but during some alterations to the house it was unfortunately destroyed. Previous to this buds had been obtained from it, and freely distributed for culture on the ordinary Peach stocks. Two old trees that had been imported at the same time were also discovered in a neglected garden in the Fort, and were at once purchased and removed to the Lál Bágh in 1873 for proper treatment, in the hope that, by a free distribution of buds, the cultivation of this fruit might be encouraged.

Probably Apricots would also succeed, and Green Gages and certain Plums; possibly, too, white Currants, and late-ripening Cherries. I succeeded in getting an old Plum tree that had been imported many years ago to produce a few Plums; it was, however, an expiring effort—but buds were distributed for cultivation on the ordinary Peach stock, of which any number can be procured. The Raspberry ought to grow well there, but it is not known except as the produce of a bush of the Rubus kind, with foliage of a dark glaucous green on one side, and ash-coloured on the other. The fruit, which is plum-coloured, is of true Raspberry shape, but has not any of its distinctive flavour. The bush bears large-sized berries in abundance, which are grateful enough on hot mornings, when eaten with milk or cream. The introduction of the true-flavoured Raspberry would be a great boon, and the hardy bush might be grafted with that object, or suitable canes be sent out for trial growth. There is not apparently any reason why this desirable fruit should not be as largely grown at Bangalore as the Strawberry, which latter might be improved and extended by sending out such plants as experience would suggest as likely to bear large and well-flavoured fruit in our climate. Plums, Nectarines, Apricots, and Cherries, might possibly be acclimatised with success, and some of the high-flavoured and bright-coloured American Apples might with equal advantage be introduced to extend and improve the present produce, and cause a reduction in the price, which at present is very high. Pears do not grow, but some kinds might succeed, and Orange and Lemon gardens might also be formed. On the Shevaroy Hills, which are some 4500 feet above sea level, Pears grow well, and the Orange, bitter and sweet, ripens very freely and well. There are several specimens of the Olive tree in the Lál Bágh, but they have not fruited. In fact, fruit and vegetable culture has been until lately insufficiently attended to, but there is every disposition to make up for lost time, and the special object of this paper is to elicit some expression of reliable opinion, as to what it would be most advisable to do with the object of improving existing cultivation, and introducing new varieties of fruits and vegetables suitable for our very favourable climate, as such information would most likely prevent many experimental failures. *J. Fuckle, Col. M.S.C.*

Florists' Flowers.

The Auricula Bloom at Kirkby Malzeard, Ripon.—It has already been stated that the season has proved somewhat hostile to the production of a fine Auricula bloom. Cold, dull, sunless weather, with keen biting winds and snowstorms of unusual fierceness, can scarcely be favourable to the production of good flowers, and the consequence is that many fine varieties have failed to come up to the usual standard of excellence they attain, while inferior varieties have been shown with an unwonted floral brilliancy. The character of an Auricula must not be lauded on the one hand, or condemned on the other on the strength of a single season's trial. He is a wise cultivator who refuses to dogmatise on the character of any comparatively new flower, till a series of seasons has given data from which to infer a general average of character.

At this season of the year the Auriculas at Kirkby Malzeard are housed by the Rev. F. D. Horner in a low lean-to house, with a sloping stage in front as well as at the back, and a gangway between them, the full length of the house. Air can be freely given below and above, when required; and a roof-blind is lowered when the sun shines warmly. Here the plants make a robust and healthy growth, and develope their flower-stems.

An inspection of the flowers enabled me to set down the following particulars respecting them, which may prove useful to cultivators. Taking the green-edged section, Page's Champion was seen to be in good character in small plants—indeed very correct—in others just the reverse. Strong plants had flowers with an unusually large paste, and a crowded zone of body colour. The fine old Colonel Taylor (Leigh), always much esteemed for its sterling qualities, had been very correct in expression throughout the season, and especially on young plants—the pips had been as perfect, and as near a model Auricula as they could be imagined in practice; but no plants were in condition just at the National Auricula Show, and available for the purpose. Prince of Greens, a fine standard variety, promised to be very correct, but was not sufficiently forward to be exhibited. Traill's Anna had a very fine dark body colour, and with it a dark green edge also. As a rule, a dark edging of green does not agree with a dark body colour. This variety has a better and rounder paste than Booth's Freedom, which is a crack flower of high standing, but is apt to come with a starry paste on the finest plants. There were, however, fine trusses having seven or eight fully expanded pips. The way in which Beeston's Apollo has flowered this season at Kirkby affords an excellent illustration of how a brilliant second-rate flower will sometimes flash up and beat in expression first-rate flowers when the season does not suit them. It has proved uncommonly good this year. Ashton's Prince of Wales is a variety that is apt to come crumpled, but it is a good flower, with what Mr. Horner terms kind pips—coming in character with apparent ease and readiness. Campbell's Lord Palmerston is very good this year, and it also is a somewhat easy variety to cultivate. Lastly comes Litton's Imperator, a tender variety and a most uncertain flower, as cold weather gives a serious check to its development.

The grey-edged flowers are now somewhat numerous, and as the Kirkby collection comprises all the best in cultivation, a good opportunity was afforded to determine something of their characters. That fine variety, Headley's George Lightbody, was too late in blooming for the National Show, and many of the pips were too green on the edge to be shown as grey—a peculiarity often observed in this variety. A few plants were coming in fine character, the pips in grand order. This variety is termed a "stiff opener," by which is meant that they occupy some time in expanding and flattening, or, as the cultivators term it, "coming down." Headley's Charles Brown and Smith's General Bolivar were both rough, and appeared as if they had been caught by the severe weather. Sykes' Complete was in fair condition on some plants, but not at all itself on others, probably from the same cause. Fletcher's Ne Plus Ultra was exceedingly bold in appearance and correct in form, without any tendency to coarseness; and as many as six splendid pips as large as crown pieces could be seen on a truss. Lightbody's Robert Traill is a grand flower, perfect in tube and paste, but generally crushed on the outer zone, except when the flowers are borne on an autumn truss, *i.e.*, a flower stem that is produced in November or December, and keeps down all the winter, thrusting itself up in spring. Traill's Beauty is a very promising heavy grey-edge, and should be looked after by cultivators. The grand old Lancashire Hero, miscalled Cheetham's in most lists, but really raised by the late Robert Lancashire, was very late in flowering this season; most of the plants had not yet opened their pips. One plant had nine splendid pips, very fine in quality, constituting it one of the best Auriculas in cultivation; another, that had thrown up an autumn truss, had pips quite green on the edge, and light green-edged flowers will often do this. Lightbody's Alma is on the whole a good flower, but apt to be hard in the bud. Chapman's Maria, heavy grey-edged, is a sweet flower with a liquid blue body colour, and very fine, and this season came much flatter in the pips than usual. Walker's George Levick, and Walker's Peveril of the Peak, are two flowers that have to make an appearance in public when the limited number of

plants at present in cultivation can be sufficiently increased to admit of their wider distribution. At present the stock is low. Both are undoubtedly fine varieties, and calculated to do great credit to the discrimination of the raiser. George Levick is a superb flower, particularly bright in the paste, and with a rich edging of silver—a flower well-proportioned throughout. This family of grey-edges, and what may be called a sub-class headed by Ringleader, have very thick petals, but have suffered from the harsh weather, being soon chilled. Alexander Meiklejohn (Kay) is a splendid new flower, not yet in bloom, but promising to come on correctly; nor was Lightbody's Richard Headley yet in flower, opening tardily, but in its very best dress, though too late for the show.

The white-edged varieties of the Auricula are less numerous than those of the two sections just noticed. That gem among white-edges, Heap's Smiling favourite, and very neat in the pip. Ashworth's Regular has the pip a little undersized, but it is quite perfect in its arrangement. Catharina (Summerscales) has the same properties to a certain extent, though the individual flowers do not possess the same merit. Fletcher's Mary Ann is a flower with a very small tube, which gives it a cold and unkind look. A good throat or tube, like that found in Robert Traill, is a great point in a flower. Bright Venus is a good old sort, but with too much body colour this year on all the plants. Taylor's Favourite came good, but had not lasted long in beauty, getting seared on the edges of the petals generally.

Several fine additions have lately been made to the selfs, and they are now becoming a numerous and imposing class. Pizarro had a deep rosewood-brown body colour, and a capital paste; it has been very fine, and, indeed, exceedingly correct. Othello is a paste occasionally weak at the edge. Turner's Charles Perry is the stoutest and smoothest of the blue selfs, but has a sadly pale tube, which is considered a serious defect by the Northern cultivators. It is of a beautiful hue in the body colour. Lightbody's William Lightbody is a vastly improved Lord Clyde, and a nearly perfect crimson-maroon self, and, fine as it is, quite puts Lord Clyde on one side.

Mr. Horner has a large number of seedling Auriculas blooming for the first time. A few are full of promise, and have been marked for further proof. They are mainly in 48-pots, five and six plants in a pot, and they will keep flowering through the summer. A record is kept of the parentage of all the seedlings, so that the origin of any particular flower is readily ascertained. It is curious to note that while the seedlings in some instances take on the character of the foliage of the parent, in others they differ widely

FIG. 105.—CHÂLET IN THE GARDEN OF PRINCE TROUBETZKOI.

Beauty, is a flower to be depended on, and quite a leading one in its section, but greyer on the edge than usual, owing probably to being chilled on the farina. It has a jet black body colour, and a fine white edge. Some very fine plants of Taylor's Glory could be seen, but it appears a delicate variety on the pip, as all were suffering from the chilling weather, and have not come in correct character. It is an early variety, and was getting quite past best. Smith's Ann Smith has an intense white edge, and is a very showy representative flower on strong plants, but sometimes comes with malformed pips. Smith's Ne Plus Ultra was not yet in bloom; it is a good white-edged flower, with a shaded chocolate body colour. Lee's Earl Grosvenor was not in bloom, but is very promising; it is one of the stiffest of all the Auriculas in the petal. It was particularly promising on large plants. Hepworth's True Briton was not yet in flower; it is a very fine broad-petalled white-edge. Countess of Wilton is an old fine old dark velvety self, and well worth growing. Kaye's Topsy is one of the very best of the dark selfs, but apt to come short of the proper number of petals unless well grown. When weakly grown it comes starry. The body colour is a purple-plum, fine tube, and it has a pure circular paste. Martin's Mrs. Sturrock is a good old clarety purple self and in capital condition. This has given to Auricula cultivators a valuable progeny, among them Lord of Lorne, a better flower of a bright crimson ground colour, and good paste and tube; it is also a free grower. Duke of Argyle is a sister flower to Lord of Lorne, much later in flowering, the ground colour deep velvety crimson and with a superior tube, but with the centre notched. This is a peculiarity of the self flowers, and wants working out of them. Lightbody's Meteor Flag is a good violet-blue self, and an old-established sort. Spalding's Mrs. Brightly is a good full mauve self, and a useful flower. Spalding's Bessy Bell is a handsome dark brown-maroon self, but with the in the foliage. There is a pleasure peculiarly keen and exciting in watching the opening of a batch of seedling Auriculas raised from the finest varieties in cultivation. *R. D.*

—— The annual exhibition of the ROYAL NATIONAL TULIP SOCIETY is fixed for Friday, May 26, and Saturday, May 27, and it will take place at the Manchester Botanical Gardens, under the auspices of the Manchester Botanical and Horticultural Society. The season notwithstanding, there is the promise of a fine bloom, unless unpropitious weather should yet spoil the anticipations of cultivators. We have seen several beds in the North, and the plants are making a bold and vigorous growth, healthy in the extreme. Mr. Samuel Barlow's beds are recovering the effects of the scourge which so seriously affected their well-being last year, a thorough change of soil having worked a great improvement. Mr. Barlow now thinks that something highly deleterious in the soil caused the

devastation worked among many of his best plants. The "making up" meeting took place on Saturday last, and, as this phrase is one scarcely understood by those who are not Tulip fanciers, it may be explained as a preliminary meeting of cultivators, at which the latest entries are received, and the list of exhibitors closed; it is also devoted to receiving subscriptions and appointing judges. According to the strict letter of the law, no one should be allowed to enter after the "making up" day. The utility of the "making up" day is apparent, especially in the case of local shows, for if entries were allowed up to the day of exhibition those who fancied their chances weak would very seldom enter; hence it is that the "making up" day is fixed before any exhibitor can determine what his position is likely to be on the show day. In the case of Gooseberry shows, the "making-up" day generally takes place in April, before the bloom is fairly out. The judges are appointed from among the growers and exhibitors at the "making up" meeting, or, if not done then, on the morning of the exhibition day. This system is found to work well. Since the last meeting of the Royal National Tulip Society the ranks of the Tulip cultivators have been thinned by the deaths of the late President, Dr. Hardy, of Warrington; Mr. Michael Potter, of Sale; Mr. William Lea, of Leigh; Mr. Nathaniel Norman, Woolwich; and Mr. Richard Headley, Stapleford, all cultivators of great eminence, and raisers of seedlings which now occupy the very foremost ranks at the exhibitions of the Society.

—— The annual meeting of the NATIONAL AURICULA SOCIETY is always followed by a social gathering of cultivators and fanciers at the close of the exhibition, at which the preliminaries of the show to be held the following year are talked over. A large number of the florists attend, and the occasion is one at which many interesting Auricula reminiscences are told. A few years ago such gatherings used to take place when a new flower was "let out." At that time a new variety was exhibited at the various Auricula shows, and its qualities were then made known among the floral fraternity. In this way the Auricula cultivators were made aware that a new variety was to be distributed. Even the christening of the flower, as the act of naming it was termed, was celebrated with a kind of ritual, and not without bumpers being tossed off to its success. A champion, generally one with a ready tongue and a sense of humour, delivered an oration in praise of the flower, then it was solemnly named, and a kind of floral benediction pronounced. When it had become sufficiently increased to admit of the "letting-out" ceremony taking place, the owner would take his stock of plants to an appointed *rendezvous*, and the purchasers would fetch them, paying for them on the spot. Twenty-five to thirty plants would perhaps represent the stock, or a less number, according to the disposition of the variety to increase, and the sum of half-a-guinea was the usual letting-out price. We have heard Mr. Samuel Barlow of Stokehill House, Chodderton, Manchester, state that he was present when Heap's Smiling Beauty was let out, Mr. Heap taking some thirty plants to the meeting, and disposing of all but nine of the number for sale. Somehow this undoubtedly fine variety did not take with the Auricula-loving public at the first, and it passed through a period of comparative neglect. It is now very scarce indeed, and any one fortunate enough to possess plants of it can command high prices for it; higher perhaps than even its raiser obtained when he let it out. It is thought to be now in the hands of a very few cultivators. If any one could have commenced with the nine plants Heap took away unsold from the letting-out meeting they could now have realised a small fortune. Its value was clearly shown at the recent National Auricula Exhibition at Manchester, when it was awarded the premier prize in the class for white-edged varieties. As far as can be ascertained it was the only variety raised by Heap, or at any rate the only one that remains to this day bearing his name as the raiser. It is sometimes given to men to raise a flower that makes a great reputation, and to do no more. Heap was, we believe, a weaver, and resided at or near Middleton, Manchester, and died a few years ago in reduced circumstances.

VILLA ADA, LAGO MAGGIORE.

In our number for May 16, 1874, p. 630, we were enabled to give a descriptive account of the gardens of Prince Troubetzkoi, on the exquisite shores of the Lago Maggiore, from the pen of our accomplished friend, Professor Karl Koch. His description leaves little for us to say, but, as we have now the opportunity of illustrating the bijou residence of the Prince, we may be permitted to add a few remarks on the garden in which it is placed. The garden, though small, is peculiarly favourably situated. Though within sight of snowy Alps, yet it is securely sheltered by the projecting spurs of the mountains, and within its own limits enjoys a marked difference of climate and soil, owing to the presence of a rocky ridge, which divides the garden into two portions, one backed up with Chestnut woods, and looking toward the mountains, the other facing the lake, and enjoying its temperate climate. So favourably situated, and tended by a proprietor whose heart is in his work, it is no wonder that we may here see, *sub dio*, in the open air, experiments on naturalisation on a very remarkable, if not on an extensive scale. Taking Palms first, we find on reference to our notes allusions

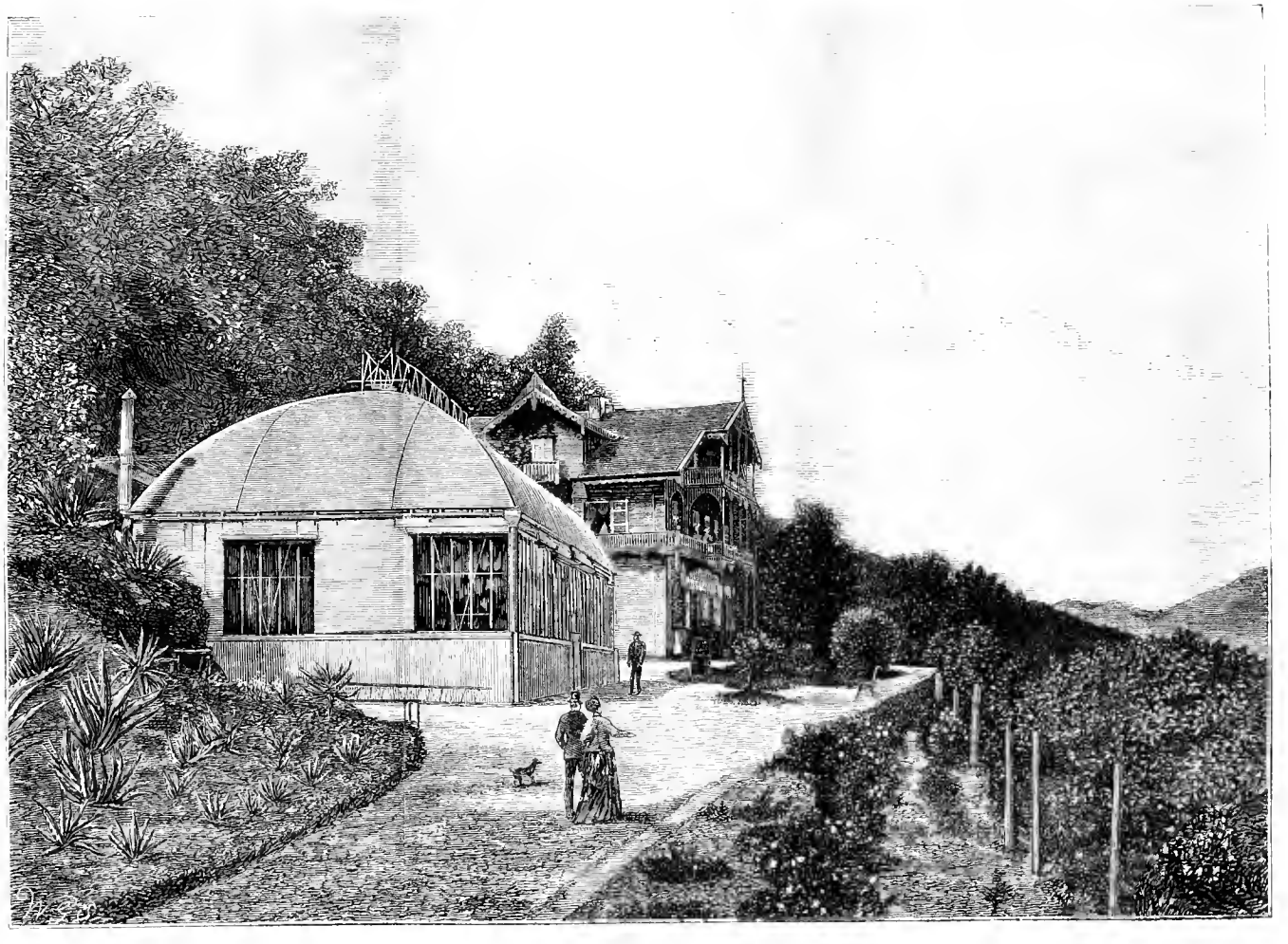

FIG. 106.—PRINCE TROUBETZKOI'S VILLA, LAGO MAGGIORE.

to Chamærops Fortunei, C. excelsa, in fruit; Latania borbonica, Phœnix tenuis, the most hardy of all, and about 5 feet through; Brahea dulcis, Livistona filamentosa, and others. Conifers thrive with extraordinary luxuriance and beauty, as, for instance, the pendulous variety of Cupressus cachemiriana glauca, a lovely plant; and C. torulosa. Sciadopitys verticillata, 6 to 7 feet in height; Cryptomeria elegans, Dammara Brownii, Retinospora plumosa aurea, and R. squarrosa, two magnificent plants upwards of 12 feet in height; Araucaria excelsa and Bidwillii. Among Tree Ferns we noticed Cyathea dealbata, Dicksonia antarctica, and Alsophila australis. Draccenas, such as D. indivisa, thrive; while Agaves flourish to an extraordinary degree. Among those we particularly noted were A. Salmiana, filifera, Verschaffeltii, tenuis, Jacobiana, mitræformis, hystrix, Troubetzkoi (hort. De Smet), a very peculiar variety. Yuccas also are remarkable for their vigour and condition, such as Y. Tréculeana, canaliculata, Parmentieri, De Smetiana; and others. Hardy Proteads, with their peculiar aspect, are here to be seen in the shape of Hakea Victoriæ, Embothrium coccineum, and various others.

Hardy Bamboos form quite a feature of the garden, such as Bambusa mitis, 12 feet through, 20 feet high; B. gracilis, a slender glaucous form; B. Simoni, B. nigra, the latter attaining large dimensions, and Arundinaria falcata. B. arundinacea is not hardy.

The magnificent Doryanthes Palmeri is here grown in the open air. but it was not in bloom at the time of our visit; indeed, we are not aware whether it has yet produced its flowers out-of-doors in Europe. We must not enter into more detail, as it would only be repeating what has been before said, but we cannot forbear alluding to the rapid growth of the Eucalypti, many of which have flowered and produced fruit in this garden. E. amygdalina, a plant of only five years from the seedling stage, is now 14 metres, upwards of 43 feet, in height. E. globulus, E. cæsia, and other species are also grown and manifest in their degree the same vigour of growth. The Prince has taken great interest in advocating the planting of these trees in various malarious parts of Italy, and has found no more strong supporter in this endeavour than Garibaldi. Even in such a climate as this there must it seems be some drawback, and while almost all ornamental trees and shrubs thrive out-of-doors, Vines and fruit trees generally do not prosper, and this although the adjacent hill-sides are clothed with vineyards. Not to prolong this notice we may say that our illustrations show (fig. 106) the residence of the Prince with the attached conservatory, Orchid-house, &c., and (fig. 105) the châlet in the grounds at a little distance from the house.

The Villa Garden.

LARGE-FLOWERING PELARGONIUM.—This is one of the most useful, and at the same time one of the most satisfying plants that a Villa gardener can use for giving floral life to his greenhouse during the summer months. It used to be very much more popular with lovers of plants than it is now, but no neglect can detract from its usefulness or mar its peculiar beauty. From the almost pure white and large and beautifully formed blossoms of Claribel to the brilliant scarlet of Duchess of Cambridge, there are a large number of lovely flowers of such varying and charming hues of colour that it is well one should wax a little enthusiastic in praise of the show Pelargonium. Last year we grew a small and select collection of a dozen or more varieties, and they kept our greenhouse gay till the end of August; then, when the plants went out of bloom, they were placed out-of-doors to ripen the wood, and the shoots were cut into cuttings, and four or six of each variety placed in 48-pots. They were placed on a shelf in the greenhouse, and kept shaded from the sun, and here they made root, and were kept there all the winter, and by the aid of our lamp-stove kept free from frost. Early in March they are potted off into large 60-pots in a rich loamy soil, and as soon as the roots reach the sides of the pots they are shifted into 48-pots, and kept growing on on a warm shelf in the greenhouse. Already some of the forwardest have been stopped two or three times, and they are forming nice bush-like plants that will produce many trusses of bloom at the end of this month and in June. The plants are somewhat apt to become infested with green-fly, a result aggravated by the recent rough, unspring-like weather which necessitated keeping the house close.

We adopt both a simple and satisfactory mode of ridding the plants of this pest. Some Fowler's insecticide is mixed with some warm water at a temperature of 80° or 90°, and when thoroughly dissolved the plants are dipped over head and ears into it and gently moved about while so immersed. The leaves are effectually cleansed in this way, and so the plants are placed on the shelf just as they come out of the mixture. A kind of coating is formed on the leaves, which, drying on them, does no injury to the plants, and prevents the lodgment of greenfly. Growing Fuchsias, Verbenas, Calceolarias, and other plants too numerous to mention, get infested in this way, and they are all similarly treated. It is a trying time for the Villa gardener, especially if his business avocations call him away from home during the day. Occasional syringings during the day are of great value to the plants, but they do not entirely prevent the congregating of greenfly on the leaves. If Fowler's insecticide is not ready to hand, or cannot be obtained, an excellent wash can be made by mixing ½ lb. of soft soap in a pail of hot water, and immersing the plants in it when cool enough.

To revert for one moment to the pinching back of the show Pelargonium, the aim of the cultivator should be to form a handsome bush. There should be one or two main shoots rising up in the centre; and the same should branch a little outward round the plant. In order to give a nice bush shape to a Pelargonium plant, it is customary to tie a piece of matting round the pot just under the rim, and then gently tie the outside shoots down to it. This needs to be done with great care, but it greatly assists the production of handsome specimens for show purposes. The plants when so tied need to be turned round occasionally, so as to present all sides of the plant to the light, and thus secure a uniform growth.

FUCHSIAS.—These are most useful plants for the summer decoration of the greenhouse, and now the plants are making a quick growth they need some attention to have them in good condition. In order to have a succession, we depend on two classes of plants to supply flowers; first, on those cut back last autumn, plants of two and three years old, and secondly, on young ones raised from cuttings put in last autumn. The former are allowed to break at once into a free growth, and are not stopped back by pinching of the shoots. They do not put forth long shoots, but rather short ones, and these bear flowers with great freedom. Such varieties as Venus de Medici, Lustre, Maid of Kent, Sultan, albo-coccinea, Avalanche, and one or two others, are now coming into nice bloom, and are taking the place of Auriculas, Primula cortusoides amœna, Cyclamens, late Hyacinths, Narcissi, &c. With the Fuchsias there are Azaleas, Hoteia japonica, Zonal Pelargoniums, and intermediate Stocks, and so we shall be gay for some time to come. None of these have been forced. They have occupied a cold house, assisted only by the protection of the glass by night, and the quickening influences of what little sunshine has fallen to our lot by day. The Stocks are very charming, and are grown in threes, either white or red, in 24-pots, and they supply a good number of side shoots to cut from, besides which they emit a glorious fragrance.

The second division of Fuchsias are smaller plants, and are now passing through a season of preliminary pinching to get them into shape. This is a very simple matter. Whatever may be the shape of the plant, pyramidal, bush-like, or standard, it is well to have them as symmetrical in appearance as possible; for it is a decided advantage to have a well-grown and flowered plant combined. By pinching back the leading shoots on that part of the plant well furnished with wood, it induces a growth on that part which is more naked, and so gradually produces a level surface. By keeping the naked parts of the plants nearest the light, the object aimed at is in part secured. In the case of pyramid and bush plants, it is well to have a main stem or leader, and then to keep the shoots regularly distributed about it. There is another advantage in growing nice regularly clothed plants—that they are very useful for exhibition; and, as flower shows are springing up on every hand, there are many inducements held out to Villa gardeners to display what they can do in the way of plant culture.

There is scarcely a season of the year when the Villa gardener is not required to exercise a little forethought, and, by looking ahead, prepare in time for some flowering plants to be in season. It seems out of place to be writing of preparations for the autumn before the summer has commenced, but the gardener must live almost as much in the future as in the present.

THE CHRYSANTHEMUM.—This has been well termed the queen of autumn flowers, and nearly every Villa gardener who has a little accommodation is growing a few plants on to yield him pleasure in the proper season by-and-by. With this purpose in view, we are growing on a few Chrysanthemums in large 60-pots—cuttings struck in a little heat early in March. They are now kept a little closer, so as to encourage them to make growth, and are comfortably housed in a frame, with a little air given by day and the plants shaded from the sun. They will soon be ready to shift into 48-sized pots, and afterwards into 24's, in which size they will be flowered. We prefer to grow on a few nice young specimens each year rather than trust to plants that bloomed last autumn. These have been planted out in odd places—viz., in the border, against a dead wall, a fence, &c.; and a good hole having been dug for each, and some manure placed about the roots, they will grow and flower well.

When the smaller plants are somewhat established in the 24-sized pots they will be plunged in ashes up to their rims during the summer, and kept well watered at the roots and sprinkled overhead—the head of flower in the autumn depends so much on the careful attention the plants get during the summer.

Garden Operations.

PLANT HOUSES.

PLANT STOVE.—The abundance of flowering plants that come in at this season of the year, sometimes causes us to forget that later on towards the close of summer flowering subjects are scarce enough, especially such as can be made to do duty for conservatory decoration, for although at that time the attractions of the flower-garden out-of-doors in some measure make up for any deficiency in the plant-houses, and the great variety of fine-leaved plants now used in warm conservatories are permanently attractive, yet at all times a moderate number of blooming subjects are indispensable, and at no season is there a greater paucity than during August and September, to provide for which means should at once be taken. There are several old-fashioned tender annuals that are now much neglected, or often sown so early as to be over before the time when they would be most useful. Amongst these are the Globe Amaranthus (red and white), the still more effective Celosias, that have been so much improved of late years, and the old nearly-allied Cockscomb. There are few more useful plants for decorative purposes than these. As the plants will be thrown away as soon as they have done flowering they can be stood close in amongst other things, without any consideration as to the injury they would receive, as in the case of plants of a more permanent character. If seeds of all the above are at once sown and well attended to through the summer they will fully repay the labour bestowed upon them. The principal things to be observed, to produce them in good condition, are, that from the time the seeds are up onwards they must never be neglected as to the requisite pot-room, water, and standing close to the glass, so as to secure a dwarf condition in the plants; and to keep them perfectly free from insects, especially red-spider, for although thrips and aphides will live upon them it is the former pest that is most to be guarded against, otherwise it will quickly disfigure the leaves, in which case the plants are useless. A low pit, where they can be kept close to the glass and be regularly syringed every day, is the best for them. The advantage of growing a moderate number of such things as these is, that after being useful at a time when there is not much choice they take up no room in the winter.

Bouvardias.—These most desirable continuous flowering plants are deserving of a place in every garden where there is the means of growing them; the reason they are not oftener met met with is evidently similar to that which prevents the general cultivation of the equally desirable Cyclamens. Both plants to do them well require special summer treatment—Bouvardias succeeding as indifferently where attempt is made to grow them amongst a general collection of stove plants, as the Cyclamens do with ordinary greenhouse stock. Bouvardias that have flowered through the winter should now be cut close in and placed in a brisk moist heat. A low light pit with a tan bed, or a garden frame on a dung bed, if the

heat is kept up will suit them well; syringe overhead daily, but do not give too much water to the roots. Under such treatment they will break quickly, when they must be shook out and put in pots that will just hold the roots, using a mixture of good turfy loam to which add one-third of leaf-mould and rotten dung in equal proportions, with a fair sprinkling of sand; in this they will make roots rapidly. It must then be determined whether they are to be grown through the summer in pots, or be planted out and transferred to pots in the autumn; if in pots they will need them about 8 inches in diameter, if planted out, ordinary frames in which they will be close to the light will be the best: plant them in soil similar to that advised for growing them in pots. After this sun-heat will be sufficient for them, encouraging growth by shutting up early, and giving a sufficiency of water to the roots. Syringe regularly and freely overhead. One-year-old plants from cuttings struck a year ago are more suitable for this treatment, and more desirable in every way than larger old stools. The stock should be kept up and increased so far as necessary by propagation. At this season root cuttings will with many be found the most satisfactory. Place them singly in small pots, remembering that the largest, strongest pieces of root will usually make the best plants in the least time. They should have a brisk heat, and be pushed along quickly, and if planted out as soon as large enough in soil similar to that advised for the cut-back stools, they will make double the progress to that obtained in pots. Treated thus during the summer and placed in 6 inch pots in the autumn, with a temperature through the winter of from 60° to 70° in the night in a light situation, Bouvardias will afford a continuous and plentiful supply of fragrant flowers, such as no other plants with which I am acquainted are capable of producing. Gardenias that were cut back some weeks ago will by this time have broken into fresh growth, and should now have a portion of the old soil removed, and be put in pots proportionately larger according to the quantity of roots they have. Cuttings of these plants that are well-rooted should be potted off, and have the points of the shoots pinched out to keep them bushy. The dwarf-growing G. citriodora is a very desirable plant, and whatever kinds are grown, they are more useful in a moderate size than when larger. *T. Baines.*

Orchids.—Now that the majority of the subjects in the various divisions will be either making growth or blooming, it will be necessary to raise the temperature by night as well as by day, and to this end let the figures now given be understood to represent the readings it will be advisable the thermometers should give at 6 A.M., such readings of course indicating that the houses have each lowered several degrees since they were left the previous evening, say at 9 P.M. East India house 70°; Dendrobium-house, 65° to 70°; Cattleya-house, 63° to 68°; Odontoglossum-house, 55° to 60°. In the morning the fire should be put on for a short time, so as to raise the temperature a few degrees, but be careful that no more fire-heat is used than is absolutely necessary; at all times have regard, however, to the state of the weather, and if it promises to be clear and bright let the fire be stopped as soon as the temperature rises a degree or two, and let the sun-heat accomplish the remainder. On such occasions as these let a little air be given on all the bottom ventilators, so that the temperature may rise more gradually, and being put on before the houses have attained a high range of heat, they steadily rise, and the feeling of such houses though the glass may be going up is altogether different and more pleasant than where the houses are kept closed till the thermometer indicates a certain reading, and then a lot of air put on, which often lowers the temperature considerably or causes it to remain at a standstill. Saccolabiums, more especially S. guttatum, retusum, præmorsum, curvifolium, and ampullaceum, will now be coming into flower; the two latter, being small growing ones, are very useful when grown in baskets and hung up in the East India house; they seem to enjoy the extra light, and will grow and flower very freely. The spikes of all these as they grow must be kept free from injury, for the points of these in a young state represent a good part of the spike, and if broken or bruised the spike will be short, and its beauty on this account considerably lessened. Where any of these long-spiked species, as also Aerides Fieldingii, Lobbii, affine, or Veitchii, are required for exhibition, it will be found that by standing them in the Cattleya-house just before the flowers commence to burst that those which open first will remain fresh till the whole of the spike is out, and will give much greater pleasure and satisfaction than when the first flowers are over before those at the end of the spike are developed; at the same time, by being placed in a lower temperature, they are better able to stand the travelling and exposure that are incidental to exhibiting. Burlingtonia venusta, fragrans, decora, &c., should be grown in baskets in peat, moss and crocks, and hung up in the Cattleya-house. Here they will grow and root freely, the latter seemingly preferring to be outside, where they may be continually moistened. The flowers, which appear in May and June, are sweetly scented and hang round the baskets in an exceedingly attractive manner. B. candida will succeed best if placed in the East India house, as it enjoys a higher temperature than the others. Where any of the Dendrobiums have been placed in a cooler house whilst in bloom, as the flowers fall and fade away bring them back into the growing house, that they may have a good strong start, and thus ensure every prospect of a stout, short-jointed, and healthy young bulb. This matter of taking the flowering plants into a cooler house, whilst it certainly has the effect of causing the flowers to remain fresh a little longer, is sometimes attended with consequences which are very injurious, for the check the plants receive often causes the breaks to come away weak and spindly, and as a result the new growth is often smaller than the previous one, and so what has been gained in time one season is often lost in number and quality the season following. The curious D. senile will be found to succeed best on bare blocks, and if hung on the shadiest side of the Dendrobium-house and kept well syringed it will grow very vigorously, and in the early spring flower freely from the new growths. Lycaste Skinneri will now be commencing to grow, and though usually classed as a cool Orchid it will be found to succeed best where it can enjoy a little more heat than is advisable for the New Grenadan Odontoglossums; therefore, if a house is at command where the temperature ranges between the figures before given for the Cattleya and Odontoglossum-houses, let them be placed there, and strong bulbs and leaves will reward all the care that is bestowed upon them. *W. Swan, Fallowfield.*

FRUIT HOUSES.

Orchard Houses.—The early varieties of Peaches such as the Early Beatrice and Early Louise will now be about colouring, if forced in pots in the earliest house; too much watering therefore at the roots must not be given till the fruit is ripe and all gathered. Other later ripening varieties of Peaches swelling their fruit, as well as Nectarines and Apricots, will, however, want frequent attention in watering, so that the roots may not get too dry. Should there be any Strawberries grown on the shelves the pots should all be removed as soon as the fruit is gathered, for the plants will only bring aphis or red-spider to the fruit trees. In the unheated houses, where the trees have set their fruit too thickly, they may be well thinned out now, and if making vigorous growths in the young shoots they should be well pinched back and some removed where too thickly placed. When all danger from frost or cold winds is over some of the Pear trees may be turned out-of-doors, all those with the least fruit set upon them being turned out first. As the season advances, Plums and any pots of Peaches and Nectarines not very well cropped may likewise be put out in the open air. This will give all the other trees a good chance of ripening their fruit well, for the sun and air cannot give the fruit the proper flavour and quality where the trees are grown too crowded in the house. The aphis often increases with amazing rapidity at this season of the year, and especially during the time when the cold north-east winds keep vegetation from progressing; fumigation with tobacco must, therefore, be resorted to, and the syringe be used daily to keep the red-spider down. The use of weakened sewage water now and then applied to the roots will help the trees to grow vigorously after all the fruit is set. *William Tillery.*

Vines.—Grapes now commencing to colour should have the full advantage of air on all favourable occasions, in fact, unless the weather is extremely cold or windy, it is better to allow a moderate amount of air night and day, giving a little more fire-heat if necessary to keep the temperature up to the heat required; at the same time atmospheric moisture should be moderated by damping down earlier in the day, and, where necessary, watering the inside border for the last time previous to the fruit ripening. The application of water to the roots during the later stages of ripening should be avoided, as this and a damp stagnant atmosphere in the house is liable to cause the more thin-skinned varieties to crack. Where Grapes are grown in quantity this will now be a busy period, the successional houses requiring daily attention as to stopping and tying out. Where the breaks are regular only one shoot should be allowed to grow from each spur, rubbing off all superfluous buds when 1 to 2 inches long, as at this stage the best placed and most fruitful shoots are readily selected. Where two or more clusters are shown, the bearing or side shoots should be stopped at the succeeding joint above the fruit, and of the clusters produced only one should be retained on each shoot; these will again require reducing at discretion after the fruit is set. Vines in bloom will require a temperature of 65° to 70°, keeping the house somewhat drier for a few days. Muscats and some few other kinds not setting freely should be gently shaken each morning as soon as the damp has been removed by ventilation, in some cases it is also advisable to collect on a sheet of paper the pollen of the free setting kinds and dust it over those requiring artificial aid. Vines in pots intended for early forcing should now be in vigorous condition and require watering two or three times a week with good liquid manure. Keep them as close to the glass as their well-doing will admit, stop all laterals at the first joint, and give every encouragement to get the Vines well matured as early as possible, so as to get a proper period of rest during the autumn. The same remarks apply to plants grown from buds during the present season, these should not have an excess of heat during the younger stages of growth, until the roots are well established in the pots they are intended to be grown or fruited in; plentiful ventilation, and a temperature not exceeding 60° by night, will be sufficient to produce strong short-jointed canes. *W. Cox.*

Pines.—In those houses which contain plants with fruit considerably advanced in growth hard firing will be necessary at night occasionally during the present changeable period, which, in conjunction with the bright hot days which oftentimes follow, or else by such as are even more troublesome for ventilating as those which embrace temporary periods of intense sunshine, it is meet to note the rigorous attention that is required to the heating and airing appliances under these circumstances, so as to avoid extreme conditions under which more or less injury would probably arise. Whenever the external appearance prognosticates favourable omens turn off the supply of hot-water early, so as to cool down the pipes before powerful sunshine comes in contact with the plants, and slightly ventilate betimes to allow the superfluous moisture to escape. No pains should be spared to keep the roots in an active and healthy state about those plants which will shortly finish off the fruit. See to the watering at least once every week, and, in the case of plants in small pots, about twice during the same period lightly syringe them overhead occasionally, selecting bright days for this purpose, and doing it at the final closing of the house for the day. As light and heat increase so likewise should the temperature about young-growing stock be proportionately raised. March-started suckers will soon be fit to be transferred to fruiting pots. Whilst these are in the present pots be careful that they do not lack a plentiful supply of water, which will be necessary in the case of healthy plants every three or four days. If it be necessary to disturb any of the beds at this season be careful that in so doing too much heat is not excited, especially where well-rooted plants are plunged. Take advantage of inclement weather to prepare pots, soil, &c., in readiness for immediate use whenever required. *G. T. Miles, Wycombe Abbey.*

HARDY FRUIT GARDEN.

It will now be safe to remove all coverings from wall fruit trees, after which a considerable amount of disbudding may be ventured upon with Apricots. All foreright shoots should be entirely removed. A sufficient number of the side shoots must be left at full length to keep the tree well-furnished, and the remainder stopped to form fruitful spurs. I am afraid I need not say much about thinning the fruit, as I perceive to-day that a great number of fruits which had apparently set well have been thrown off as soon as warmer weather affected the flow of the sap. The disbudding of Peaches and Nectarines will claim careful attention at once. In removing such shoots as have a fruit at the base, it is best to leave three or four of the lowest leaves. Take care to leave a sufficient number of shoots at full length to give the operator a choice for filling vacancies when the nailing-in commences. Plums when in active growth have often a tendency to throw out very strong, luxuriant shoots. This should be checked in time by their entire removal, unless any are required to fill vacant places, in which case they should be stopped when about 6 inches long, which operation must be repeated from time to time if they show a tendency to rank growth. In spite of all care in taking timely remedial measures, the Gooseberry caterpillar will often make its appearance about this time, and must be held in check by constant hand-picking. If the trees are low, and some stable litter can be spared, it is excellent practice to cover the whole surface under the trees with it, to break the force of heavy thunder showers which often splash up an amount of dirt upon the lower fruits, which renders them utterly unfit for table purposes. If the Strawberry beds have not been cleaned and dressed as before directed, no time must now be lost in covering the surface of the soil between the rows with clean straw, or the best of the stable litter, to prevent evaporation in the first place, and by-and-by to form a clean surface for the fruit to rest upon. Water in quantity will now become a necessity, and the need for its application will depend upon the weather. *John Cox, Redleaf.*

THE

Gardeners' Chronicle.

SATURDAY, MAY 6, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, May 9—Sale of Orchids, at Stevens' Rooms.

WEDNESDAY, May 10—Royal Agricultural and Horticultural Society of Jersey: Spring Show. Glasgow and West of Scotland Horticultural Society's Summer Show. Sale of a Collection of Orchids, at Stevens' Rooms.

THURSDAY, May 11—Sale of Plants at the Pine-apple Nursery, by Messrs. Stevens (three days).

ONCE more a GREAT INTERNATIONAL HORTICULTURAL EXHIBITION and BOTANICAL CONGRESS at Brussels have been successfully carried out, and the fact should serve as a reminder that our turn to inaugurate a similar meeting will soon come round, if indeed it be not at hand at once.

At the inaugural meeting of the jury, presided over by the Comte de RIBAUCOURT, President of the Flora Society, the following appointments were made:—President of the Jury, Dr. REGEL; Vice-Presidents, Dr. KARL KOCH, the Marquis DELLA VALLE DE CASANOVA, Dr. D. MOORE, M. PLANCHON, Prince P. TROUBETZKOI; and Secretary, Professor E. MORREN. The jury was further divided into fourteen sections, each consisting of a President, Secretary, and three or four members. Thus the first division had charge of the twenty-four classes devoted to new plants, and consisted of Professor KOCH, President; MORREN, Secretary; and MM. THIBAUT and A. VERSCHAFFELT. The classes 52—63, devoted to Orchids, were judged by Professor REICHENBACH, as President; KEGELJAN, Secretary; and MM. BERGMAN, Count DE BOUSIES, ROLLISSON, and VEITCH. Palms, Cycads, and Pandanads came under the jurisdiction of Prince TROUBETZKOI, as President; M. WENDLAND, Secretary; and MM. DELADEVANSAYE, NIEPRASCHK, RAVENÉ, and WITTE, and so on.

The exhibition was one of which our Belgian friends may well be proud, so excellent, as a general rule, were the products exhibited. We may also fitly congratulate them on the celerity of their proceedings, especially in the matter of the publication of their catalogue, a great contrast to some exhibitions on the Continent. In Palms and large-foliage plants the home-growers had the advantage, and the influence which a few noble objects of this class has on the pictorial effect which is realised is very great. In the case of Indian Azaleas, again, which were largely represented, the home-growers were able, under the influence of treatment or climate, or both, to produce plants which were superbly flowered, and superior in this respect to anything we are accustomed to see amongst ourselves. On the other hand, Orchids and Roses, notwithstanding the perils of transit, were most fully illustrated by the English growers, and Hyacinths by the Dutch.

It is difficult to draw a word-picture of so extensive and comprehensive a display, the detailed particulars of which will be found on another page, but we may try to give some faint idea of its arrangement. The building is constructed with a nave and two aisles on either side. It stands nearly north and south, and is entered near the northern end. Here was fixed a very large looking glass, by which the actual length was apparently doubled; in front of it was a fine group of Azaleas, while right and left were two of the noble Palms from the Duchesse D'AREMBERG'S garden; and close by, on the left of the nave, looking south, was another grand specimen, fully 20 feet high, from the same collection, supported by a bank of foliage plants. Beyond a considerable group of Azaleas formed a bright-coloured spot, contrasting with foliage-plants and Aroids which followed. Then came Mr. WILLIAMS' miscellaneous group, a considerable portion of which consisted of plants in flower; then more foliage-plants, Marantas, &c., and several tall Tree Ferns in the distance. Sinuous paths led between the plants in the nave and two left-hand aisles and then crossing near the centre, serving to give access to the objects shown in the right-hand aisles; these were bordered by an edging of basket-work, which was nailed to the floor. On the right, occupying the first aisle, and projecting somewhat into the nave, were two remarkably fine groups of Palms from the establishments of M. LINDEN and M. VAN HOUTTE. These reached nearly half the length of the building, and blocked out from view the enclosed heated portion devoted to tender plants; while to the north of them, filling out the end of the aisle, was the other portion of the Duchesse D'AREMBERG'S fine group of Palms. These groups were finished off in front by some of the best Souvenir de la Malmaison Carnations ever seen, by Rhododendrons, small Azaleas, and small Palms, and further by Mr. WILLS' Dracænas. Then came some grand specimens of Angiopteris, sent from Amsterdam by M. WILLINCK; further on, a very fine Fan Palm from M. LEMONNIER; and at the end another looking-glass with a fountain in front of it bordered by bright-coloured Amaryllis—some of the intermediate central space, near the south end, being occupied by Roses, hardy Azaleas, &c. In the aisle to the right beyond the Palms were some glorious Azaleas from M. GHELLINCK DE WALLE, the second or outer aisle being chiefly filled by Roses. The northern half was enclosed and warmed for the reception of the Orchids and new plants.

In the aisle to the left of the nave was a fine lot of Azaleas from M. VERVÆNE; then a tall block of mixed Palms, Cycads, &c., from M. LINDEN. The left corner of the second aisle was devoted to stove and greenhouse flowering plants. By the wall were placed banks of brilliant Hyacinths, Tulips, &c., and beyond these Roses, with more Hyacinths and Tulips following. Facing this was Messrs. VEITCH & SONS' fine miscellaneous collection—one of the chief ornaments of the show, and set up with remarkably good taste. Beyond these was a patch of Rhododendrons, and an interesting group of officinal plants, the southern corner being filled by a group of large-foliage plants. In the middle aisle, beyond M. LINDEN'S Cycads, were a sparkling bunch of Hyacinths and Tulips, set closely together on a steep incline, which form displays them to advantage. Here was a showy group of varieties of Azalea mollis, a nice group of Yuccas and Agaves from M. BEAUCARNE'S collection, opposite to which was another fine bank of Azalea indica.

The walls were decorated with plans of gardens, drawings of plants, that of the enclosed portion being nearly filled with the plates from *Flore des Serres* and other publications, neatly framed. These served as an excellent relief to the bare walls.

Such, in brief, was the show—probably as high in the quality of its exhibits as any of the Internationals which have preceded it, though differing, as it naturally would do, from them all through the influence of circumstances and of locality; not quite so extensive as our own show of 1866 (at least, so it appeared to us), but large enough for all practical purposes.

With regard to honours our British exhibitors have nothing to complain of, as they have proved victorious in most of the competitions open to them. The "Prix d'Honneur," awarded by the presidents of the sections, and not by the jury at large, were awarded as follows:—The 1st prize, a large gold medal offered by His Majesty the King of the BELGIANS to the foreign exhibitor most instrumental in contributing to the splendour of the exhibition, was unanimously awarded to Mr. B. S. WILLIAMS. A second gold medal, offered by H.R.H. the Count of FLANDERS, was awarded to Messrs. VEITCH, and a third was bestowed on Mr. BULL, for the scientific interest and value of his collections. The corresponding prizes offered to Belgian exhibitors were as follows:—First prize, a gold medal, offered by the Queen of the BELGIANS, to M. LINDEN Second prize, a gold medal, offered by H.R.H. the Countess of FLANDERS, to M. VAN HOUTTE. Third prize, a large gold medal, to Madame LEGRELLE-D'HANIS. In addition to the above, a gold medal was awarded to Messrs. VEITCH for a collection of plants sent not for competition; and a large gold medal to the architect and designer of the exhibition, M. FUCHS—a patronymic that should be dear to all lovers of the Fuchsia!

Among the more important prizes gained by our exhibitors were several gold and other medals to Messrs. WILLIAMS and BULL, for new plants; to Mr. WILLS, a gold medal, for twenty-five Dracænas, and similar awards for several new varieties of the same genus. Mr. WILLIAMS also took the large gold medal of 1000 francs for twenty-five Orchids, two gold medals for Ferns, including one by "acclamation" for twelve Filmy Ferns. A silver-gilt medal was assigned to Mr. TURNER for his Auriculas. Four gold and one silver-gilt medal fell to the lot of Mr. W. PAUL, of Waltham Cross, for various collections of Roses. A silver medal for a collection of Apples was assigned to Mr. JONES, of the Royal Gardens, Frogmore.

Of the warm reception given to the foreign visitors in general, and to the English in particular, too much cannot be said. Customs and institutions vary in different countries. In Brussels, the exhibitors and the members of the jury and the Congress were hospitably entertained by the authorities. They were invited to a reception (*rout*) in the Town Hall by the worthy Burgomaster as soon as they set foot in the city. After the opening, a select but by no means inconsiderable number were invited to the palace, where they were most graciously received by the King and Queen, and had the honour of dining with their Majesties. Then came the grand banquet given by the Flora Society, under whose auspices the show took place. At this banquet Mr. B. S. WILLIAMS, as the representative of the British exhibitors, acknowledged the cordiality of the reception given by our Belgian friends. At this banquet also M. LUBBERS, the Secretary of the Society, was decorated, by Royal authority, with the insignia of the Order of Leopold. All this, besides much private hospitality, will not soon be forgotten by those who took part therein.

In England, when our turn comes, where shall we find the parallel? We have no *gouvernement tutélaire* as the Belgians, nor, it must be said, do we require it. When the time comes individual and private bodies must make amends by their cordiality for the lack of those higher honours which Royalty in Belgium confers with so much grace on horticulturists.

Of the proceedings of the CONGRESS we can at present report only briefly. It was attended by a large number of the most eminent among the botanists who are, by virtue of office or otherwise, most closely associated with horticulture. Among them we noticed Dr. REGEL, Professor KARL KOCH, Professors PLANCHON, REICHENBACH, MORREN, Prince TROUBETZKOI, RAUWENHOFF, FOURNIER, M. WOLKENSTEIN, and a large number of others. The Congress was opened by the President of the Fédération Belge, M. DE CANNART D'HAMALE, after which M. MORREN descanted upon the horticultural and botanical publications that have been issued in Belgium since 1830. The question of the formation of a "Hortus Europæus," or authentic catalogue of cultivated plants, was then debated, the necessity for such a publication being admitted on all hands. The general opinion seemed to be tha

FIG. 107.—STAUNTONIA HEXAPHYLLA, WITH DETAILS OF THE FLOWER, ETC.

the best way of effecting this result would be by publishing a series of original monographs, carefully executed by competent botanists, and giving all necessary details without too much detail.

At another meeting of the Congress the question of the sap and its circulation was debated. The general conclusions arrived at were:—

1. That the substances in the soil made use of as food by the plant are absorbed separately by the root-fibres.

2. That each nutritive substance circulates separately and independently according to circumstances, and the particular requirements of the plant or organ.

3. That the roots have the power of dissolving solid matters in the soil, and of absorbing the solution.

4. That the application of the word sap must not be so restricted as is usually the case, seeing that the fluid in question is not uniform in composition, nor definite in its flow as to direction, intensity, &c., but varies according to circumstances.

Such were the principal subjects brought before the Congress, whose meeting, at first *selon regle*, became, subsequently, informal conversations of a free and easy character; so that we must await the official record before we can confirm more than the general substantial accuracy of our brief note of the proceedings.

—— Among the Orchids now to be seen in Bloom at Gunnersbury Park, Acton, there is a splendid specimen of Angræcum sesquipedale, having eighteen expanded flowers, and clothed with remarkably fine foliage to the very base of the plant. Masdevallia Harryana is in grand condition, the brilliant coloured flowers measuring 8 inches in depth. The flowers of this striking Orchid appear to wax in size as the plant gains in strength. Odontoglossum maxillare has a fine spike of beautifully perfumed flowers. Most promising are two fine plants of Odontoglossum vexillarium, which are kept in a brisk moist heat, and certainly look as if that were their proper place. Mr. Richards states that it is wrong to grow this plant in a cool atmosphere, as it causes the foliage to turn purple, and gives it an unhealthy appearance. There is also a very fine deep-coloured variety of Saccolabium curvifolium, with two fine spikes of flower. Cypripedium Stonei is in fine condition, as many as four blossoms being on a single stem. Lovers of Orchids will find much to interest them in the Orchid-houses at Gunnersbury just now.

—— Among the recipients of gold medals on the occasion of the meeting of the delegates of the French learned societies at the Sorbonne, Paris, was M. Clos, of Toulouse, well known for his writings on vegetable morphology.

—— The annual display of Rhododendrons and other American Plants from the nurseries of Messrs. John Waterer & Sons, Bagshot (which for upwards of twenty years formed such an attractive feature at the Royal Botanic Gardens, Regent's Park), will this year be held in the grounds of Manley Hall, Manchester, the property of Ellis Lever, Esq., and from the present appearance of the plants it is expected that the display of bloom will be very fine.

—— The pretty Snowy Crowfoot, Ranunculus amplexicaulis, is just now a charming object in the mixed border at the Chiswick Gardens of the Royal Horticultural Society; the flowers white, with yellow centres. It is an excellent subject for associating with the earlier-flowering Anemones in semi-wild places as well as in the ordinary flower garden. A pretty little Veronica, with a very dwarf but tufty growth, and flowering freely like an Aubrietia, well merits attention. It was found in a bog in Aberdeenshire, and is thought to be indigenous to the county; the flowers are white, the exterior lilac, and it appears as if it would be invaluable for clothing rockwork, especially where early flowers are required.

—— M. Dumas occupies 112 pages of the *Annales de Chimie et de Physique* with "Etudes sur le Phylloxera et sur les Sulfocarbonates." His conclusion (says the *Athenæum*) appears to be in favour of the use of the sulpho-carbonate of potassium as an insecticide. He states that it acts with certainty in destroying the phylloxeræ if applied to the roots of the Vines in February and March. Long since, the yellow solution formed by boiling lime and sulphur together in soft water, called by Dalton the quadri-sulphuret of lime, was found to destroy all insects upon Vines and other fruit trees.

—— The Rev. M. J. Berkeley, M.A., and Dr. Maxwell T. Masters, F.R.S., have been re-elected Examiners in Botany and Vegetable Physiology in the University of London.

—— Mr. Gray, late gardener to the Earl of Dalhousie, Dalhousie Castle, Midlothian, has been appointed gardener to the Earl of Stanhope, Chevening Place, Sevenoaks, Kent.

—— We learn from the *Journal of Botany* that the Rev. M. J. Berkeley has presented to the department of Botany in the British Museum James Sowerby's original drawings for the *English Fungi*, published in 1797—1809, consisting in all of 530. The Museum already possessed the clay models made by Sowerby during the progress of the work, as well as the original drawings for the plates of *English Botany*, in which it will be remembered the Fungi were not included. Mr. Berkeley's gift, therefore, very usefully completes the series of original illustrations of British plants in the Museum.

—— The next meeting of the Institution of Surveyors will be held on Monday evening, May 8, when a discussion will take place upon the paper read by Mr. W. H. Michael at the last meeting, entitled "The Working of the Sanitary Acts in Rural Districts." The chair to be taken at 8 o'clock.

—— Mr. Edgcumbe Rendle's Patent System of Glazing was tested on Wednesday last, the 2d inst., by Her Majesty's War Department, &c., under the direction of Lieutenant-Colonel Scratchley, R.E., Inspector of Works. A skylight, 12 feet square, was inserted in the roof of a railway shed at the Royal Arsenal at Woolwich, and a heavy stream of water was poured on it from a hose attached to the fire main. We understand it stood this very severe test admirably, no leakage whatever being observable.

—— It is not often that the magnificent Dendrobium Falconeri is seen in such fine condition as it was shown at the Town Hall, Manchester, last week, by J. Leach, Esq., Oakley, Fallowfield, whose gardener is our correspondent, Mr. Swan. The plant was growing on a block, and had over forty blooms open, and as fresh and beautifully coloured as it was possible to get it. A silver medal was awarded to it by the Council of the Manchester Botanical and Horticultural Society. Accompanying this fine specimen were about twenty flowering bulbs of Dendrobium Devonianum, some of which had thirty-six flowers; and on some of the bulbs the flowers were produced in clusters of four, five, and even six; and a First-class Certificate was deservedly awarded.

—— At most of the German agricultural trial farms (*Versuchsstationen*) — and the number at the present time is not small—there are Arrangements for Determining the Quality of Seeds, and detecting the percentage of foreign and bad seeds in samples; and we learn from the *Gartenflora* that most farmers regard it as essentially necessary to send samples of their seeds for examination before sowing. Sad facts in the adulteration of seeds have been brought to light in the laboratories of some of these institutions. Clover seed, especially, seems to suffer adulterations of the most ingenious description, among other things, fine grains of quartz, so near the size of the seeds as not to be easily detected by a cursory inspection. A sample of white Clover of 2·897 grammes contained 114 malformed seeds of white Clover, 2 of Myosotis intermedia, 1 of Spergula arvensis, 6 of Anthemis arvensis, 58 of Rumex acetosella, 29 of Plantago lanceolata, 3 of Trifolium hybridum, and 1 of Deschampsia cæspitosa. But, continues the writer, we cannot really be surprised at this state of things, knowing, as we do, from officially authenticated documents, that in England whole businesses exist devoted to the preparation of adulterations and the killing of good seed. We hope this was written before the passing of the Seed Adulteration Bill. In any case we have been led to believe that the German "seed doctors" more than rivalled our own.

STAUNTONIA HEXAPHYLLA.*

As this plant has been well described and figured by Siebold and by Decaisne, it is hardly necessary to do more here than refer to their descriptions.

For garden purposes, however, it may be well to state that we have in this climbing shrub a very elegant addition to our greenhouse or conservatory climbers. The foliage is bold, firm, deep green, each leaf consisting of five or six-stalked leaflets disposed in a palmate manner. The flowers are white and deliciously fragrant. A reference to the illustration on the previous page (fig. 107) supersedes the necessity for further description. It is only necessary to add that the flowers figured by Mr. Smith were all male flowers. The species is very like but more elegant than S. latifolia, of which we lately gave a figure (p. 245), and from which it differs in the united, not free, stamens. On the latter ground, S. latifolia is by some placed in a distinct genus—Holboellia. The present plant is a native of the mountains of Japan, at an elevation of 1000 feet and upwards above the sea. It flowers in April, and yields an edible fruit.

No doubt it would prove quite hardy in the southernmost and western counties of this island, and even farther north against a wall. We saw it in great vigour in Prince Troubetzkoi's garden on the shores of Lago Maggiore, where, during the winter, it is occasionally subjected to slight frost. For the specimen whence the illustration was taken we have to thank Messrs. E. G. Henderson & Son.

GUSTAVIA GRACILLIMA.†

For our illustration of this strikingly handsome plant (fig. 108, see p. 599) we are indebted to Mr. William Bull, who had the good fortune to flower the plant in September last. At tab. 6151 of the *Botanical Magazine*, Dr. Hooker appropriately speaks of this as a superb plant, with leaves 13—18 inches in length by ¾—1 inch in width. The flowers are 4 inches in diameter, rose-red, produced in the young plant from the leaf axils; from the older plant, solitary or in pairs, from the old wood. The tree is a native of New Grenada, whence it was sent home by M. Roezl. It is as remarkable for its botanical structure as for the great beauty of its flowers. By Messrs. Bentham and Hooker it is placed with Myrtaceæ, but if so it is certainly an aberrant form of that large order. It is decidedly one of the finest of recently introduced stove flowering shrubs, and let us hope it will be as tractable under cultivation as it is superb in beauty.

Home Correspondence.

Nature's System of Rotation.—In that portion of the Derbyshire moors where millstone grit is exposed, and the whole of the surface soil consists of the waste of the grit rock, giving naturally a highly silicious soil, of slight depth where resting on the more level portions of the moor, but deeper on the hill-sides and valleys, where it is intermixed with the masses of rock that, displaced from the hills above, lie in wild confusion down the abrupt slopes—over this wild upland district there exists, and has done from time immemorial, a vegetation thoroughly characteristic of such a bleak, poor, mountain region. There are even still spots so barren that claim only the pioneer vegetation of moss and lichen that converts or adds by its slow persistent growth and decay (borrowing rather from the atmosphere than the earth it rests on the nutriment that sustains it) to the poor sand, an amount of vegetable matter that in process of time changes the sand into the soil we call peat. In certain places this process of preparation is yet in action, but over a large extent of this region the elaboration of vegetable matter and the conversion of the soil was accomplished long ages ago, and on the land thus fertilised, Heath, Vaccinium, Empetrum, and Fern, found congenial resting-places, and these plants have flourished in their turn thousands and thousands of years, and have fed countless flights of grouse, have suffered decay, and have added another layer to the vegetable deposit begun by the humble moss; and now it appears, from circumstances shortly to be mentioned, that, as the lower forms of vegetable life give way to plants of superior organisation, so the Heath and its allies must give place to another phase of vegetable existence that, incapable of finding support at an earlier period,

* Siebold and Zuccarini, Flora Japonica, i., p. 140, t. 76 (1856); Decaisne, in Arch. Mus. i. 192, tab ii., c.

† Miers in Trans. Linn. Soc. xxx 181; Hook. fil. in Bot. Mag., t. 6151; Bull. Cat. 1876, c. ic. hic iterat.

has found at length a soil adequate to its requirements, and thus we see an invasion of succulent and nutritious grasses spreading mostly over a territory prepared for them. At this time on the Longshaw estate in Derbyshire there are many hundreds, if not thousands, of acres of land formerly thickly covered with Heather now occupied with grass, which seems annually to spread more widely and increase, displacing the plants that have so long clothed the surface of the ground. The extinction of grouse and black game will be the inevitable consequence of this change in the character of vegetation, and naturally this evolution of vegetation is looked upon with alarm by the proprietor, whose preserves of grouse have long been famous.

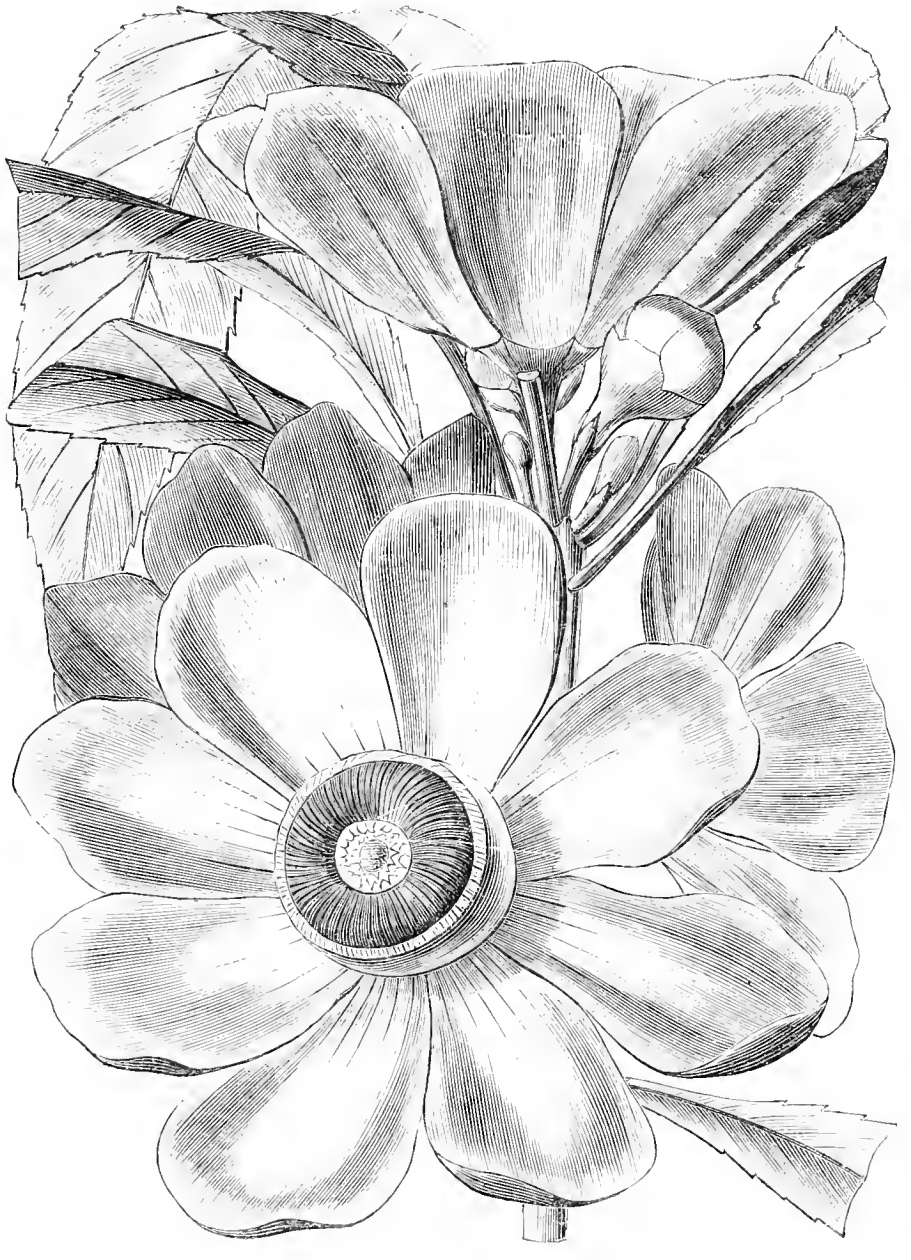

FIG. 108.—GUSTAVIA GRACILLIMA.

We have here an instance of the manner by which land in a state of Nature is progressively fertilised, and we are taught that rotation of cropping is in accordance with her law. Her processes are slow, extending over thousands of years, time is all her own, while we, ephemeral creatures, borrowing her lessons, must hasten the work of preparation, and do many times in a short life what is done by the action of blind, unprescient forms only in periods of time hardly within our powers of computation. The Danish peat bogs record successive forests of Pine, Oak, and Beech, our woodlands have supported moss and lichen, Heath, Vaccinum, Birch and Pine, and Myrica Gale, and now another form appears which seems destined to displace all these. It is interesting to have the opportunity of observing the change on the wild moors of Derbyshire. I have had an opportunity of observing that land that has been reclaimed and converted into pasture may, under the operations of certain circumstances, revert to a normal state of barrenness. On the marl-stone plateau in Lincolnshire there is a large open space of grass that has been fed off for many years without dressing; the soil has become perfectly extracted. Grass eaten closely by sheep and beasts and rabbits has in places almost ceased to appear, and is replaced by moss and a small Juncus. *W. Ingram, Belvoir.*

Carpet Sedums.—The spring is again demonstrating the value of the dwarf hardy Sedums as carpet or covering plants, either for beds or for bare spots, and not least for the formation of edgings instead of turf in places where turf will not thrive. Ordinarily classed as rock plants, it is certain that these Sedums are much more at home where the soil is good and moisture fairly abundant. Not least, they have a permanent character, to which many other carpet plants cannot lay claim, and only need occasional lateral checks to keep them in place and in line. For the production of a dense carpet of mossy green the Sedum Lydium may almost vie with the richest of grassy verdures, although, perchance, it would scarcely adapt itself to the games of cricket or croquet. But it is not proposed to advise its use for lawn-making, although, perchance, it would be productive of better results than have some of the substitutes for grass that have had their day. There are many spots about gardens, under the drip of trees, or on slopes not available for the machine, or on terraces, or in many places where grass is invariably unsatisfactory, where the Sedum Lydium would almost always present a dense carpet of mossy green, never requiring either scythe or mower, but it will bear a light rolling without danger, and with an occasional trimming at the edges will keep firm and solid for a long time. Sedum glaucum is not less amenable to this form of cultivation, but is, perchance, less adapted for the purpose because of its silvery hue; but where contrasts are desired it may be used with equal advantage. An extremely dense and pretty kind is S. corsicum, and it is even more glaucous than the preceding kind. It is not quite so free, but it makes, if possible, even a more compact mass of carpet foliage. Either of these kinds, if small pieces be pricked out thickly now, will soon run into a perfect carpet, and, if desired to be extended materially, the pricking out may be continued in the autumn with advantage. Where a good breadth has to be done the soil should be worked deep and fine on the surface, and then a plank of wood laid at the edge to stand on for commencing the pricking out, and the plank continued to be moved on the Sedum as the work proceeds. In this way the surface is pressed firm and even until all is completed. Whilst the three above-mentioned kinds are effective for summer use as well as for winter, the charming S. acre aureum should especially have a place where its beauties may be displayed in the winter and spring months. During the summer it is a mass of flowerless green, but in the winter the young growth assumes a bright creamy tint, and the contrast is very striking. Gardeners in want of a novelty in winter bedding might find one in these four kinds of Sedums by having a broad, slightly-raised edging of Sedum acre aureum, a centre four-pointed star of S. Lydium, with any effective hardy plant in the centre that may be available, and the remaining angles filled alternately with S. glaucum and S. corsicum, or any other arrangement that might suggest itself. *D.*

Maréchal Niel Rose.—I have cut some magnificent blooms of the Maréchal Niel Rose, and as my mode of treatment of the plant differs from all that I have seen or read of, I send you the following particulars. The Rose is planted in the front of a raised border under a flower stage in a vinery (greenhouse) being double worked on an old stem of Solfaterre budded on a Brier; it is grown on a single stem to the height of about 6 feet from the ground, and each year, immediately after blooming, it is cut back to two single eyes, which grow (trained to a wire east and west) in the course of the summer and autumn to the length of about 20 feet each way, and in the early spring (about February) these shoots are shortened to about 10 or 12 feet when the buds start into growth and very shortly show their bloom-buds, which, where more than one, are thinned out to a single one, of which this year there are about eighty, and those that have already bloomed have been of an enormous size. It is, of course, necessary to keep the plant well supplied with nourishment, but the treatment I have here described has been adopted most successfully for the last six or eight years. *Mush Hadham, Herts.*

Grape Vine Sport.—I have been looking with interest for some further account of that remarkable sport Mr. P. Grieve, of Culford, described in the *Gardeners' Chronicle* for January 2, 1875, p. 216. What has become of it, and what is the result of his further experiments? I think it would interest many of your readers if he were to reply to this in your columns, where the "*litera scripta manet.*" *W. Marshall, Ely.*

Fruit Tree Protection.—We are again experiencing the changes of an English spring, and although up to the present the crops of fruit have not been injured by frost a considerable time must elapse before the danger of a nipping frost has passed. It is, of course, impossible, except at a very great cost, to provide for the protection of fruit trees on a large scale, but a considerable amount of fruit may be secured on a small scale by the following means, which, I must premise, can be employed only by those who cultivate fruit trees in pots. My suggestion consists in the very simple plan of laying down the trees and covering them with mats or any other cheap material on frosty nights, treating the trees as Potatos and other tender spring crops. To provide for the efficient protection of many trees I should recommend the erection of a brick pit, with walls of 4 inch brickwork, from 6 to 8 feet wide, and 3 to 3½ feet high. Poles to carry mats, or straw mats, can be laid over a pit of this size. Trees in 15 to 18-inch pots can be laid down and safely sheltered in a structure of this kind, which would cost little to build, and would be permanent. As it rarely happens that a severe spring frost lasts more than three days the trees would take no harm if not set upright for this interval. For the

culture of Pears and the best kinds of Plums the pots should be perforated in the sides with holes about an inch in diameter, and the trees pruned as flat pyramids. When placed in their permanent summer quarter they should be plunged over the rim of the pots in good soil. The roots will find their way into the border when they require more nourishment. In the autumn, as soon as the fruit is gathered, the summer roots should be cut away, and the soil renewed in the pots. During the winter the trees will feed on the fresh soil, and will be in condition for blooming and setting fruit in the returning spring. *T. F. R., Sawbridgeworth.*

Cockroaches.—With reference to the application of plaster of Paris for the destruction of these plagues, as described in last week's *Gardeners' Chronicle*, will your correspondent "O." kindly explain the function of the copper sulphate? As the process in its simplest form, *i.e.* with plaster and *aqua pura*, clearly involves the effectual asphyxiation or starvation of the insects, what need for a double-barrelled remedy? The plaster once hardened into stone, will, I imagine, prove an effectual obstacle to any escape. *W. T.*

Market Gardeners and the Income Tax.—I venture to call the special attention of your readers engaged in the business of market gardening to what appears to me a most unreasonable construction of the Income Tax Act to their prejudice. A tenant in the trade being charged 2*d.* in the pound, and that not upon his rent, but upon profits assessed at a much higher ratio, I called for an explanation, and was informed by the surveyor that the market gardener was not charged as a farmer, 1*d.* in the pound of rent, but as a market gardener, 2*d.* per pound on his supposed profits. Now what is a market gardener but a farmer of land? What does he grow and sell but farm produce? Why is he to pay for growing Turnips, Potatos, Beans, Peas, Cabbages, more than double the tax exacted from his very next door neighbour for rearing exactly the same produce? Does the farmer grow nothing besides grain crops? How should this exempt him from a tax on the profits of those crops which he raises in common with the market gardener? The latter often rests his land by the same course of cropping. There are farmers in Surrey who grow nothing but Carrots, which are all retailed to the greengrocers. Why do they pay 1*d.* and the smaller cultivator 2*d.*? Walker defines "Farmer, one who cultivates hired ground." A market gardener cultivates hired ground, *ergo* he is a farmer. Is it said he grows for market, what else does a farmer? The plain fact is, Jacks-in-office clap a nickname on him, as a cloak for cheating him. Where the market gardener grows one acre of Potatos or Peas, a farmer grows fifty—why is the latter, competing in the very same market, to pay only half the taxes of the former? I have no personal interest in this matter, being taxed only on the property I let, but owners are called upon to help their tenants in this regard, and I think tenants should do themselves justice by meeting and interviewing the Chancellor of the Exchequer. The distinction raised by the surveyor is a very shabby difference. By the way, if market gardeners are charged on their profits, are not all who earn less than £150 a year entirely exempt? *Sidney Smith, The Manor, Feltham, May 3.*

Keens' Seedling Strawberry.—Some few months ago one of your correspondents was writing disparagingly in your columns of the above Strawberry, amongst other faults charging it with being insipid, and consequently worthless. By way of giving an old friend a "lift up," I herewith forward for your inspection a fair sample of fruit of Keens', such as I have picked, more or less, these last ten years. I do not lay claim to their being any better, nor perhaps so good as many other gardeners grow, but I think I can safely leave it to your judgment as to their insipidity. I may add that the fruit sent are part of a heavy crop, and have been grown and ripened in a high temperature, consequently have not had such a good chance of getting their flavour brought out as if they had been in a cool temperature for a few days. *H. J. C., Grimston Garden, Tadcaster.* [By no means insipid. Eds.]

Allotment Gardens.—In answer to Mr. R. Binns' inquiry on above subject, at p. 573, I beg to offer the following information, which may be of some use. On Lord Stafford's estate here, such gardens are let from Lady-day to Lady-day, and the rents are received once a year in August. The management and cultivation of the plots are left entirely to the tenants, who are not interfered with so long as the ground is fairly well attended to. In case of neglect or default in paying rent a six months' notice to quit is given at Michaelmas, but this is rarely found necessary, the possession of a plot being highly esteemed and the demand for them very great. Where there is a considerable number of such tenants, as on this estate, it will be found convenient to hold the audit at a respectable inn. On paying his rent each tenant takes a ticket, for which he receives a half-quartern loaf of bread, a good plate of cold round of beef, and a quart of ale. Most of the people carry this home. The cost is 1*s.* 6*d.* per head. This ensures attendance at the proper time and place, as without some inducement to regularity such tenants consider that any time and place will do. The trouble and loss of time is then very great. Of course the size and rent of the plots are matters for local arrangement, but, to give an instance, there is here one field of 8½ acres divided by a common road down the centre, three yards wide, which occupies 435 square yards. The remainder of the ground is divided into fifty-five plots, each containing about 745 square yards, which are let for 16*s.* per annum. This gives about the same rental as could be obtained for the land altogether as accommodation land, but the object having been to encourage artisans and workmen in habits of industry a very moderate rent was fixed. The above quantity of ground will be found as much as one man can manage well in his spare time. This system has been in work for many years on this estate, it gives but little trouble, and there is very rarely any loss of rent. The fences are all maintained, and the rates and taxes paid by the landlord. I shall be happy if the above notes prove of any service, and to render any further assistance in my power. *H. Sandy, Newport Road, Stafford, May 1.*

The Dwarf Oaks of Yarncliffe, Derbyshire.—Some little time ago an account appeared in the *Gardeners' Chronicle* of a wood of dwarf Oaks in Devonshire—I have met with a similar instance in the Derbyshire Moors. A profound valley commences about half a mile from Longshaw, down which a brawling torrent rushes over broken masses of grit rock. The abrupt declivities of the valley are clothed with Oak trees of venerable antiquity, but so dwarfed and stunted that they appear mere bushes. An example is here afforded of the hardy nature of the Oak, and its ability to exist under circumstances adverse to its high development. It appears that a primitive soil, *i.e.*, one derived directly from the decay of its rock bed, cannot alone assist an Oak to attain the dimensions of a timber tree. The soil on which these Yarncliffe Oaks exist is decomposed millstone grit; masses of the rock jut out in every direction, showing the nearness of the rock bed. Beneath the Oaks there is a profuse vegetation of Vaccinium, Ling, and Fern. Mosses and lichens partly cover both stone and tree, giving great interest to the woodland walk, but telling of shade and moisture less desirable than the mountain breezes that may be found on the height of Higger Tor that rises probably a few miles away. We have in this and similar cases a starting point to estimate the influence of soil on the development of the Oak. Centuries of growth have not lifted the Oaks of Yarncliffe into the dimensions of trees. How different are the Oaks in Lord Bagot's Park, North Staffordshire, growing in a happily prepared compost, elaborated by great geological changes, which give as a base deep beds of red marl, resting on the remnants of Rhœtic beds rich in lime and phosphates; above this an open gravelly loam, otherwise drift, of varying depth, but all accessible to the roots of the noble Oaks luxuriating in this grand preparation of soil. The immense size and perfect health of these trees have gained for some of them the distinction of names—thus the King Oak and the Beggar Oak, opposite in name but both regal in altitude and dimensions; and yet these giants are cousins of the dwarf, stunted trees of Yarncliffe. *W. Ingram.*

Reports of Societies.

CENTENARY INTERNATIONAL EXHIBITION OF THE SOCIÉTÉ ROYALE DE FLORE OF BRUSSELS.

The International Exhibition of Brussels, which was opened by their Majesties the King and Queen of the Belgians on the 30th ult., may be chronicled as a full success. It was held in a temporary building in the Place du Petit-Sablon, erected for the triennial exhibition of Fine Arts, and which, though somewhat confined in space, was in other respects by no means unsuitable. It consists of a nave of considerable length and breadth, and two aisles on each side, a portion of one of these being enclosed and warmed for the reception of Orchids and other tender plants. The entire space available was filled by plants of unexceptionable merit, and the effect produced on the morning of the show after the apparent confusion of the previous day, when the jury had its task to perform, was such as to astonish those who had no idea of the Continental system of rearranging the materials to produce an imposing picture, after the awarding of prizes had been completed.

The chief features of the exhibition, so far as concerns home-products, were the magnificent masses of Palms, Cycads, Tree Ferns, and other foliage plants; the brilliant groups of Indian Azaleas, which were faultless as regards high cultivation, and only too beautiful for want of slight relief, the surface being so thickly furnished with blossoms that no leaves were visible; and the gaudy Amaryllids; while to the foreigners the exhibition was indebted for a grand assortment of Orchids, Roses, stove and greenhouse plants, Hyacinths, all but the latter being the result of a little well-spent energy on the part of some of our own leading nurserymen. Mr. B. S. Williams, of Holloway, won by acclamation the Grand Medal of Honour given by the King to the foreigner contributing most to the splendour of the show; while the Comte de Flandres' medal was given to Messrs. Veitch & Sons, of Chelsea, who made a most interesting show of miscellaneous plants; and a third medal added to the foregoing was awarded to Mr. W. Bull, of Chelsea, for the scientific merit of his exhibits. The corresponding awards to Belgian exhibitors were the Queen's medal, awarded to M. Linden; the Comtesse de Flandres' medal, awarded to M. Van Houtte; and a special medal to Madame Legrelle-d'Hanis. Another special medal was given to M. Louis Fuchs, the garden architect, under whose direction the materials forming this grand exhibition were arranged, for the very successful manner in which the laborious and difficult work had been carried out.

Orchids.

The most interesting feature of the show was perhaps the Orchids, in the management of which our own cultivators seem to excel. By far the finest lot came from Mr. Williams, who gained the large gold medal of 1000 francs offered by the Comte de Ribancourt, the President of the Society, for twenty-five exotic species. In this collection were remarkably well-bloomed and attractive plants of Dendrobium Wardianum and Devonianum, Cypripedium caudatum, Vanda suavis, Phalænopsis Schilleriana, Odontoglossum Alexandræ, and Masdevallia Lindeni and Veitchii. The remaining plants, all notable examples of good cultivation, were Arpophyllum giganteum, Oncidium sphacelatum, Vanda tricolor insignis, Cypripedium villosum and biflorum, Cattleya Mossiæ and Mendelii, Lycaste Skinneri and Harrisoni, Dendrobium nobile, Phalænopsis amabilis; Odontoglossum Roezlii, Pescatorei, and citrosmum roseum; Aerides Fieldingii, and Lælia purpurata. Mr. Williams also won the 1st prize for six Odontoglossums, the sorts being O. citrosmum roseum, with six fine spikes; Pescatorei, with two branched spikes; nævium majus, with two good spikes; Roezlii, with three spikes very strongly bloomed; and Alexandræ. M. Linden was an exhibitor in two of the Orchid classes, namely, in that for fifteen specimen plants, and that for three new Orchids. In the first lot were good plants of Odontoglossum triumphans, and Cypripedium Roezlii; the latter will be referred to under the head of novelties. The 2d prize in the class for twenty-five was taken by M. F. Massange, of Liége, with a group of neat, small plants, amongst which the more striking were Oncidium concolor, Masdevallia amabilis, and M. Lindeni, Vanda cœrulea, and Cypripedium niveum. This gentleman also won the 2d prize for six Odontoglossums. In the class for fifteen Orchids in flower the 1st prize was taken by M. Oscar Lamarche, of Liége, who had rather good examples of the seldom seen Lælia grandis, with its curious buff-coloured sepals and petals; Cypripedium Parishii, nicely-flowered; and a bright-coloured and effective Odontoglossum tripudians. M. Lamarche was awarded a 2d prize in the class for six Masdevallias, the kinds shown being M. ignea, maculata, Veitchiana, Estradæ, Harryana, and Lindeni. M. Estradæ is a very pretty diminutive plant, only about 6 inches high, short oblong leaves, and having the sepals violet-purple at the base, white at the tips, the points being continued into yellow tints. M. maculata, not often seen, has large flowers with a yellow subulate upper sepal, and brown lower sepals with greenish tips.

M. Bergman, gr. to the Baron James de Rothschild exhibited, not for competition, a beautifully grown example of Odontoglossum vexillarium, with four spikes of noble flowers, some of the spikes bearing eight of these flowers. This was awarded a silver-gilt medal. M. Barnaart et Cie., of Vogelenzang, Holland, had an interesting group of hardy terrestrial Orchids, comprising Ophrys lutea, a pot with twelve spikes of from two to five flowers each, O. apifera, myodes, and arachnifera, Orchis Robertiana, a bold habited plant with grand spikes of purplish flowers; Orchis fusca, and fusca alba, Morio, several varieties, mascula and punctulata alba, Platanthera chlorantha, and the purple Bletia hyacinthina.

Palms.

These plants always form striking features in Continental shows, much more so than in our own country, where large plants do not appear to be easily obtained for exhibition purposes. At the head of all those now exhibited as to grandeur and massiveness, was a group of twelve from M. Siraux, gr. to her Serene Highness the Duchesse d'Aremberg, at Enghien. A pair of these great massive trees,

some yards across, stood at one end of the nave—they were Sabal Blackburniana and Latania borbonica; a little advanced from this was a Corypha australis at least 20 feet high, and of proportionate width; while the rest filled the north end of the aisle, and comprised two tall and remarkably well-furnished plants of Chamærops humilis and C. sinensis, the former with a clean stem of some 10 or 12 feet high; Cocos australis (Bonetti), with peculiarly recurved Cycas-like fronds; a fine Brahea dulcis, Phœnix reclinata aurea, P. sylvestris, P. tennis, Livistona filamentosa, and Areca sapida. These deservedly received the 1st prize, and formed a very important element as regards the effect of the show. Collections of twenty-five Palms were shown by M. Linden and M. Van Houtte, the 1st prize going to the former, and the 2d prize to the latter. These two collections consisted of grand and effective plants, and occupied a prominent position on the right of the nave, blocking out the heated enclosure devoted to tender plants. M. Linden's group consisted of Areca Verschaffeltii, Astrocaryum Murumuru, Acanthophœnix crinita, Areca sapida and Baueri, Calamus asperrimus, Ceroxylon niveum, Chamærops stauracantha and excelsa, Cocos Weddeliana, Glaziova insignis, Kentia Belmoreana, Latania glaucophylla; Livistona Hoogendorpi, altissima, Jenkinsii, and olivæformis; Pritchardia Gaudichaudi and Martiana; Phœnix rupicola, Phœnicophorium sechellarum, Thrinax Chuco and elegans, Wallichia Wagneri, and Corypha australis. M. Van Houtte's group consisted of Acanthophœnix crinita, Areca rubra and sapida, Astrocaryum Airi, Calamus adspersus, Caryota Rumphii, Ceroxylon niveum, Chamærops excelsa and humilis nivea, Dæmonorops trichrous, Hyophorbe indica and Verschaffeltii, Jubæa spectabilis, Kentia Forsteriana, Latania borbonica, Livistona altissima and Hoogendorpi, Oncosperma Van Houtteanum, Phœnicophorium sechellarum, Pritchardia pacifica, Thrinax elegans, Caryota sobolifera, a very telling plant in the group; Brahea dulcis, Chamærops humilis gracilis, and Arenga saccharifera. In the class for twelve Palms, remarkable for their rarity or novelty, the 1st prize went to M. Linden, and the 2d to M. A. Van Geert. Here M. Linden showed Astrocaryum tenuifolium, Acanthorhiza Warscewiczii, Astrocaryum Malybo, Cocos Yurumaguas, Geonoma gracilis, Glaziova insignis, Kentia Lindeni and rupicola, Martinezia disticha, Pritchardia macrocarpa, Plectocoma hystrix, and Thrinax Chuco. M. Van Geert's group consisted of Kentia Belmoreana and Forsteriana, Ptychosperma Alexandræ, Areca Dicksoni, Thrinax gracilis, Zalacca edulis, Pinanga Kuhlei, Cocos Weddeliana, Kentiopsis sp., Areca gracilis, Catoblastus Engeli, and Dæmonorops Lewisianus. The prize for a single Palm, remarkable for its elegance, was awarded to M. Massart, of Etterbeek, for Cocos Weddeliana. A very fine Livistona olivæformis, from M. Lemonnier, occupied a prominent position near the south end of the building, but was not for competition.

The prizes offered for groups of Cycads were not responded to.

Pandanads.

In the classes for these effective plants M. Van Houtte was the only competitor, and in each class a 1st prize was awarded to him. The group of ten sorts comprised P. amaryllidifolius, decorus, reflexus, pygmæus, utilis, Veitchii, Vandermeerschi, and three unnamed species. The group of three consisted of P. ornatus, reflexus, and utilis; and the single plant remarkable for its development was P. ornatus. These formed a very interesting feature. P. reflexus was represented by a large plant, showing its drooping coarsely white-spined leaves to much advantage. P. decorus is a species of spreading habit, with green leaves edged with minute green spines. P. amaryllidifolius is of dwarf stocky habit, with densely-set green smooth-edged leaves. One very pretty unnamed species, from Madagascar, is of small growth, with branching stem and narrowish leaves, which are distinctly farinose towards the base. P. ornatus is a very handsome species, with glaucous-green leaves 6 feet long, margined with short small white close-set spines. P. Vandermeerschi, of which there was a plant 10 feet high, is of a bright glossy green with dark spines, and shows the spiral growth peculiar to these Screw Pines in a very marked degree.

Azaleas, &c.

These gaudy flowers formed one of the chief glories of the show, their brilliant colours, which were well distributed, serving to lighten up the comparative dulness of the foliage plants, while as examples of high cultivation they were faultless. The whole of the Indian Azaleas exhibited were of high merit in this respect, and the most densely-bloomed we ever remember to have seen. In the class for forty varieties, large specimens, well-flowered, and well-cultivated, M. De Ghellinck de Walle won the 1st prize, and M. Beaucarne the 2d. In the class for twenty-five varieties, M. Jean Vervæne was placed 1st, and M. Van Eeckhaute 2d. The 1st prize in the class for fifteen varieties went to M. De Ghellinck de Walle, and the 2d to M. Jean Vervæne. In the class for six varieties M. Joseph Vervæne was placed 1st, and M. Jean Vervæne 2d; and both 1st and 2d prizes in the class for a single specimen Azalea went to M. De Ghellinck de Walle. The plants shown in these several classes were mostly of one type, having short stems and dome-shaped heads—not quite so pleasing a form, we think, as that of the more globular heads formerly in vogue, but possibly the necessary result of increased age in the plants, the upper surface having retained its vigour for a longer period than the lower. The larger plants had a clean stem of some 2 feet high, and heads averaging 4 to 6 feet across, convex or dome-shaped; the smaller ones with 1½ foot stems and 2 to 3 feet heads. We have thought it more useful to note the peculiarities of some of the most striking sorts exhibited throughout the show, rather than to give lists of the separate collections. Those which appeared the most noteworthy are the following:—Jean Van Geert, bright rose; Prince Albert, light scarlet; Eugène Mazel in the same style as Stella; Cedo Nulli, purple, a colour not very common amongst these flowers; Harry Veitch, deep rose-pink, large, and crisp at the edge; Roi Léopold, bright salmon, with purple spots; Roi des Blanc, pure white; punctulata, white, very freely striped with rose, and spotted with purple; Baron de Vriese, large white, faintly striped, crispy edge; La Victoire, bright reddish scarlet, with small purplish spot; Roi d'Hollande, bright crimson-scarlet, smooth and brilliant; Souvenir du Prince Albert, deep rose pink, edged with white; Adolphe de Nassau, bright coppery scarlet, with purple flush; Madame Van der Cruyssen, light rose, double; Ferdinand Kegeljan, salmony scarlet, with dark purple spotting, large and smooth; Nonpareil, flesh-colour, with white edge, and deep crimson spots; La Superbe, bright crimson-scarlet, with purple flush, very striking for its colour and smoothness; Mdlle. Louise de Kerchove, deep salmon, flaked with red, and edged with white; Comtesse de Beaufort, bright rose, with dark spots, large and smooth—a grand flower; Apollon, very large, white, faintly flaked, and slightly crisped; Reine des Roses, bright rose; Mdlle. Marie Van Eeckhaute, large, white, faintly flaked with red, in the way of Apollon; Hooibrink, deep purple; Ruben, bright orange-scarlet; Alice, fine double, deep purple; Mdlle. Léonie Van Houtte, large, smooth, white; Sigismund Rucker, deep rosy pink, with dark rosy spotting and white edge—a fine flower and very showy; John Gould Veitch, pink flaked with deep magenta-rose, and deep rosy spotting, crispy edge; Madame C. Van Eeckhaute, fine double white, large and pure, with crispy edge; Grande Duchesse de Bade, light salmony scarlet, semi-double, a striking flower; Bernhard Andrea, deep magenta-rose, crisped edge, semi-double, very showy; Marie Vervæne, large white, slightly flaked with scarlet, crisped edged; coccinea major, brilliant orange-scarlet—this plant was a dense glowing mass; Pelargoniflora, delicate shade of magenta-pink, with deep spotting; Baron de Pret, purplish rose with deep spots; Coloris nova, rich crimson, finely spotted—fine form; Madame Verschaffelt, flesh colour, with very distinct crimson spotting and white edge; Modèle, bright rose spotted; Brillantina, purple with rich spotting, showy; Marie Louise, very light pink with purple spots, large and smooth. There were some fine seedlings shown: these shall be noted further on.

A medal was awarded to M. Van Houtte for a group of twelve varieties of Azalea mollis. This species, associated by botanists with A. sinensis, from which it is horticulturally diverse, promises to be an exceedingly valuable early-blooming plant, furnishing a variety of colour, and apparently extremely useful as a forced decorative plant, the flowers being large and in more massive heads than those of the ordinary hardy Azaleas. M. Van Houtte's plants were fine showy bushes, the following being the best and most distinct of the twelve, namely, Comte Papadopoli, salmon-colour, with yellowish centre, and opens well; Comte de Gomer, nearly of the same colour; Madame C. Van Wambeke, orange-yellow; Madame Caroline Legrelle-d'Hanis, deep salmon-colour, fine; and Comte de Quincey, primrose-yellow, large flowers. A few seedlings of 1876 were shown in a separate collection, but they did not show any further variety or improvement. There were two or three collections of Azalea pontica, but they were somewhat ineffective, not being well-flowered, except in the case of one called Diamant, a hybrid, which was both novel and telling, having a blotch of dark spotting after the style of some of the Indian varieties; the flowers are large in size, and produced in full bold trusses, blush, with a large blotch of crimson spots, which greatly increases its beauty and attractiveness. In the same group, which was shown by M. Van Houtte, was a good double pink variety, named Louis Blommaat.

The hardy Rhododendrons made comparatively a poor show, though large classes were provided for them. The flowers were poor, and the trusses small in the majority of those shown, which came far behind what is seen at our own exhibitions of these noble flowers, and appeared as if crippled by being forced in too dry an atmosphere. The jury seem to have taken the same view, as the 1st prizes in the classes for forty and for fifteen were withheld, and only one prize was given in the class for twenty-five. The varieties were many of them such as are known to be good, including such as Bylsianum, Lord Broughton, Everestianum, Sir Thomas Sebright, Minnie, and Mrs. John Waterer, these being the best which came under observation.

A few Camellias were shown, but they were limited in number, and poor, and may therefore be passed over.

Fine-Foliage Plants.

These were shown abundantly, and formed an important feature of the show. The 1st prize for a group of forty mixed ornamental plants fell to M. Linden's share, the plants forming a large massive block. Amongst them were Dracænas, Palms, and Tree Ferns; Theophrasta imperialis, a young plant about 6 feet high, with grand glossy plaited, spinosely-toothed leaves; T. macrophylla; Philodendron Melinoni, 10 feet through, with bold cordate-sagitate leaves, 2 feet long, on massive petioles which are rounded behind; Dracæna amabilis, in fine condition; five Zamias, including lanuginosa, a fine mass, with leaves 6 feet long; Caffra, Lehmanni glauca, horrida, and Vroomii; and a noble plant of Tolea barbara shown as T. caffra. In the class for fifteen plants of this character, the 1st prize was given to Madame Legrelle-d'Hanis, of Antwerp; the 2d to M. Beaucarne, of Eenaeme. Madame Legrelle's plants included a noble Pritchardia Martiana, with half-a-dozen great fan-shaped leaves on long, sharp-edged stalks, which are covered with whity-brown scurf; Ceratozamia mexicana, a remarkable plant, with from fifty to sixty long drooping leaves; Cyathea medullaris, with a 12 feet stem; Astrocaryum brasiliense, with a slender terete prickly stem, 10 feet high, and an arching head of silvery pinnate leaves; Vriesia Glaziouana, and Bonapartea gracilis, forming a fine tuft of its narrow saw-edged erect leaves. In M. Beaucarne's group were included Roulinia pitcairniæfolia, Bonapartea filamentosa, Chamærops excelsa aurea, and Chamærops gracilis.

The principal group of Variegated Plants, twenty-five specimens, came from M. Van Houtte, and obtained the 1st prize. They were neat stocky specimens, varying from 2 to 4 feet across. Some of the most attractive plants in this group were Maranta Makoyana, the beautiful Bertolonia Van Houtteana, Phyllotænia Lindeni, Pandanus Veitchii, and Dieffenbachia Bowmanni. The prizes for the group of twelve variegated were contested by M. Linden and Madame Legrelle-d'Hanis, who were placed by the jury in the order named. M. Linden had a grand plant of Anthurium crystallinum with six splendidly coloured and perfectly developed cordate leaves, 2 feet long, and 1½ broad, of a deep satiny green, which shows up conspicuously its white veins; a very handsome example of Dracæna amabilis, well-coloured; Dieffenbachia imperialis, a thick-stemmed species, with stout leaf-stalks and great oval leaf-blades of a dark green, freely blotched with yellow-green; Dieffenbachia Bowmanni, 5 feet high, and well clothed down to the pot; Maranta Mazellii, a low mass 4 feet through, the large roundish leaves feathered up the centre and near the margins with a prominent band of silvery grey; a bushy Croton Veitchii, fairly coloured; and a nice example of Sphærogyne latifolia. Madame Legrelle's collection contained Pandanus utilis variegata, Anthurium crystallinum and leuconeurum, Dieffenbachia Bausei, Curculigo recurvata variegata, Maranta argyrea, Kuratas Legrellei, Dracæna regina and D. Youngii, Dieffenbachia amazonica, Ananassa Porteana, and Croton Weismanni.

Aroids.

Prizes were offered for good specimens of twenty-five Aroids, and the first place was won by M. Linden, with a noble group of grand plants, including several which are little known, amongst them Dieffenbachia latimaculata, which has linear-shaped leaves, 1½ foot long, and 6 inches broad, the blade suffused over most of the surface with yellowish green, and having a few dark green blotches; a fine D. Bausei; D. Parlatorei, with spreading leaves, whose stalks sheath the stem, the blade commencing close to the sheath, dark green, 2 feet long, with very thick ribs; D. virens, with petiolate oblong-ovate oblique dark green leaves, having a yellowish rib; D. antioquiensis, with erect-stalked leaves, having oblong-ovate erect blades, dark green, with yellowish spots; Philodendron calophyllum, which has sessile, thick, erect, lance-shaped green leaves, 5 feet long, with a remarkably thick costa; Philodendron Melinoni, already noticed; Anthurium crystallinum, with half-a-dozen well-developed leaves; Curmeria picturata, Alocasia Sedeni, Anthurium Scherzerianum, Philodendron bipinnatifidum, Monstera egregia, and others. The 2d prize lot, exhibited by Madame Legrelle-d'Hanis,

consisted of large but rather roughly-grown plants, including amongst them a fine mass of Philodendron crassipes.

The prizes for twenty-five Caladiums went, the 1st to M. Van Houtte, the 2d to M. Devis, of Malines. Whether from being produced rather early in too much heat, or whether excessive cross-breeding has obliterated their distinctness, from whatever cause, they were singularly ineffective.

The 2d prize for a group of six Dieffenbachias was awarded to M. Van Houtte, whose exhibit consisted of D. Bausei, Bowmanni, brasiliensis, gigantea, imperialis, and nobilis. The prize for six Alocasias was withheld, and that offered for six Anthuriums was not competed for.

Dracænas.

There was a fine display of these noble plants, brought out by the large gold medal offered for a group of twenty-five varieties. The prize was hotly contested by Mr. Wills, of Anerley, and M. Linden, the medal eventually being given to the former exhibitor, and a special medal recommended for M. Linden's plants. Mr. Wills showed a selection of his new hybrids in splendid condition; the plants now shown are the tops of those exhibited last autumn at South Kensington, which have been taken off, and grown into compact sturdy examples clothed down to the pot, and from 1½ to 2 feet high. D. Willsii, Bausei, Barroni, Berkeleyi, Mastersii, and eximia form a group in which a fine and varied red variegation is developed, the last-named having in addition bright crimson margins. D. Leopoldi has a rosy tint, with pale margins. D. regalis, Nitzschneri, Elizabethæ, Imperator, picturata, and Thomsoni have a fine creamy variegation, and form a perfectly novel group. D. Alexandræ and Victoriæ are fine examples of white variegation. D. gigantea is very bold in habit, and has red margins. D. salmonea, a very distinct type, has creamy and flame-coloured variegation, D. Cantrelli is very dark, with a narrow red edge. D. venusta has green, drooping leaves, with a creamy-coloured border, which has a marginal crimson line. D. majestica is green, with a salmony margin. Some others of the Anerley hybrids were shown in the classes for new plants, and will be noticed under that head. M. Linden's collection consisted of well-grown plants, several of them being of considerable size. Amongst the newer ones were D. Reali, with very broad leaves, which have a broad rose-coloured variegation at the base, and becomes creamy at the top; D. Warocquei, with pinkish motley variegation; D. Casanovæ, with broad, short, very dark bronzy leaves which have a crimson variegation at the base; D. Salviati, with narrow erect leaves, bronzy flushed with crimson; D. bellula, narrow-leaved with red variegation; with D. amabilis, Mooreana, regina, magnifica, Baptisti, and others.

Ferns and Lycopods.

These were not exhibited so numerously, nor of the quality we had expected. The prize for twelve Tree Ferns, offered by the King, brought only one collection, that of M. Linden, to whom the prize was assigned. The collection contained a grand Dicksonia antarctica with a very tall stout stem, not quite straight near the top; Cyathea excelsa, medullaris and dealbata of moderate size; Cyathea nigra, Cyathea princeps (miscalled in gardens a Cibotium), a tall plant, rather damaged in transit; as also was Cyathea funebris; Alsophila australis; Cibotium spectabile, and C. giganteum, the latter a Cyathea-like plant; Dicksonia Delplanchei, which comes near to if not the same as D. Youngiæ; Lomaria neo-caledonica, which seems to be the strongly developed tree-like form of L. gibba; and a grand tuft of Todea barbara, bearing a multiplicity of crowns. The prizes for six and those for three Tree Ferns were not competed for. The 1st prize for a specimen Tree Fern went to M. D'Avoine, of Malines, who had a large Dicksonia antarctica. That for a single Tree Fern, remarkable for its elegance, was won by M. Van Houtte, with a grand plant of Cyathea Burkei, with a stout straight stem some 10 feet high, and a noble band of fronds. In the class for a single herbaceous Fern, remarkable for its development, M. Willinck, of Amsterdam, took the prize with a remarkable specimen of Oleandra hirtella.

The class for six Marattias and Angiopteris brought some fine plants from M. Willinck, to whom the 1st prize was awarded. The group consisted of Angiopteris hypoleuca, a grand plant with five immense spreading fronds some 12 to 15 feet long, and very effective; A. Willinckii and A. Miqueliana, nearly as large as the preceding; the rest of the group consisting of fine examples of Marattia cicutæfolia, and sorbifolia, which have bipinnate fronds; and M. Laucheana, which has the fronds tripinnate.

Mr. Williams was awarded a 1st prize for a group of ten herbaceous Ferns, in which were included well furnished specimens of Adiantum farleyense and A. gracillimum, Davallia Mooreana and hemiptera, Brainea insignis, Thamnopteris nidus, and four Gleichenias, namely, G. Mendelli, rupestris, dichotoma, and speluncæ. A 1st prize was also given to Mr. Williams for a group of twelve Filmy Ferns, consisting of different species of Todea, Trichomanes, and Hymenophyllum, which were the objects of much admiration.

Two groups only of fifteen Selaginellas were shown, the prize for the 1st going to M. Willinck, and that for the 2d to M. Ghellinck de Walle. The former consisted of flat pans, about 2½ feet across, of Selaginella Willdenowii, apus, Galeottiana, viticulosa, Martensii and Martensii variegata obtusa, stolonifera Poulteri, cæsia (uncinata) Danielsiana, a tall bushy plant of S. cæsia arborea, and plants of two forms of Lycopodium dichotomum, and L. taxifolium.

Phormiums.

A prize offered for ten varieties of Phormiums, remarkable for their growth and beauty, was taken by Madame Legrelle-d'Hanis, who set up a very distinct-looking and effective group, consisting of large masses of the following sorts, namely, P. tenax variegatum, P. tenax Veitchii, P. Colensoi, P. Cookii, P. Cookii verum, P. vittatum, P. atropurpureum, P. nigro-pictum, P. viride latifolium, and P. brevifolia.

Roses.

The Pot Roses, though not showing the freshness and vigour we are accustomed to see in England, still formed a very considerable and attractive feature in the show. The leading collections were contributed by Messrs. W. Paul & Son, of Waltham Cross, who carried off five 1st prizes, namely, those for one hundred Hybrid Pepetuals, fifty Hybrid Perpetuals, twenty pyramidal specimens, fifty Tea Roses, and twenty-five Tea Roses. The varieties were the same as those which generally appear at our shows, and a list of their names would be tedious; suffice it to say, they were sent to Belgium in the undeveloped state some two months since, and consequently their blossoms were produced under the influence of the Belgian climate, which, being drier than our own, is not so favourable to the size as it is to the colour of the flowers. The 2d prize for fifty Hybrid Perpetuals went to M. De Messemaker, who had small-headed standards. Messrs. Veitch & Sons also showed a collection of fifty Roses, staged with a bordering of small plants of Clematis in blossom.

Bromeliads.

Two or three groups of twenty-five Bromeliaceous plants were staged, but though containing many subjects of botanical interest, they were not effective as exhibition plants. The 1st prize went to M. Desbois, of Ghent, who showed Æchmea Weilbachi, Ananassa sativa variegata, Bromelia Binoti and undulata, Cryptanthus zonatus variegatus, Echinostachys Pineliana, Encholirion corallinum, Saundersii, and Jonghei; Hohenbergia angusta, Nidularium fulgens, Innocenti, marmoratum, Meyendorffi, and spectabile; Ortgiesia tillandsioides, Pourretia argentea, Tillandsia Lindeni, musaica, sanguinolenta, staticeflora, tessellata, and Zahnii; Vriesia glaucophylla and splendens. The Nidulariums were the most telling plants, on account of their coloured centres. The other prizes went to M. Pycke and M. Beaucarne.

Gloxinias.

A very fine bank of these gorgeous plants, remarkably well grown, and magnificently flowered, was set up by M. Duval, of Versailles, to whom the 1st prize was awarded. Some of the most taking flowers in this charming collection were Lisere d'Argent, bright crimson with white edge; Patrie, fine large flowers, with purple tube and throat, passing to pale violet towards the white edge; Color nova, rich plum-crimson, paler at the edge; William Robinson, pink delicately and closely spotted with a curved band of deep rose-pink within the margin of the lobes; Mont Blanc and Boule de Neige, two good whites, the former being the finest flower; Madame Hoy, lilac, very distinct in colour; and Carmin, rich crimson-scarlet, paler at the edge. The 2d prize was taken by M. Van Houtte, amongst whose varieties were Ami Thibaut, with white ground and close wavy reticulated lines and dottings of purple, and Madame de Stael, with punctate pink flowers. The varieties staged were mostly of the erect-flowered type.

Hyacinths, &c.

Some fine banks both of Hyacinths and Tulips were set up, and from their bright and striking colours they served to lighten up the positions in which they were placed. The prizes were taken by M. Krelage, of Haarlem, and M. Barnaart. A very fine effect was produced by a class of twenty *grands pots ou terrines*, with ten bulbs in each; the cluster of ten even-sized spikes of the same colour proved to be very telling, and this is certainly the best way of showing Hyacinths where a striking pictorial effect is desired to be obtained.

Miscellaneous Groups.

We have often to speak of the miscellaneous groups set up by nurserymen as the most interesting portions of our own shows, and the same holds good on the present occasion, a remarkably fine display of this character having been made by Messrs. Veitch & Sons, such as gained them the prominent prize already adverted to. The group was set up on a low table having three semi-circular projections, connected by straight lines. The group comprised seventy-five species and varieties of Orchids, nine kinds of Croton, twelve of Dracæna, fifteen of hybrid plants, thirty-one of Palms, Ferns, and Cycads, and thirty-five of miscellaneous subjects, many of them being shown in duplicate. The effect of such a group tastefully set up, which was aided by the form of the table on which they were placed, was remarkably good, and the plants themselves were full of interest. A list of them would take up too much space, but we may mention as objects which particularly attracted notice a good Saccolabium curvifolium, with coppery orange flowers; a fine mass of Cœlogyne cristata, the extremely interesting Adiantums speciosum and digitatum, an Anthurium Scherzerianum, with fifty spathes; the still more novel A. Scherzerianum album, Nepenthes lanata, with several fine pitchers; Dracæna hybrida, a novelty with fine creamy and pink variegation, but which appears to look best in the form of small plants; and several hybrid Cypripedia. There were also half-a-dozen new hybrid Rhododendrons of the jasminiflorum type, to which we shall further allude when we come to deal with novelties.

Mr. Williams had a similar miscellaneous group in addition to his numerous exhibits in the several classes. A feature in this group was the presence of four Sarracenias in blossom, namely, S. purpurea, with purplish flowers, S. Drummondi alba, with flowers of chocolate-red, S. flava, with green flowers, and S. flava maxima, with the flowers white. Here also was the white Anthurium, a cut spathe shown with the young blooming plants being fully 3 inches long, and showing that as it gains strength this will also reach the dimensions of the scarlet variety. Adiantum gracillimum was in this collection, and of this it may be noted that it should be grown in a cool or intermediate house, and not in a hot stove, which forces it out of its natural character. The rest of the group was made up principally of Orchids, Ferns, Pitcher-plants and Cyclamens.

M. Linden was awarded a 1st prize for a group of fifty Officinal and Economic plants, a series always interesting to the scientific visitor, if not very attractive to the sight-seers. The most interesting subjects were the Coca—Erythroxylon Coca, which has recently attracted public notice, the Cow Tree, Galactodendron utile; the India-rubber Tree, Siphonia elastica; the Liberian Coffee, C. liberica; Quassia amara, the Cedron, Simaba Cedron, Copaifera officinalis, and Amyris balsamifera.

A class was provided for Japanese Maples, the 1st prize for which was taken by M. De Graet-Bracq, and the 2d by M. Van Houtte. The 1st prize lot consisted of neat pyramidal bushes of 4 to 5 feet high, and were attractive objects, either on account of the colour of their leaves or for their elegant cuttings. The most notable in this latter respect was Acer japonicum pinnatifidum, the leaves of which were very finely cut. The remainder of this collection consisted of Acer japonicum, dissectum, viride, atropurpureum, sanguineum, roseum, and reticulatum.

One or two pretty groups of tuberous Begonias were shown, M. Van Houtte taking the 1st prize, and M. Van Schoor the 2d. M. Van Houtte's group contained several beautiful unnamed forms, in addition to the following, which were strikingly attractive—Madame Oscar Lamarche, with large deep vermilion-red flowers of good shape; Charles Raes, deep rosy scarlet; and Madame Zimmerman, pink, with very broad rounded petals.

A fine group of two dozen or more plants of Souvenir de la Malmaison Carnation were shown by M. De Goes, "*hors concours*," and a silver-gilt medal was very deservedly awarded to them, on account of the great skill displayed in their cultivation. The plants were from 15 to 18 inches high, with from twelve to twenty flower-stems, each terminated by a grand flower, and studded thickly with successional buds.

Mr. C. Turner showed a very pretty collection of Auriculas, which made quite a gay spot on one of the tables. Amongst them was the double yellow variety named Yellow Prince. The 1st prize was awarded.

Cacti were very well represented by the finely grown collections of twenty-five kinds. The first, from M. Demoulin, consisted of Mamillaria crucigera and hystrix; Echinocactus cornigerus, echidna, Mirbelli, Kochii, Monvillei, myriostigma, pilosus, Pottsii, platycereus, obvallatus, recurvus, robustus, texensis, tulensis; Echinopsis formosissima and multiplex cristata; Pilocereus senilis, Houlletianus, and chrysomellus; Cereus Corine, eburneus, Dumortieri, multangularis, and Opuntia tunicata. The 2d prize collection came from M. Pfersdorff, of Paris; and the 3d from M. Story, of Laeken. M. Pfersdorff showed Anhalonium prismaticum and Pilocereus Hoppenstedtii in his collection.

A very fine group of Yuccas, Dasylirions and Agaves

was shown by M. Beaucarne, to whom the 1st prize was awarded. Among the Agaves we specially noted A. hystrix glauca as being very near to A. Richardsii; A. Beaucarnei was a very distinct-looking plant, with smooth leaves 8 to 9 inches long, with a white edge, and bearing only a few small scattered spines. The collection contained a good A. applanata, and a nice specimen of the small-growing A. Bessereriana.

A grand specimen of Imatophyllum miniatum, with twenty heads of expanded blossoms, was shown by M. Van Schoor, and received a 1st prize.

New Plants.

For six new plants not in commerce, Mr. Bull, of Chelsea, was placed 1st, and MM. Jacob-Makoy et Cie. 2d. Mr. Bull's plants were Pritchardia grandis, from the Solomon Isles, a beautiful bright green Palm with roundish, concave, plaited leaves, having a doubly-toothed edge and flat, spiny leaf-stalks, figured by us at p. 415, vol. i., 1874; Dieffenbachia Shuttleworthii, from Columbia, a small habited species, with spreading, lanceolate-oblong leaves, 9 inches long, of a satiny green, with a silvery central bar an inch wide; Croton elegantissimus, from the New Hebrides, a finely coloured plant with yellow and red stems, long, dark green, drooping leaves, half-an-inch wide, the basal portion of which on the costa is of a deep golden-yellow; Dieffenbachia Chelsoni, with ovate, yellow, blotched leaves; Aralia splendidissima, from New Caledonia, a densely leafy plant, the leaves pinnate, 1½ foot long, with about eleven pairs of opposite lobed leaflets; and Alocasia Johnsoni, from New Guinea, a species having purple, mottled stalks, furnished with short prickles arranged in groups, and arrow-shaped, erect, dark green leaves veined with red. In M. Jacob-Makoy's group was Maranta Massangeana, a beautiful species with flat velvety-maroon leaves of roundish-oblong figure, with a lobate, silvery band in the centre, and vein-like lines running out to the margin, which is green; also Liparis elegantissima, the leaves of which have a bronze-coloured centre and a pallid spotted margin; and Aphelandra illustrata, a small-habited plant, with ovate acuminate dark green leaves, marked by transverse white lines, and orange-coloured flowers issuing from spiny dark-edged bracts.

For three new plants not in commerce Mr. Bull was again 1st, with Aralia spectabilis, Dieffenbachia regina, and Croton Hendersoni; and Mr. Williams 2d, with Photinia serrulata variegata, Dieffenbachia Parlatorei marmorata, and Zamia crassifolia. The Aralia comes from New Caledonia, and is the same as M. Linden's A. filicifolia; it has pinnato-pinnatifid leaves, the pinnæ of which are lanceolate and sinuately lobed; Dieffenbachia regina is from Columbia, and has small spreading ovate-oblong leaves, having a pale greenish centre with few dark green blotches and margin; Croton Hendersoni has very broad oblong obovate leaves, dark green with golden veins, the margin being heavily marked with the golden hue. Photinia serrulata variegata, from China, has yellow and bronzy variegation; Zamia crassifolia has a trunk about a foot high and pinnate leaves, the pinnæ small, crowded, and variously directed from the stout rachis.

The 1st prize for one new plant in flower was awarded to MM. Jacob-Makoy for Pavonia Wioti, formerly noticed by us; and the 2d to M. de Smet, for Cotyledon macrophyllum rubro marginatum, from Caffraria. The 1st prize for one new plant not in flower was won also by MM. Makoy, with the Maranta Massangeana just described; and the 2d went to Mr. Bull for Davidsonia pungens, a North Australian plant, a free-growing plant, with large pinnate leaves, having about five pairs of oblong, acuminate, sharply-toothed leaflets, the lower ones smaller, and the leaves being stipulate and having a lobate wing to the raches. The 3d prize was given to M. de Smet for Melocactus Leopoldi, a globular plant, with very numerous spines of a reddish hue, paler at the base, the larger ones 2½ inches long.

The new plants falling into the other classes were too numerous for us to follow out, and we must therefore be content to notice some of the most striking staged by the different exhibitors without attempting to class them. The most important group viewed in this sense was that of M. Linden, amongst whose plants we specially noted the Aralia filicifolia, above referred to; Croton Andreanus, with broad, Laurel-like leaves, well coloured, the yellow costa running out into yellow veins, which become united at the edge, the yellow ultimately changing to an orange tint; Aralia Veitchii gracillima, from New Caledonia, a beautiful little plant with the narrowest of narrow segments, brown, marked with a white costa; Artanthe magnifica, from Peru, with a fluted stem, large oblong-ovate dark glossy green leaves, having the lower half of the costa white; Cespedesia Bonplandi, from Peru, an erect Theopbrasta-like plant; Lomaria præmorsa, from New Caledonia, which is the same as L. ciliata; Marattia attenuata, from New Caledonia, a species with the purplish stipes transversely corrugated, and bearing tripinnate fronds, with oblong-acuminate pinnules; Lomaria gigantea, from New Caledonia, a large gibba-like plant, with fronds 3 to 4 feet long, and diminishing at the base to very small rounded lobes; Lomaria neo-caledonica, already mentioned; Clidemia vittata, with oval silvery-ribbed leaves; Dieffenbachia illustris, with bold oblique leaves marked in the way of those of Bausei; Fourcroya Lindeni, a handsome form, the leaves having a distinct spiny golden margin, and Eranthemum atropurpureum, with broad ovate leaves of a dark maroon-purple.

MM. Jacob-Makoy et Cie. showed a new Orchid, Zygopetalum Massangei, which has brown sepals and petals, and a blue-veined lip, in the way of Z. intermedium. Mr. Williams showed Cycas intermedia, a handsome plant with a cylindrical stem 2 feet long, and a fine head of elegant pinnate leaves; Platycerium Willinckii, figured by us at p. 303, vol. iii., 1875, and which was also shown in Messrs Veitch's miscellaneous group; and Polystichum lepidocaulon, the Cyrtomium-like proliferous-fronded Fern from Japan, figured at p. 203, vol. iii., 1875. M. A. Van Geert had Araucaria Van Geertii, an Australian plant, as yet quite young, with needle-shaped leaves, and the tips of the young growth of a reddish hue; Pandanus Van Geertii, with glaucous green recurved leaves, red at the base, and finely brown-toothed; Kentia rubricaulis, with pinnate ovate leaves, having red stalks; Yucca Whipplei, with long narrow erect linear-acute channelled glaucous leaves, 1½ foot long. In M. De Smet's several collections were Echeveria Desmetiana columnaris, from Mexico, an erect-growing plant about 6 inches high, with the leaves successively placed one tier above another, forming a columnar growth; Agave Warelliana, from Mexico, which has green leaves with a pale stripe, oblong acuminate, 6 inches long, armed on the lower part with dark spines, the upper part unarmed and running out into a brown spine about an inch long; Sempervivum sphæroideum, from the Canary Isles, the leaves of which form a dome-shaped head, some 8 or 9 inches across. Mr. Bull showed Croton formosus, a hybrid, intermediate in character between C. Veitchii and Weismanni. Mr. Wills showed in this category his Dracæna volutua, which has all the leaves volutely recurved with a well-marked cream-coloured and pink variegation; D. Frederica is bronzy, with rich lake-crimson margin; D. Ernesti has narrow recurved leaves, with creamy and rosy-crimson variegation; and D. stricta alba has well-marked white variegation.

Messrs. Veitch & Sons' new Rhododendrons of the jasmiflorum type will, with the other varieties already well known, form valuable decorative plants. They appear all to have been raised between the scarlet R. Lobbii and Princess Royal. Roi des Belges has large flowers for this type, salmon-coloured, deeper in the centre, with oblong segments; Reine des Belges is of a delicate salmon-pink, with a white centre; Duc de Brabant is orange-red; Professor Morren is a fine orange-red of good form; Prince Albert Victor is of a salmony red; Duchess of Edinburgh is of a bright waxy scarlet. These are all large-flowered forms, with distinct oblong corolla segments.

Many very fine seedling Azaleas were exhibited, and from amongst them we have selected the following, as appearing to be the most desirable and novel in character. M. Van Houtte exhibited Herman Lubbers, a large crimson flower with dark purple spotting, and having a small, close petaloid tuft in the centre; and Professor E. Morren, a bright crimson-scarlet, with several tiers of broad, smooth segments, forming a thin double flower. M. Jean Vervæne showed Flambeau, a very bright crimson, with small oblong segments; Jean Vervæne, a very showy variety, with large, deep, salmon-coloured flowers, having a blotch of purple spots, and a flush of purple on the upper lobe, vermilion-red flakes scattered here and there, and a white margin formed of irregular patches running more or less inwards; Noble Belgique, very large pale flesh-colour with purple spotting, and a broad white edge; and imbricata variegata is a double with blush flowers flaked with red, the outer lobes being greenish. M. Joseph Vervæne showed a beautiful double-flowered variety, as full as a good double Petunia, forming a close, solid flower. This is white, slightly barred and flaked, and of an entirely novel character. From M. Ch. Vuylsteke came Souvenir de Madame Rudolph Abel, a delicate blush-white, with radiating patches of purplish spots on the upper segments, or sometimes continued also on the lower side. M. E. Van der Cruyssen showed two hybrid Azaleas crossed with Rhododendrons, and showing a little alteration in leaf, but retaining the usual character in the flowers, except that they are very large. Of these La Vengeur has flowers of a bright rosy pink colour, the edge slightly crispy, and the flowers fully 4 inches across; and Pucelle d'Orleans is similar in character, but the flowers are pure white.

There are still many subjects that might be noted, but to give the whole in detail would absorb all our space. We will therefore only add that there were the usual bridal and other bouquets, and groups for the table, which were very unequal in merit, and there was a very good display of fruit, especially of last year's Apples and Pears.

To conclude, we may say that the exhibition was worthy of the occasion—the celebration of the centenary of the Société Royale de Flore; and those who had the pleasure of being present will not soon forget either the general high merit of the exhibits, or the cordial good will and profuse hospitality which has everywhere met those who have made this an occasion for a pilgrimage to Brussels.

Royal Horticultural: *May* 3.—Lord Alfred Churchill in the chair. But few subjects of more than ordinary interest came under the notice of the committees to-day, and consequently Mr. Berkeley's duties were lighter than usual. He, however, announced the awards made, and made a few comments on some of the subjects exhibited.

Scientific Committee.—Maxwell T. Masters, M.D., F.R.S., in the chair.

Ranunculus bulbosus.—Mr. Hemsley exhibited plants of this species, showing the old corm still adhering to the new one. Usually the former decays in autumn, or shortly after the formation of the new growth, so that it is unusual to find the plant in the condition in which it was exhibited.

Blanched Plum Leaves.—Mr. G. F. Wilson showed leaves of a Plum tree grown on a trellis under glass, and with a milky-white appearance of the upper surface. It was supposed that this appearance was due to the separation of the epidermis from the underlying tissue, the result probably of a chill.

Gardening in Bangalore.—Colonel Puckle made some observations on this subject, with a view to elicit opinions as to the best varieties of fruit trees, &c., to be introduced. Colonel Puckle's paper is printed in another column.

Potato Disease.—Mr. W. G. Smith showed drawings of the process of germination in the resting-spores of the Potato fungus. He had ascertained that the resting-spores produced zoospores, and these developed into a mycelium which there was every probability was the mycelium of Peronospora, as conidial threads of that genus were also found, but the observations were not yet complete. Other spores had developed into Fusisporium, the fungus found in that form of the Potato disease originally described by Von Martius, and known to Mr. Berkeley many years before the outbreak of the Peronospora form of the disease.

Abnormal Mango.—Mr. Grote showed a specimen of fasciation in the Mango, received from Dr. King, of Calcutta.

Floral Committee.—W. B. Kellock, Esq., in the chair. First-class certificates were awarded to Messrs. Paul & Son, Cheshunt (unanimously), for the new H. P. Rose Duke of Connaught, which certainly improves with acquaintance, and which, as well as being one of the finest of dark Roses, is deliciously scented; to Mr. C. Noble, Bagshot, for Clematis Proteus, a large double flower of a pale rose colour, not at its best to-day; to Mr. R. Dean, Ealing, for a handsome seedling form of Primula cortusoides amœna, named laciniatum, the flowers of which are larger and not so much cut as its parent, and of a pleasing warm crimson-magenta, quite an acquisition to this beautiful tribe; to Mr. J. Millar, Upwey, Dorchester, for Primula Golden Queen, a bright lemon-yellow hose-in-hose variety of the Polyanthus type; to Messrs. Osborn & Sons, Fulham, for Pyrethrum aureum laciniatum, a deeply-cut leaved variety of the common Golden Feather, which promises to make a good bedding plant; to Mr. Turner, for Auricula Gertrude Knight, a grey-edged variety, ground colour purple and well-defined, with pure white but rather coarse paste; and for Auricula Charles Lidgard, an alpine variety with a pure yellow centre, and a dark velvety maroon ground colour—a slightly reflexed and very pleasing flower. To the Rev. A. Rawson, Bromley, Kent, for Pelargonium Queen of Stripes (as a decorative plant), a show variety of a pink ground colour, and dark maroon blotch, with broad stripes of bright roses; by no means a florist's flower, but one certain to become popular for market work on account of its attractive colours. To Captain Blake, Danesbury (Mr. A. Parsons, gr.), for Azalea Duke of Edinburgh, very dark salmon-red, faintly spotted, and one of the largest flowers we have seen. A Botanical Commendation was awarded to Mr. R. Dean for Aquilegia formosa, a pretty little Californian form, with yellow petals and long crimson spurs; an early and very pretty little flower. Messrs. James Carter & Co. showed several of the fine plants of Mignonette exhibited by them at Regent's Park last week, and were awarded a Cultural Commendation. The thanks of the committee were awarded to Messrs. Veitch & Sons for a showy group of Azaleas and Clematis; to Mr. B. S. Williams for a choice group of stove and greenhouse plants; to H. J. Buchan, Esq., Southampton, for cut blooms of Rhododendron Nutallii; to Messrs. Osborn & Son, Fulham, for two striking masses of Gentiana acaulis; and to H. Smithies, Esq. (Mr. Sumner, gr.), for plants of Masdevallia Harryana and Veitchiana,

and Odontoglossum Alexandræ Andersoni, the latter with one branched spike of twenty-four flowers.

Fruit Committee.—Henry Webb, Esq., in the chair.—A very promising seedling from the Blenheim Orange Apple was shown by Mr. J. Chesher, Connington Castle Gardens. It is of medium size, somewhat flattened, and different as well from its parent in flavour. It was said to keep in good condition till July, and the committee requested that it should be shown in June, and again in November next. From the Marquis of Abergavenny's garden at Eridge Castle, Mr. Rust sent a seedling Apple raised from a cross between Stunner Pippin and Dumelow's Seedling. On being cut, the fruits were more or less decayed at the core, and the committee considered it inferior to both of its parents. An Apple without a name was also sent by the Messrs. Harrison, of Leicester, probably one of the many good but little known local varieties to be found in that neighbourhood. A vote of thanks was voted to Dr. C. M. Ingleby, Valentines (Mr. Earley, gr.), for eight dishes of well-preserved Apples and Pears. A large collection of Apples and a few Catillac and Beurré de Rance Pears came from Sir W. W. Wynn's garden at Wynstay (Mr. Middleton, gr.), but unfortunately they arrived too late to be brought before the committee.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, For the Week ending Wednesday, May 3, 1876.

Month and Day.	Barometer. Mean reading Reduced to 32° Fahr.	Barometer. Departure from Mean of 15 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 63 Years.	Dew Point.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
April 27	29.08	—0.09	55.3	45.9	9.4	49.5	+ 0.3	45.1	86	S.S.W.	In. 0.12
28	29.33	—0.44	59.3	46.0	13.3	49.4	+ 0.5	46.1	89	S.S.W. to S.W.	0.19
29	29.38	—0.40	59.8	41.3	18.5	49.7	+ 0.6	43.7	80	S.W.	0.00
30	29.55	—0.23	47.1	40.4	7.7	43.6	— 6.8	41.7	97	N.N.E.	0.20
May 1	29.82	+0.05	52.4	34.1	18.3	43.8	— 7.0	36.6	79	N. to N.E.	0.00
2	29.99	+0.22	52.0	35.4	16.6	43.1	— 8.0	34.5	76	N.	0.00
3	30.16	+0.39	56.4	31.9	24.5	43.3	— 7.1	37.5	79	NNE to N.	0.00
Mean	29.70	—0.07	54.8	39.1	15.4	45.6	— 3.0	40.2	84	S.W. to N.	sum 0.41

April 27.—Overcast and dull throughout. Heavy shower of rain at 11 P.M.

,, 28.—A fine day. Cloudy with frequent showers. Heavy hail and slight thunderstorm about 11 P.M.

,, 29.—Partially fine day. Dull and very cloudy at times.

,, 30.—Overcast, dull, cold and wet throughout.

May 1.—Fine, but cloudy and cold. Slight hail fell at 11 A.M.

,, 2.—Fine, partially cloudy and cold. Occasional hail fell in morning.

,, 3.—A fine day, partially cloudy till evening, then cloudless. Cold.

—— During the week ending Saturday, April 29, in the vicinity of the metropolis the reading of the barometer at the level of the sea increased from 29.98 inches at the beginning of the week to 30.07 inches by the morning of the 24th; decreased to 30.03 inches by the evening of the same day; increased to 30.20 inches by the morning of the 26th; rapidly decreased to 29.50 inches by about noon on the 28th; and increased to 29.58 inches by the end of the week. The mean reading for the week at sea level was 29.90 inches, being 0.40 inch above that of the preceding week; and 0.06 inch below the average.

The highest temperatures of the air observed by day ranged from 66° on the 24th to 55½° on the 27th; the mean weekly value was 61°. The lowest temperatures of the air observed by night varied from 39° on the 26th to 46° both on the 27th and 28th; the mean value for the week being 43½°. The mean daily range of temperature in the week was 17¼°, the largest range in the day being 23½° on the 26th, and the smallest, 9½°, on the 27th. The mean daily temperatures of the air were as follows:—23rd, 50°.1; 24th, 53°.5; 25th, 52°.9; 26th, 49°.6; 27th, 49°.5; 28th, 49°.4; 29th, 49°.7; and the departures in excess of their respective averages were 2°.1, 5°.3, 4°.6, 1°.1, 0°.8, 0°.5, 0°.6. The mean temperature of the air for the week was 50°.7, being 2°.1 above the average of observations extending over a period of sixty years.

The highest reading of a thermometer with blackened bulb in vacuo placed in sun's rays, was 113¾° on the 24th; on the 27th it did not rise above 68½°.

The lowest reading of a thermometer on grass, with its bulb exposed to the sky, was 33½° on the 26th; the mean for the several low readings was 37°.

The direction of the wind was S.S.W., and gentle in motion. The weather during the week was fine, though cloudy and showery.

Lightning was seen during the evening of the 25th, and a slight thunderstorm occurred, accompanied with heavy hail, about 1 P.M. on the 28th.

Rain fell on four days in the week, the amount collected was 0.24 inch.

In England the highest temperatures of the air observed by day ranged from 66° at about London to 55½° at Bradford and Newcastle-on-Tyne. The mean from all stations was 59½°. The lowest temperatures of the air observed by night varied from 35° at Hull to 43° at Plymouth. The mean value from all stations was 38°. The range of temperature in the week was the greatest at Cambridge, 28½°, and the smallest at Plymouth, 15°. The mean range from all stations was 21½°. The mean of the seven high day temperatures was the highest at about London, 61°, and the lowest at Newcastle-on-Tyne, 51°. The general mean from all stations was 56½°.

The mean of seven low night temperatures was the lowest at Plymouth and Truro, both 45¾°, and the highest at Sunderland and Newcastle-on-Tyne, both 38½°; the mean value from all stations was 42½°. The mean daily range of temperature in the week was the largest at Cambridge, 18¾°, and the smallest at Truro, 9¾°; the mean daily range from all stations was 14°. The mean temperature of the air for the week was 47½°, being 3° lower than the value for the corresponding week in 1875. The highest was at about London, 50½°, and the lowest at Sunderland and Newcastle-on-Tyne, both 43½°.

Rain fell on every day in the week at Truro, Leicester, Wolverhampton, Sheffield and Bradford, and on five or six days at most other stations. The amounts varied from an inch and seven-tenths at Newcastle-on-Tyne, to two-tenths of an inch at about London and Brighton; the average fall over the country was eight-tenths of an inch.

The weather during the week was fine, though unsettled and showery. A slight thunderstorm occurred at about London, on the afternoon of the 28th.

In Scotland the highest temperatures of the air ranged from 69° at Paisley to 52¼° at Aberdeen; the mean value from all stations was 58°.

The lowest temperatures of the air varied from 28½° at Aberdeen to 32° at Greenock; the mean from all stations was 30°. The mean range of temperature was 28°. The mean temperature of the air for the week was 44½°, being 5¾° lower than the value for the corresponding week in 1875. The highest occurred at Paisley, 46°, and the lowest at Aberdeen, 43°.

The fall of rain during the week was generally large; the amounts varied from 2½" at Dundee to half an inch at Aberdeen. The average fall over the country was 1⅜ inch, being 1¼ inch above that of the corresponding week in 1875.

At Dublin the highest temperature was 63½°, the lowest was 35½°, the range was 27½°, the mean was 49°, and the fall of rain was 0.92 inch.

JAMES GLAISHER.

Answers to Correspondents.

Aucubas: *An Old Reader.* Provided the frost has not killed the male blossoms, no artificial fertilisation is required.

Auricula: *A Subscriber.* Above the average seedling in form, but a little too coarse, and too dull in colour to be considered first-class. We do not remember the colour of Coleus Hendersoni. Consult a trade catalogue.—*T. B., Fort William.* A very coarse, pin-eyed flower. *C. T.*

Currant Trees: *B.* Had you not stated that the same affection has occurred for some years, we should have attributed the failure in setting to the evidently weak condition of your trees from the leaves being denuded last season. We have failed to find any mites, as the buds are too much expanded, but it is probable that if the buds were examined before expansion, that a very minute mite would be found, as in the Black Currant, which would effectively prevent impregnation. *M. J. B.*

Lily of the Valley: *J. S.* We have no record of having received the letter in question. Please repeat your inquiry.

Names of Plants: *Lymington.* Prunus Padus.—*G. Wilson, Exeter.* 1, Tamarix gallica; 2, Amelanchier vulgaris; 3, Amygdalus nana.—*W. A.* Saxifraga granulata.—*Camjee.* It is impossible to name the Acacia sent without flowers.—*W. P.* 1, Amelanchier vulgaris; 2, Amelanchier canadensis var. ovalis. *K. E. J.* 1, Pinus monophylla. Can you oblige us with a specimen for the herbarium, with flowers if possible, or without them? 2, Amelanchier canadensis; 3 Scilla amœna, var.?—specimen not sufficient; 4, send again when it flowers; 5, Muscari moschatum; 6, Scilla campanulata alba.—*Australia.* Clianthus puniceus.—*J. P., Coldstream.* Alchemilla arvensis. Please pay the postage of your future communications.—*W. A. C.* 1, Saxifraga crassifolia; 2, Lachenalia tricolor; 3, Spiræa chamædrifolia; 4, Lamium maculatum.

Peaches, &c.: *A Subscriber.* We would advise you to get a copy of Bréhaut's *Modern Peach Pruner*, published at 171, Fleet Street, E.C., and to watch the "Garden Operations" in our own columns.

Peach Trees: *W. A. C.* The spots are probably due to the action of the morning sun on the leaves when the condensed moisture has not been removed by timely ventilation; but the cause of the leaves falling off will probably be found at the roots, of which there may be a deficient supply. The border, too, may not have been sufficiently watered.

Removing Greenhouses: *J. G.* All depends upon how you have built the houses, and what agreement you have entered into. We would advise you to consult a solicitor.

Vine Leaves: *J. M. J.* Though you have had no sun, you have had a frost of radiation two or three nights, and it is very possible that this is the cause of spotting. The younger the foliage, the more it seems to have suffered. Radiation often causes drought in the house, which is often a injurious as direct sunlight, and requires as carefully to be guarded against by shading. *M. J. B.*

Vines: *H. Jarvis.* We can only assume from your statement that, as the Vines made a strong growth, they were probably not very well ripened. If you pay attention to this point during the coming summer and autumn, the young rods will no doubt throw some fine fruit next year.—*Vineyard.* In the absence of details as to the treatment the cane has received, we can only suppose that the cause is too much moisture and too low a temperature.

Watson's Masterpiece: *W. Valentine.* We have no experience.

☞ Foreign Subscribers sending Post Office Orders, payable at the post-office, King Street, Covent Garden, London, are requested to be good enough to write to the Publisher, at the office of this paper, 41, Wellington Street, Covent Garden, at the same time, to inform him of the fact.

Catalogues Received:—Messrs. Dick Radclyffe & Co. (129, High Holborn, London), Illustrated Catalogue of Plants, &c.—Messrs. Cole & Brother (Pella, Iowa, U.S.A.), Descriptive Seed Catalogue.—Messrs. Vilmorin-Andrieux & Co. (4, Quai de la Mégisserie, Paris), Supplement to Catalogue of Seeds, &c.

Communications Received.—E. F.—Consistency.—A. H.—Sir T. L.—C. Osman.—W. E.—R. H. (next week).—A. R. (next week).—R. Debron.—H. M. (too late for this week).—O.—L. W.—W. H. (thanks).—G. H.—A. S.—A. D.—H. W., Weirleigh (with best thanks).—F. W. B.

Markets.

COVENT GARDEN, May 4.

A fair amount of business is doing, and prices are much the same as last week. The supply of hothouse fruit keeps equal to the demand, and heavy importations of all kinds of vegetables arrive daily from France. The first Gooseberries of the season have reached the market from the West of England, and sold readily. *Jas. Webber, Wholesale Apple Market.*

Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz.	4 0	..	Mint, green, bunch	0 6	1 0
— Jerusalem, p. lb	0 3	..	Mushrooms, per pott.	1 0	2 0
Asparagus (English), per bundle	.. 6	0–10 0	Onions, young, bun.	0 4	0 6
— French	.. 2	0– 5 0	Parsley, per bunch.	0 4	..
Beans, French, p. 100	1 3	2 6	Peas, green, per lb.	1 0	..
— Longpod, basket	5 0	..	Potatos (new), baskt.	1 0	..
Beet, per doz.	.. 1	0– 2 0	— new Jersey, p. lb.	0 6	1 6
Cabbages, per doz.	.. 1	0– 2 0	— Sweet, per lb.	.. 0	6– ..
Carrots, per bunch.	0 6	..	Radishes, per bunch.	0 1	0 3
— new, do.	.. 2	0– ..	— Spanish, doz.	.. 1	0– ..
Cauliflowers, p. doz.	2 0	4 0	— French	.. 0	6– ..
Celery, per bundle	.. 1	6– 2 0	Rhubarb, per bundle	0 6	1 0
Cucumbers, each	.. 0	6– 2 0	Salsafy, per bundle	.. 0	9– ..
Endive, per doz.	.. 1	0– 2 0	Seakale, per punnet	1 0	3 0
— Batavian, p. doz.	2 0	3 0	Shallots, per lb.	.. 0	3– ..
Herbs, per bunch	.. 0	2– 0 4	Spinach, per bushel	3 0	..
Horse Radish, p. bun.	3 0	5 0	Tomatos, each	.. 0	9– ..
Leeks, per bunch	.. 0	2– 0 4	Turnips, per bunch	0 4	..
Lettuces, per score	.. 2	0– ..	— New French, do.	2 0	..

Potatos — Rocks, 105*s.* to 110*s.*; Regents, 120*s.* to 170*s.*; Flukes, 130*s.* to 160*s.*; Victorias, 120*s.* to 160*s.* per ton. Old stocks nearly exhausted.

Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1 6–	5 6	Oranges, per 100	.. 6	0–12 0
Cobs and Filbts., lb.	0 9–	1 0	Peaches, per doz.	..21	0–36 0
Gooseberries, gr., qt.	2 0–	..	Pears, per doz.	.. 3	0–15 0
Grapes, per lb	.. 4	0–18 0	Pine-apples, p. lb.	.. 1	6– 4 0
Lemons, per 100	.. 6	0–10 0	Strawberries, per oz.	0 3–	1 3

Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per doz.	..24	0–60 0	Fuchsia, per doz.	.. 9	0–18 0
Begonias, per doz.	.. 6	0–12 0	Genista, do.	.. 6	0–18 0
Bouvardias, do.	..12	0–18 0	Heaths, in var., doz.	12	0–30 0
Calceolaria, per doz.	12	0–24 0	Lily of Valley, doz.	12	0–30 0
— herbaceous, doz.	0	0–18 0	Mignonette, do.	.. 6	0– 9 0
Cineraria, per doz.	.. 6	0–18 0	Myrtles, do.	.. 3	0– 9 0
Cyclamen, do.	.. 9	0–18 0	Palms in variety, each	3	6–21 0
Cyperus, do.	.. 6	0–12 0	Pelargoniums, scarlet, per doz.	..	4 0– 9 0
Deutzia, do.	.. 6	0–18 0	— in variety, doz.	18	0–36 0
Dielytra, do.	..12	0–24 0	Roses, Fairy, do.	.. 9	0–15 0
Dracæna terminalis	30	0–60 0	— various, do.	..18	0–30 0
— viridis, per doz.	18	0–24 0	Spiræa, per doz.	.. 9	0–24 0
Epacris, do.	..12	0–18 0	— palmata, each	.. 2	0– 5 0
Ficus elastica	.. 2	6–15 0			

CUT FLOWERS.

	s.d.	s.d.		s.d.	s.d.
Arum Lilies, per doz.	4 0	12 0	Nemophila, 12 bun.	1 6	4 0
Azaleas, 12 sprays ..	0 6	2 0	Pelargoniums, 12 spr.	0 9	2 0
Camellias, per doz...	1 6	12 0	— Zonal do. ..	0 6	1 6
Carnations, 12 blooms	2 0	4 0	Pinks, white, p. doz.	1 0	2 0
Cineraria, per bunch	1 0	2 0	Primula, dbl., p. bun.	1 0	1 6
Eucharis, per doz. ..	6 0	12 0	Rhododend., 12 lds.	1 6	6 0
Gardenia, per doz. ..	2 0	9 0	Roses, indoor, p. doz.	1 6	10 0
Heliotropes, 12 spr.	0 6	1 0	Spiræa, 12 sprays ..	1 0	4 0
Lily of Valley, 12 spr.	1 0	4 0	Stephanotis, 12 sprays	4 0	15 0
Mignonette, 12 bun.	6 0	9 0	Violets, 12 bunches..	1 0	4 0
Narcissus, per dozen	0 6	3 0			

SEEDS.

LONDON: *May* 3.—Considering we are now in May, greater activity than might have been expected is seen in the seed trade. Owing to the extremely high prices of this spring, the provincial seedsmen have naturally kept their stocks very low, so that the protracted sowing demand of the present late season obliges them to continually send for further supplies. Alsike, Trefoil, and white Clover, being scarce, keep firm. For red Clover seed holders are taking less money; the quantity remaining, although not large, is more than sufficient for the demand. Grass seeds are also obtainable on lower terms. Spring Tares, with a limited inquiry, exhibit a further fall. In Rape and Mustard seed there is a fair trade doing at full rates. Canary seed is reported to be dearer in Holland, but the transactions in the article on this market are unimportant. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday trade was dull. Millers were not tempted to operate in Wheat beyond their immediate wants, and a little less money was not generally refused. In Barley sales were difficult to close without submitting to some reduction on last week's rates. Malt was quiet, and about the same in price. Sound Oats were steady in price, but rather lower prices were accepted for inferior produce. Maize was somewhat cheaper, and both Beans and Peas were lower when forced for sale. The flour market was inactive, and prices favoured buyers.—On Wednesday the superior qualities of Wheat were held for the sales of Monday. Barley was cheaper when pressed for sale, and malt with difficulty supported late prices. Oats were slow of sale, as also was Maize, and the quotations for both had a tendency in buyers' favour. Beans and Peas were quoted as before, and there was no change reported in flour.—Average prices for the week ending April 29:—Wheat, 44*s.* 11*d.*; Barley, 34*s.* 1*d.*; Oats, 26*s.* 3*d.* For the corresponding week last year:—Wheat, 42*s.* 10*d.*; Barley, 38*s.* 10*d.*; Oats, 30*s.*

CATTLE.

At the Metropolitan Market on Monday trade in beasts was active, and our top quotation was exceeded in a few instances. Trade in sheep was not quite so brisk, but there was no quotable alteration in price. Trade was heavy for lambs and calves, at lower rates. Quotations:—Beasts, 3*s.* 4*d.* to 4*s.* 10*d.*, and 5*s.* 4*d.* to 5*s.* 10*d.*; calves, 5*s.* to 6*s.*; sheep, 5*s.* 4*d.* to 6*s.*, and 6*s.* 4*d.* to 6*s.* 10*d.*; pigs, 4*s.* 4*d.* to 5*s.* 4*d.*—On Thursday, in the beast market, the demand was moderate, and the quotations were about the same as on Monday. Sheep and lambs both sold well at advanced rates. There was a strong muster of calves, but prime supported late value; rough sorts sold badly.

HAY.

At Whitechapel, on Tuesday, the supply of fodder on sale was rather large, but the trade was steady, and prices were quoted firm. Prime Clover, 100*s.* to 150*s.*; inferior do., 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 135*s.*; inferior do., 55*s.* to 75*s.*; and straw, 35*s.* to 50*s.* per load.—On Thursday trade was steady. Quotations:—Clover, best, 120*s.* to 150*s.*; inferior, 85*s.* to 95*s.* Hay, best, 112*s.* to 135*s.*; inferior, 55*s.* to 75*s.*; straw, 38*s.* to 50*s.* per load.—Cumberland market quotations:—Superior meadow hay, 140*s.* to 147*s.*; inferior, 100*s.* to 115*s.*; superior Clover, 150*s.* to 160*s.*; inferior, 120*s.* to 130*s.*; and straw, 48*s.* to 52*s.* per load.

POTATOS.

The Borough and Spitalfields reports for the 1st inst. state that trade continued steady, and prices showed very little change. The supplies were moderate of both home and foreign Potatos. Quotations:—Kent Regents, 125*s.* to 170*s.* per ton; Essex do., 115*s.* to 160*s.*; rocks, 100*s.* to 120*s.*; Victorias, 130*s.* to 180*s.*; flukes, 140*s.* to 180*s.*; kidneys, 110*s.* to 140*s.*—The market at King's Cross on Monday was firm, at the following quotations:—York and Lincoln flukes, 180*s.* to 220*s.*; do., Victorias, 160*s.* to 180*s.*; do., Regents, 150*s.* to 170*s.*; do., rocks, 100*s.* to 120*s.*; East Lothian Regents, 160*s.* to 200*s.*; Perth and Fife do., 140*s.* to 160*s.*; do., rocks, 110*s.* to 120*s.*; French whites, 70*s.* to 76*s.*; do., seedlings, 100*s.* to 105*s.*; Dutch rocks, 100*s.* to 105*s.*; Belgium kidneys, 100*s.* to 105*s.*; German reds, 100*s.* to 120*s.*

COALS.

In the market on Monday best house coals were 6*d.* per ton lower, while seconds recovered 6*d.* per ton. Wednesday's market was firm all round. Quotations:—Bedside West Hartley, 18*s.* 3*d.*; Walls Ends—Harton, 18*s.* 9*d.*; Lambton, 21*s.*; Original Hartlepool, 21*s.* 6*d.*; Newbottle, 18*s.*; Kelloe, 19*s.*; East Hartlepool, 21*s.* 3*d.*; Tees, 21*s.* 3*d.*

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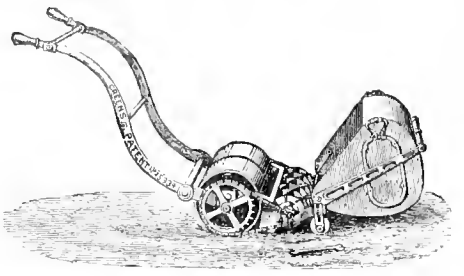

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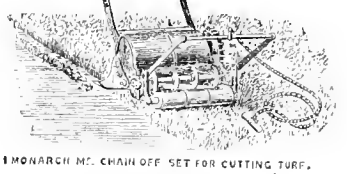

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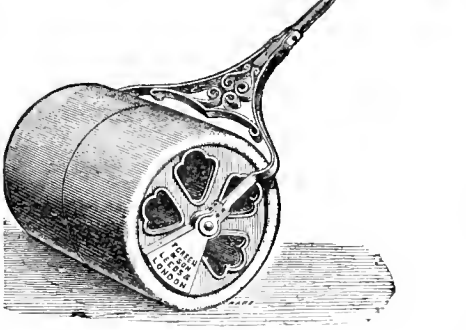

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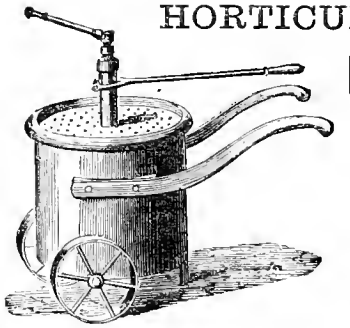

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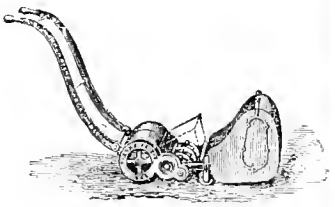

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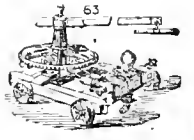

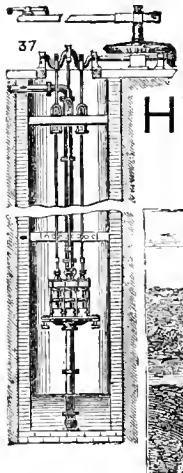

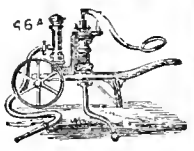

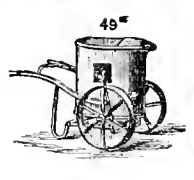

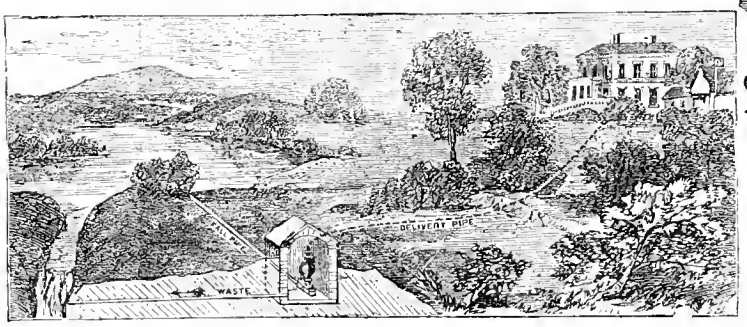

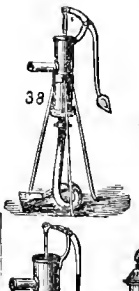

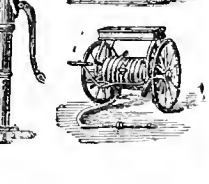

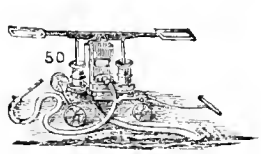

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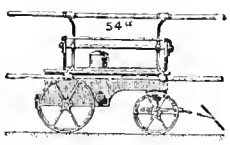

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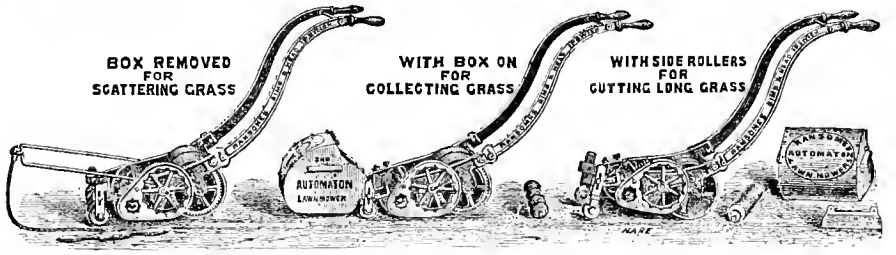

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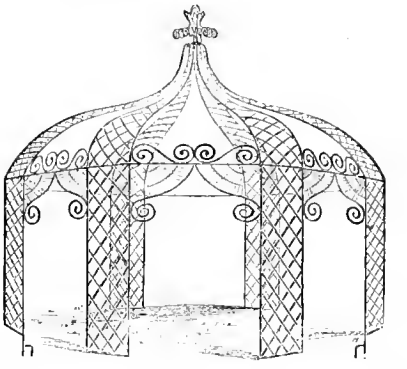

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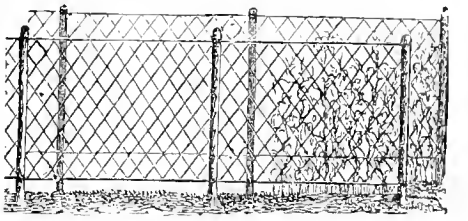

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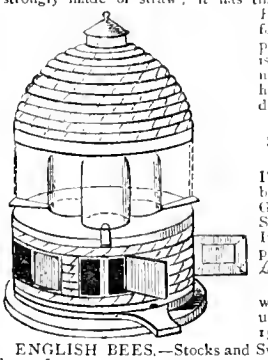

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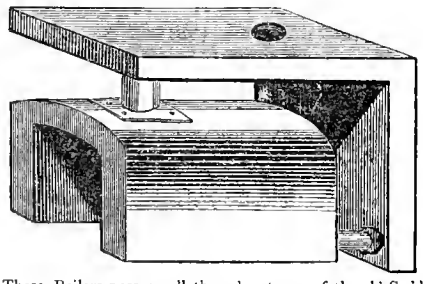

These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements—viz., the water space at back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel ; the cost of setting is also considerably reduced, and likewise the space occupied ; at the same time these Boilers are simple in construction, and being made of wrought iron are not liable to crack. They are made of the following sizes :—

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20 ,,	18 ,,	24 ,,	400	8	0	0
20 ,,	18 ,,	30 ,,	500	9	0	0
24 ,,	24 ,,	24 ,,	700	12	0	0
24 ,,	24 ,,	30 ,,	850	14	0	0
24 ,,	24 ,,	36 ,,	1,000	16	0	0
24 ,,	24 ,,	48 ,,	1,400	20	0	0
28 ,,	28 ,,	60 ,,	1,800	25	0	0

Larger sizes if required.

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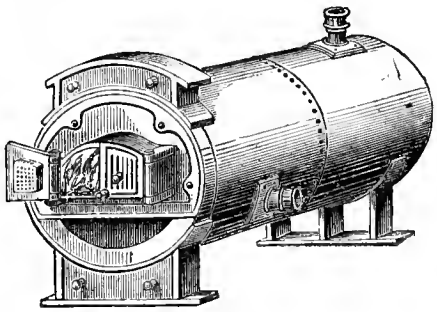

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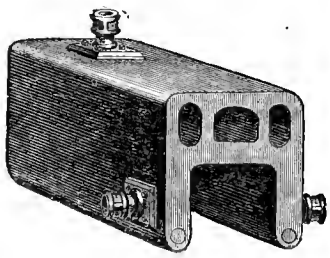

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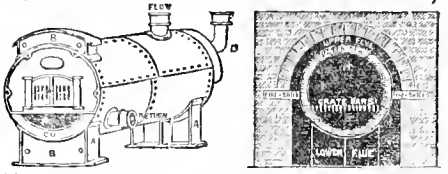

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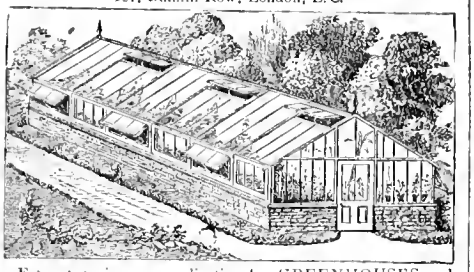

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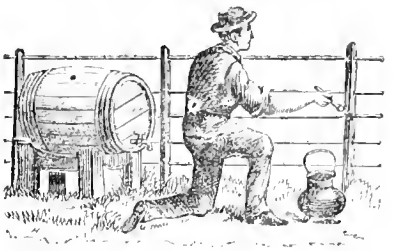

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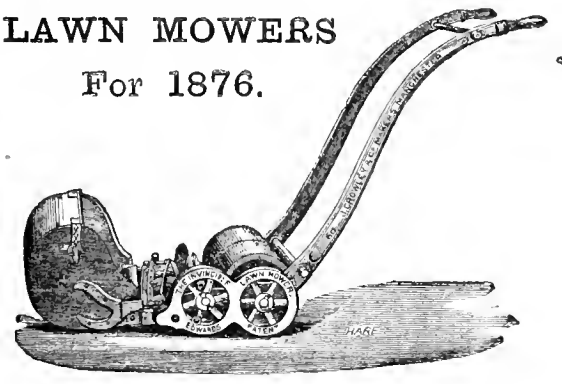

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FOREMAN, in a Gentleman's Garden.—Age 24, understands Stove and Greenhouse Plants, and all kinds of Forcing. Five years' excellent character Address, stating full particulars, to H. A., 1, Masbro' Road North, Hammersmith, W.

FOREMAN, or good SECOND in the Houses.—Age 25; nine years' experience. Bothy preferred. First-class character.—H. W., Post Office, Upper Holloway, London, N.

FOREMAN, or SECOND, in a Nobleman's or Gentleman's Establishment.—Age 23; understands Early and Late Forcing, &c. Eleven years' experience Good character as to honesty, sobriety, industry, &c. J. B., The Cross, Paignton, Devon.

JOURNEYMAN (in the Houses).—Age 20; six years' experience. Good character from previous situation —W. C., The Gardens, Buckleton Hall, Dunster.

IMPROVER, in a Gentleman's Establishment.—Age 21; can have a good character from present situation —W. FULLER, Spixworth Park, Norwich.

IMPROVER, in the Houses.—Age 20; three years' good character.—Apply, stating particulars, to G. T., Huntercombe Gardens, near Maidenhead, Berks.

To Nurserymen and Seedsmen.

IMPROVER.—A young Man, age 16, having a partial knowledge of Gardening, is desirous of engaging himself with a view of learning the business Reply, stating terms, to G. B., *Gardeners' Chronicle* Office, W.C.

GARDEN BOY.—Age 16; has been two and a-half years in a Gentleman's Garden under a Gardener. Good character. Greenhouse preferred.—J. S., Panton, Newsagent, 10, New Quebec Street, Portman Square, W.

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PROPAGATOR (HARD-WOODED), and GROWER, First-class —Will be shortly disengaged.—A. B., Pine-apple Nursery, Maida Vale, N.W.

TRAVELLER.—Messrs. MINIER, NASH & Co. will shortly require an active, energetic, experienced Man to take a journey through the North of England, Scotland, and Ireland; one who has already taken this journey would be preferred —Address full particulars to 60, Strand, W.C.

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This celebrated and most delicious old mellow spirit is the very CREAM of IRISH WHISKIES, in quality unrivalled, perfectly pure, and more wholesome than the finest Cognac Brandy. Note the Red Seal, Pink Label, and Cork branded "Kinahan's LL" Whisky.
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ELLIS'S RUTHIN WATERS.
CRYSTAL SPRINGS—Soda, Potass, Seltzer, Lemonade, Lithia, And for GOUT, Lithia and Potass.
Corks Branded "R. ELLIS AND SON, RUTHIN," and every label bears their trade mark. Sold everywhere, and Wholesale of ELLIS & SON, Ruthin, N. Wales. London Agents: W. BEST AND SONS, Henrietta St., Cavendish Sq.

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The best remedy for ACIDITY of the STOMACH, HEARTBURN, HEADACHE, GOUT, and INDIGESTION; and the safest aperient for delicate Constitutions, Ladies, Children, and Infants.
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172, New Bond Street, London, and all Chemists.

HOLLOWAY'S OINTMENT and PILLS.
The seeds of disease are often unconsciously sown by some neglect of those precautions which are so necessary in this changeable climate of ours, the earlier symptoms of deranged health are often neglected, and hence another great source of after-consequences of a serious character arises. Amongst the precautions most necessary at the change of the season is that of attention to the clothing, and to the advent of any cough or throat disorder, which should at once be treated by these remedies, which will quickly remove all chance of their taking hold of the system and producing consumptive symptoms. A few doses of these Pills are the best remedy for all hepatic and dyspeptic symptoms.

THE "ARCHIMEDEAN"
AMERICAN LAWN MOWER

HAS BEEN AWARDED

GRAND DIPLOMA of HONOURABLE MENTION, Vienna, 1873.
SILVER MEDAL, Vienna, 1870. SILVER MEDAL, Hamburgh, 1869.

NOTE.—The "Archimedean" was specially selected from the Mowers exhibited at Vienna for constant use in the Exhibition Grounds, and gave great satisfaction; and we have pleasure in calling attention to the following Testimonial, received from the Inspector of the Royal Gardens, Schonbrun, Vienna:—

"Your 'Archimedean' Lawn Mowers have been used for some time past at the Imperial Gardens, and I have great pleasure in stating that they have given perfect satisfaction. Their quick and good work prove them to be the best and most efficient machines of the kind."

OPINIONS OF THE PRESS.

"The quickest, most simple, and most efficient Mower ever used."—*Gardeners' Chronicle.*

"Far superior to any of ours."—*The Field.*

"Remarkably easy to work."—*Gardeners' Mag.*

"We feel bound to recommend it to our readers as one of the best Mowers we have as yet made acquaintance with."—*Florald World.*

PATRONIZED BY

HER GRACIOUS MAJESTY THE QUEEN,
HER IMPERIAL MAJESTY THE EMPRESS OF GERMANY,
THE LATE EMPEROR OF THE FRENCH,
HIS ROYAL HIGHNESS THE PRINCE OF WALES,
HIS IMPERIAL MAJESTY THE EMPEROR OF AUSTRIA,
THE VICEROY OF EGYPT,
And many of the Nobility and Gentry of Great Britain.

CHIEF ADVANTAGES.

They are extremely LIGHT IN DRAUGHT, SIMPLE IN CONSTRUCTION, WELL MADE, and NOT LIKELY TO GET OUT OF ORDER.

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They can be USED either WITH or WITHOUT GRASS BOX, as may be desired.

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From A. F. BARRON, Esq., *Royal Horticultural Society, Chiswick Gardens, W.*

"GENTLEMEN,—We have now had your 'Archimedean' Lawn Mower in use for several months, and without hesitation I can truly say it is the *best* and *most efficient* implement of the kind we have ever used."

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From the Rev. A. MCALLISTER, *Plumstead Vicarage, London.*

"I have the pleasure of forwarding a cheque for the 'Archimedean' Lawn Mower which I had from you, and which does its work admirably."

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6-inch, Suitable for Small Grass Plots								£1	1	0	14-inch, Suitable for a Man							£5	5	0
8	,,	,,	,,	,,				2	2	0	16	,,	,,	,,	on Level Lawns			6	6	0
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12	,,	,,	,,	,,				4	4	0	20	,,	,,	,,	,,			8	8	0

Grass Boxes, 6-inch, 4*s.*; 8-inch, 5*s.*; 10 and 12 inch, 7*s.* 6d.; 14, 16, 18, and 20-inch, 10*s.* each.

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NO CHARGE FOR PACKING CASES, which are most convenient for storing the Machine during Winter.

EVERY MOWER IS WARRANTED TO GIVE AMPLE SATISFACTION,
And if not approved of may be returned within a Month, and the amount paid be refunded.

Before purchasing a Lawn Mower send for Catalogue, containing Opinions of the Press and Testimonials from Gentlemen of high position in the Horticultural World, Noblemen, Clergymen, and others.

WILLIAMS & CO. (Limited), Manufacturers and Patentees, 33, King William Street, London, E.C.

Selling Agents: JOHN G. ROLLINS & CO., Old Swan Wharf, Upper Thames Street, London, E.C.
WALTER CARSON & SONS, La Belle Sauvage Yard, Ludgate Hill, E.C.; and 21, Bachelor's Walk, Dublin. Selling Agents

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THE

GARDENERS' CHRONICLE.

Established 1841.

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Subscribers who wish to have "The Gardeners' Chronicle" forwarded DIRECT FROM THE OFFICE are respectfully informed that payment MUST BE MADE IN ADVANCE.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE.—SCIENTIFIC, FRUIT, and FLORAL COMMITTEES' MEETINGS on WEDNESDAY next, May 17, at 11 o'Clock. GENERAL MEETING at 3. Admission, 1s.

ROYAL BOTANIC SOCIETY, Gardens, Regent's Park, N.W.
SUMMER EXHIBITIONS of PLANTS, FLOWERS, and FRUIT, WEDNESDAYS, May 24, June 21. Tickets to obtained at the Gardens only, by Vouchers from Fellows of the Society, price 5s. each, or on the days of Exhibition, 7s. 6d. each. Gates open at 2 o'Clock.

ROYAL BOTANIC SOCIETY, Gardens, Regent's Park, N.W.
CONSERVATORY FÊTE and EXHIBITION of FLOWER BEDS, THURSDAY, June 1. As the space is limited, it is requested that all entries be made at an early date. SCHEDULES of PRIZES, &c., are now ready, and can be obtained by post or otherwise. W. SOWERBY, Secretary.

CRYSTAL PALACE.—GREAT FLOWER SHOW of the Season.—First Day, FRIDAY, May 19. Admission, 7s. 6d.; by ticket purchased before the day, 5s.; or by Guinea Season Ticket.

ALEXANDRA PALACE.—The GREAT ROSE SHOW of the Season will be held on FRIDAY and SATURDAY, July 7 and 8. LAST DAY of ENTRY, July 1. Schedules of Prizes and all particulars may be had on application to ALEX. McKENZIE, 1 and 2, Great Winchester Street Buildings, E.C.; and at the Alexandra Palace, Muswell Hill, N.

ROYAL AQUARIUM SUMMER and WINTER GARDEN, Westminster.
NOTICE.—The next GRAND FLOWER SHOW will be held on TUESDAY and WEDNESDAY next, May 16 and 17. Exhibitors are requested to have their plants staged as early as possible on Tuesday morning.

ROYAL MANCHESTER BOTANICAL and HORTICULTURAL SOCIETY.
Patron—HER MAJESTY THE QUEEN.
The GRAND NATIONAL HORTICULTURAL EXHIBITION of 1876 will open on June 2, in the Society's Gardens, Old Trafford. Entries close on May 24.
By order of the Council,
BRUCE FINDLAY, Curator and Secretary.
Royal Botanic Gardens, Old Trafford.

THE TORBAY HORTICULTURAL SOCIETY.—The Committee have the pleasure to announce that their SUMMER SHOW will be held at Torquay on JUNE 29 and 30. FIFTY POUNDS will be offered as Especial Prizes for CUT ROSES (open to all England). Classes for FRUIT and VEGETABLES (open). Prize Lists, &c., ready. Entries close on Friday, June 23.
W. FANE TUCKER, Capt., Hon. Sec. T. H. Soc.
Braddon Tor, Torquay.

NOTTINGHAM and MIDLAND COUNTIES GRAND ROSE SHOW and HORTICULTURAL EXHIBITION will be held at the Nottingham Arboretum on JULY 6 7, 8, and 10 NEXT.
Schedules will be ready shortly.

SUTTON'S GRASS SEEDS for PASTURES, 22s. 6d. to 36s. per Acre. Carriage free.

SUTTON'S GRASS SEEDS for PARK GROUNDS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for GARDEN LAWNS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for CROQUET GROUNDS, 20s. per Bushel. Carriage free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

Notice.

MESSRS. DICKSON AND TURNBULL, NURSERYMEN and SEEDSMEN, Perth, beg to intimate that they have NO CONNECTION WITH THE FIRM IN HAWICK who some years ago assumed a similar Title, and whose name appears in the *Gazette* of this date.
26, George Street, Perth.—May 3, 1876.

To the Trade.

ASPARAGUS, 1-yr., 2-yr., and 3-yr. TROPÆOLUM CANARIENSE.
JAMES BIRD, American Nurseries, Downham.

To the Seed Trade.

H. AND F. SHARPE'S special SPRING CATALOGUE of home-grown MANGEL WURZEL, TURNIP, and other AGRICULTURAL and GARDEN SEEDS, is now ready, and will be forwarded on application.
Seed Growing Establishment, Wisbech.

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JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself.
Bardney Manor, Lincoln.

ROBINSON'S CHAMPION OX CABBAGE plants, strong, 2s. 6d. per 1000.
THOMAS PERKINS, 42, Drapery, Northampton.

CABBAGE PLANTS, CABBAGE PLANTS.—Robinson's Champion Drumhead Cabbage Plants, at 2s. per 1000.
J. PERKINS AND SON, 52, Market Square, Northampton.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

Hardy Perennials Illustrated.

THOS. S. WARE'S CATALOGUE of the above for 1876, including New, Rare, and Choice Alpines, Herbaceous Plants, Aquatics, Bog Plants, and a few Bulbs, is now ready, free on application.
Hale Farm Nurseries, Tottenham, London.

To Nurserymen and Gardeners.

BAMBOO and SAVANNA CANES.—The largest and best assorted lot of Bamboo and Savanna Canes in England. Apply for price and samples at HARKIN'S Timber Yard, Dutton Street, Liverpool.

TREE FERNS.—An English Gardener is now collecting and sending to England the best specimens of Dicksonia antarctica from the coolest districts of Tasmania, from 4 feet to any height required. Freight and all expenses paid to London. For price and all particulars apply to Mr. WALKER, 9, Mount Pleasant, Tunbridge Wells.

CENTAUREA CANDIDISSIMA, in single pots, nice plants, 20s. per 100, package included. Not less than 25 at the above price. Half to quarter specimens.
KALOSANTHES COCCINEA, well set for flower, 3s. 6d., 5s., to 7s. 6d. each.
JOHN HOUSE, Eastgate Nurseries, Peterborough.

Bedding Plants.

J. SCOTT, The Nurseries, Merriott, Somerset, has now ready a choice and extensive assortment of the above. CATALOGUES on application.

Bedding Plants.

F. W. COOPER can supply the Trade and others with the above in large quantities. The stock is well grown and healthy, the plants all in separate pots. Priced List on application.
F. W. COOPER, Florist, Huntingdon.

HOLLYHOCKS.—Choice named seedlings, 30s. and 40s. per 100; will flower this season. List free.
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Offices: 22, Barton Arcade, MANCHESTER.

Wood Engraving.

MR. W. G. SMITH, ARTIST and ENGRAVER on WOOD, 15, Mildmay Grove, London, N.

WANTED, 200 FLOWER of the DAY GERANIUMS, strong, bushy Plants. Quote lowest price to
H. BLANDFORD, The Dorset Nurseries, Blandford.

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CORYPHA AUSTRALIS.—Fresh Seed just arrived in excellent condition. Price per 1000, 5000, 10,000, or 20,000 on application.
WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

JOSEPH LEIGH can still supply Plants as Advertised in the *Gardeners' Chronicle* of May 6.
Sandy Lane Nursery, Lowton, near Newton-le-Willows.

VERBENAS for the MILLION.—Purple King, Crimson, Scarlet, White, Pink, and other varieties, spring-struck, 6s. per 100. Strong plants of all the above colours, well hardened, 8s. per 100. Package free for cash.
S. BIDE, Alma Nursery, Farnham.

VERBENAS, VERBENAS, VERBENAS.—White, Purple, Scarlet, and Pink; also twelve extra choice named varieties, strong, healthy-rooted cuttings, perfectly free from disease, 6s. per 100, 50s. per 1000, for cash.
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WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

VERBENAS: 20,000 clean, healthy-grown plants of all the leading varieties, established in single pots; price, per 100 or 1000, to
GEO. COOPER, Rose Hill Nursery, Derby.

Verbenas, Verbenas.

JOHN SOLOMON offers White, Scarlet, Purple, Pink, Crimson, Rose, and other mixed sorts, good strong spring-struck cuttings, well rooted, at 6s. per 100, 50s. per 1000, package included. Cash to accompany all orders.
Islington Nursery, Park Street, Islington, N.

Notice.—Seeds, Seeds.

WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds. CATALOGUES now ready, which contain every requisite, at fair prices, post-free on application.
Highgate, London, N.

Plant Catalogue.

CHARLES TURNER'S DESCRIPTIVE LIST of PLANTS for the Season, including several new varieties now offered for the first time, is ready, and may be had on application.
The Royal Nurseries, Slough.

DICK RADCLYFFE AND CO. are prepared to offer Single White Roman Hyacinths for delivery in August next, Garden Labels, Flower Sticks, Cape Flowers, Wreaths, and every Sundry supplied to the Trade. Price List on application. Cork Brackets and Pockets, 9s., 12s., 18s., and 24s. per doz.; Wire Hanging Baskets, 12s., 18s., 24s., 36s. per doz.
128 and 129, High Holborn, London, W.C.

To the Trade.

DAHLIAS, VERBENAS, TEA ROSES, PYRETHRUMS, GLOXINIAS, and PHLOXES. Prices on application to
KELWAY AND SON, The Royal Nurseries, Langport, Somerset.

60,000 Roses in Pots.

ROSES for BEDDING, at 12s. to 18s. per dozen, and 80s. per 100; splendid plants.
WM. WOOD AND SON, The Nurseries, Maresfield, Uckfield, Sussex.

TEA-SCENTED ROSES.—Strong plants, of best varieties, for Bedding or General Decoration, at 12s. per dozen, 80s. per 100. Immense Stock of GREENHOUSE and BEDDING PLANTS, which are worth growing. See CATALOGUE, free on application.
WILLIAM KNIGHT, Floral Nursery, Hailsham, Sussex.

Roses New and Old.

EDWIN HILLIER offers the above in all the best varieties. The plants are most healthy, and very vigorous. PRICE LISTS on application.
The Nurseries, Winchester.

LETTY COLES.—This Rose is now being sent out; plates may be had for eighteen stamps. The finest Tea Rose sent out for years.
JOHN KEYNES, Nurseryman, Salisbury.

PASSIFLORA CŒRULEA, seedlings 2 to 3 inches high, in seed pans, 24s. per dozen.
OSBORN AND SONS, Fulham Nursery, London, S.W.

SALES BY AUCTION.

IMPORTANT SALE this DAY at TWELVE O'CLOCK PRECISELY, at the Pine-apple Nursery, St. John's Wood.

MR. J. C. STEVENS, having sold the Lease of the Pine-apple Nursery, is now instructed to SELL by AUCTION, on the Premises, Pine-apple Nursery, Edgware Road, St. John's Wood, THIS DAY and Three following days, at 12 o'Clock precisely each day, the first portion of the valuable stock of STOVE and GREENHOUSE PLANTS, including many fine specimens of Azaleas, Camellias, Ericas, Epacris, Tree Ferns, Palms, Orange Trees, &c., fancy and other Pelargoniums, also an unlimited quantity of Bedding Plants of the best and newest varieties.

On view and Catalogues had on the Premises, and of Mr. J. C. Stevens, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

N.B.—The second portion and final clearance of the whole stock, consisting of a valuable collection of Plants, and also the Implements in Trade, Horses, Carts, Vans, &c., will be Sold by Auction on Thursday, May 25, and several following days.

Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, May 15, at half-past 12 o'Clock precisely, a few very choice and rare ORCHIDS, just received from Brazil per *Minho*, all in the finest possible condition, consisting of some very fine plants of the rare Lælia elegans, amongst which will be found the Warneri variety: Oncidium Forbesii (true), very rare; Oncidium marginatum (true), see dried flowers—this is a beautiful species and very rare; Oncidium Marshallianum (true), the finest masses ever imported; Oncidium concolor (true), splendid masses; Oncidium crispum, very fine masses and quite distinct in bulb; Oncidium sarcodes (true); splendid plants of Burlingtonia fragrans (true), this lovely plant is very rare; Ionopsis paniculata, Lælia Perrini grandiflora; and a few fine plants of the very distinct and rare Cattleya bicolor, &c.; also an Importation of fine masses of Lælia autumnalis, Odontoglossum Ehrenberghi, and other Orchids just arrived from Mexico in fine condition.

On view the morning of Sale, and Catalogues had.

Leytonstone, E.

HIGHLY IMPORTANT SALE of CHOICE BEDDING PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the American Nurseries, Leytonstone, Essex, adjoining the Railway Station, on SATURDAY, May 20, at 2 o'Clock precisely, about 15,000 BEDDING and GREENHOUSE PLANTS, remarkably well grown, comprising 5000 Geraniums in all the leading varieties, thousands of Calceolarias, Lobelias, Verbenas, Coleus, and the usual assortment of Plants for Bedding; choice Azalea indica, Ericas, fine Pelargoniums, hardy Scarlet and other Rhododendrons, Clematis, &c., Standard and Dwarf Roses, Vines, Scarlet and White Intermediate Stocks, &c.

May be viewed the day prior and morning of Sale. Catalogues had on the Premises and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Haverstock Hill, N.W.

IMPORTANT SALE of 20,000 well-grown GREENHOUSE and BEDDING PLANTS, comprising 6000 Geraniums, including Vesuvius, Mrs. Pollock, and many other choice varieties; 2000 Calceolarias, 2000 Verbenas, 1000 Heliotropes, 1000 Ageratums, 500 Standard and Dwarf Roses in pots, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above on the Premises, the Haverstock Hill Nursery, opposite Belsize Avenue, Hampstead, N.W., close to the Chalk Farm Railway Station, on SATURDAY, May 20, at 12 for 1 o'Clock precisely.

On view day prior and morning of Sale. Catalogues had on the Premises; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Hornsey, N.

IMPORTANT ANNUAL SALE of about 50,000 unusually well grown GREENHOUSE and BEDDING PLANTS in rich assortment, consisting of Verbenas, Heliotropes, Petunias, Ageratums, Alternantheras, Gazanias; about 25,000 choice Geraniums, the whole of which are wintered plants, comprising Mrs Pollock, Lady Cullum, Vesuvius, Christine, Madame Vaucher, and other well known varieties; 4000 Lobelias of sorts, 3000 Calceolarias of sorts, together with some choice Greenhouse Plants in bloom, comprising Spiræas, Pelargoniums, Fuchsias, Ferns, Stocks, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, the Hornsey Nursery, Hornsey, N., close to the Hornsey Station, Great Northern Railway, on THURSDAY, May 25, at 12 o'Clock precisely.

On view day prior, and Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Bagshot, Surrey.

UNRESERVED SALE of the First Portion of the HEATHERSIDE COLLECTION of POT PLANTS, including 5000 Choice TEA ROSES, 5000 thriving CLEMATIS, and other valuable Stock.

MESSRS. PROTHEROE AND MORRIS are instructed by the Directors of the Heatherside Nursery Company to SELL the above by AUCTION on the Premises, The Heatherside Nursery, Bagshot, on TUESDAY, June 6.

More detailed particulars will shortly appear.

Mogden Lane, Isleworth.

Re R. TURNBULL, Deceased.—To MARKET GARDENERS, FLORISTS, &c.

MR. J. S. GOMME is instructed by the Executors of the late Mr. R. Turnbull to SELL by AUCTION, at the "George Inn," Isleworth, on TUESDAY, May 16, at 5 for 6 o'Clock in the evening (unless previously disposed of by Private Contract, of which due notice will be given), the valuable unexpired LEASE of the excellent detached EIGHT-ROOMED DWELLING-HOUSE, SHEDS, &c., with about 4 acres of MARKET GARDEN LAND, planted with the best sorts of Fruit Trees, Bushes, and Strawberries, in the highest possible state of Cultivation, together with the Erections of GRAPERIES, Pits and Glass thereon, one House 100 feet long, having a splendid crop of Muscat Grapes, ready for market, and two others of choice sorts in succession. Held at the nominal rental of £27 10s. per annum.

May be viewed by cards only, to be obtained of the Auctioneer, and particulars and Conditions of Sale obtained at the place of Sale, of Messrs. MILWARD AND WHITEHEAD, Solicitors, 40, Chancery Lane; and at the Offices of the Market Garden Auctioneer and Valuer, 12, York Street, Covent Garden, W.C.

To Market Gardeners, Fruit Growers, and Others.

MR. J. S. GOMME is instructed to DISPOSE OF, by PRIVATE TREATY (the Proprietor retiring from Business), the valuable LEASES of about 70 acres of well-known and first-class MARKET GARDEN LAND, situate about 4 miles from Covent Garden Market; is in the highest possible state of Cultivation, well and judiciously Cropped, and second to none in England. There are 19 acres of Asparagus, 13 acres of Fruit, and 40 acres of Open Land, capital and convenient DWELLING-HOUSE, large BARNS and PACKING-SHEDS, FRUIT-ROOM, STABLING for eight horses, CART SHEDS, &c. The Crops, Dressings, Half-Dressings, &c., are to be taken at a valuation. The Land may be viewed by cards, which may be obtained, with all further particulars, on personal application only to

Mr. J. S. GOMME, Market Garden Auctioneer and Valuer, 12, York Street, Covent Garden, W.C.

To Market Gardeners, Fruit Growers, &c.

MR. J. S. GOMME is instructed to DISPOSE of, by PRIVATE TREATY, the valuable LEASE of 16 acres of FRUIT LAND, well stocked with the choicest sorts, and in first-rate order. There is a capital roomy DWELLING-HOUSE, PADDOCK, STABLING for four horses, CART SHEDS and PACKING SHEDS, with lofts over. Held for an unexpired term of twelve years at a very moderate rental. Part of the purchase money may remain if required. For further particulars and cards to view apply personally to

Mr. J. S. GOMME, Market Garden Auctioneer and Valuer, 12, York Street, Covent Garden, W.C.

Hammersmith.

In the Fulham Road, opposite the Convent of the Good Shepherds, and near the Broadway.

To GENTLEMEN, FLORISTS, NURSERYMEN, BUILDERS, and Others.—Clearance Sale.

MR. J. A. SMITH is instructed by Mr. Herridge to SELL by AUCTION, on the Premises, The Nursery, Fulham Road, on WEDNESDAY, May 17, at 1 o'Clock, about 30,000 PLANTS, well selected for BEDDING and GREENHOUSE, in first-rate condition, comprising about 12,000 Geraniums, including Princess of Wales, Grand Duchess Czarevna, Miss Herridge, Gloire de Corbeny, Mrs. Pollock, Lady Plymouth, Model, Flower of Spring, Bijou, Madame Vaucher, Christine, Madame Hardy, Rose Rendadler, Madame Mezard, L'Elegante, Lucius, Vesuvius, Wiltshire Lass, and other very choice varieties; 2000 Calceolarias, Golden Gem and aurea; 5000 Mesembryanthemums, Petunias, Heliotropes, Iresines, Alternantheras, Pyrethrums, Coleus; 4000 Lobelias, Blue Gown, speciosa and pumila; and thousands of Pelargoniums, Fuchsias, and fine Greenhouse Plants, and others of the very best varieties and most approved selection.

May be viewed the day prior and morning of Sale. Catalogues may be had on the Premises and of the Auctioneer, 58, King Street, East Hammersmith, W.

Stapleford, Cambridgeshire.

MESSRS. MANN AND RAVEN have received instructions from the Executrix of the late Mr. Richard Headley, to offer for SALE by AUCTION, on TUESDAY, May 23, at 2 o'Clock in the afternoon, the entire valuable and justly celebrated Collection of TULIPS, RANUNCULUSES, &c., together with Stages, Shading, Show Boxes, Boards, Cabinets, and other requisites for the Garden and Show-room.

Catalogues may be had of the Auctioneers, Cambridge.

Stapleford is within five minutes' walk of the Shelford Station on the Great Eastern Railway.

Highly Important Sale of Specimen Plants, Orchids, and AMARYLLIS at MEADOWBANK.

MR. DAVID MITCHELL, AUCTIONEER and VALUER, has been instructed by Mr. James Anderson to SELL on THURSDAY and FRIDAY, May 26 and 27 next, a portion of the highly important Collection of ORCHIDS, AMARYLLIS, NERINES, extraordinary fine specimen AZALEAS and HEATHS, as well as ORNAMENTAL FOLIAGE PLANTS in great variety, all of which are in the finest possible health, and many of them blooming or coming into bloom. The Amaryllis are beyond question the finest breed in the kingdom, and, as many of them will be in flower, it will be a rare opportunity for purchasers. Descriptive Catalogues will be immediately published, and may be had either from

Mr. DAVID MITCHELL, Auctioneer, Hamilton; or from Mr. ANDERSON, at the Nurseries, Meadowbank. Nurseries within three minutes' walk of the Uddingston Station, Caledonian line.

Hamilton, May 5, 1876.

TO BE LET, with Immediate Possession, an old-established FLORIST'S BUSINESS, with Conservatories. Apply for information at the Mall Nursery, Notting Hill Gate, W.

Bedford Hill Estate, Balham.

TURF.—A quantity of Turf to be Sold: apply to Mr. STOCKER, 24, Billiter Street, E.C.

Cinerarias.

MESSRS. JOHN STANDISH AND CO.'S strain of Cinerarias is now acknowledged to be the finest in the Kingdom. Carefully saved Seed may now be had post-free at 2s. 6d., 3s. 6d. and 5s. per packet. Wholesale price to the Trade on application.

Royal Nurseries, Ascot, Berks.

FUCHSIAS or GERANIUMS, post-free, in 12 splendid varieties, 3s.; 12 DAHLIAS, 3s. 6d.; 12 PINKS, 3s.; 12 PETUNIAS, 2s. 6d.; GOLDEN FEATHER and STELLARIA GRAMINEA, 2s. per 100.

W. SMITH, Royal Nursery (near Cemetery), Nunhead, S.E.

Tea-scented Roses in Pots.

WILLIAM FLETCHER offers the above, good, strong healthy plants, now coming into bloom; also new varieties of this and last year. Prices on application.

Ottershaw Nursery, Chertsey.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000; and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.

Wonersh Nursery, Guildford, Surrey.

SANDOWN PARK CLUB.
GRAND FLOWER and FRUIT SHOW.

A GRAND FLOWER and FRUIT SHOW, under distinguished Patronage, will be held in Sandown Park, Esher, Surrey, on FRIDAY and SATURDAY, July 7 and 8, when upwards of £350 will be given in Prizes. Schedules are now ready, and may be had on application to

JOHN WILLS, Royal Exotic Nursery, Onslow Crescent, South Kensington, S.W.

J. WHITTAKER BUSHE, General Manager.

RICHMOND HORTICULTURAL SOCIETY.

President: H.S.H. the Duke of TECK, G.C.B.

Under the Royal and Distinguished Patronage of—
H.R.H. the Duchess of CAMBRIDGE,
H.R.H. the Princess MARY OF CAMBRIDGE, Duchess of TECK,
H.R.H. the Duc D'AUMALE, &c.

The SECOND EXHIBITION of PLANTS, FLOWERS, FRUIT, VEGETABLES, and DINNER-TABLE DECORATIONS, will be held in the Old Deer Park, Richmond Green (by the kind permission of Mr. Fuller), on THURSDAY, June 29, 1876. Schedules may be obtained of the Hon. Secretary.

ALBERT CHANCELLOR, Hon. Sec.

1, King Street, Richmond, S.W.

HORTICULTURAL CLUB,
4, Adelphi Terrace, Strand, W.C.

The Committee beg to announce that the Club is now in full working order, and that, in addition to the Reading, Billiard, and Smoking Rooms, Bedrooms are now provided for the use of Members. Entrance Fee, Two Guineas; Annual Subscription, Two Guineas. Prospectuses can be had on application to the Honorary Secretary at the Club House.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION, for the relief of decayed Farmers, their Widows and Orphans.

Patron—HER MAJESTY THE QUEEN.

President—His Grace the Duke of RICHMOND AND GORDON.

Allowances to Pensioners:—

Married	£40 per annum.
Male	26 ,,
Widows and unmarried Orphan Daughters	20 ,,

Every information to be had of the SECRETARY, by whom Subscriptions and Donations will be thankfully received.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.—The SIXTEENTH ANNIVERSARY FESTIVAL, in aid of the Funds of the Institution, will take place at Willis's Rooms, on WEDNESDAY, May 24, at 6 o'Clock,

The RIGHT HON. LORD CHESHAM in the Chair.

Dinner Tickets 21s., application for which should be made to the SECRETARY, not later than May 22.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.—The ANNUAL GENERAL MEETING will be held at Willis's Room, St. James's, on WEDNESDAY, June 21, at 12 o'Clock precisely; and the ELECTION of PENSIONERS will take place on the same day at 11.30 o'Clock.

All Subscriptions shall be deemed payable on January 1 in each year; and no Contributor shall vote in respect of an Annual Subscription while the same is in arrear.

Offices of the Institution—
No. 26, Charles Street, St. James's, London, S.W.

EVERGREEN OAKS.—A few hundreds, 3 to 6 feet, in pots, 50s. to 150s. per 100. May be planted successfully in exposed situations in May. Apply to CHARLES B. SAUNDERS, Nurseryman, Jersey.

Ferns.

W. AND J. BIRKENHEAD devote almost the whole of their attention to the Cultivation of BRITISH and EXOTIC FERNS. Their Collection consisting of many thousands, they are enabled to offer them by the dozen or hundred, at most reasonable Prices. CATALOGUES sent on application.

Fern Nursery, Sale, near Manchester.

FOR SALE.—Large SPECIMEN PLANTS, established in large tubs and pots, Gardenias, Stephanotis floribunda, Eucharis amazonica, Azaleas, Camellias, Maréchal Niel and other Roses, &c.

The NURSERY, with nineteen years' unexpired Lease, to be DISPOSED OF, with or without the stock of Plants. For further information apply to

Mr. FARRAND'S Paper Mills, Ilford, Essex.

Pelargoniums, Pelargoniums.

JAMES HOLDER'S unrivalled Collection—strong healthy Plants, Show, French, and Fancy varieties, at 35s. per 100, cash, Hamper and Packing included. Extra strong plants, in 48's and 32's, at 9s. and 12s. per dozen, basket and packing extra.

Crown Nursery, Reading.

Fruiting and Planting Vines.

THE COWAN PATENTS' COMPANY (late Meredith) have still on hand a good selection of the above. Catalogues and prices on application. They can also offer good Fruiting and Succession PINES.

The Vineyard, Garston, near Liverpool.

Vines.

E. G. HENDERSON AND SON have fine strong fruiting-sized VINES, in several varieties, of the popular kinds, still to offer.

Wellington Nursery, St. John's Wood, London, N.W.

Double Pyrethrums.

THOMAS. S. WARE recommends the immediate planting of the above and other Hardy Florists' Flowers, including DELPHINIUMS, PHLOXES, DIANTHUS, PENTSTEMONS, &c. For descriptions and prices see New Spring CATALOGUE, free on application.

Hale Farm Nurseries, Tottenham, London.

Hardy Herbaceous Plants.

FREDERICK PERKINS has a large stock of large plants of the most showy Hardy Herbaceous Plants in cultivation, at 6s. per doz., 40s. per 100, in 100 varieties.

F. P. won more than twenty First Prizes at the principal Horticultural Exhibitions in the Midland Counties last summer with collections of Hardy Herbaceous Flowers. None but the most effective grown.

FREDERICK PERKINS, Nurseryman, Regent Street, Leamington.

To the Trade.—New Cineraria Seed Crop, 1876.

F. AND A. SMITH can supply the above (saved from their unrivalled strain) by weight, or in 1s., 2s. 6d., and 5s. packets. Terms on application.
The Nurseries, West Dulwich, S.E.
N.B.—Their New General CATALOGUE is Now Ready.

To the Trade.

TEA-SCENTED ROSES, in Pots.—Magnificent Plants, of best varieties only, at 9s. per dozen, or 60s. per 100. An immense Stock of all other plants worth growing. Catalogue free.
WILLIAM KNIGHT, Floral Nursery, Hailsham, Sussex.

GIANT ASPARAGUS PLANTS, the best that money can procure, all certain to grow, 2s. 6d. per 100. This delicious vegetable does not require half the expense usually incurred in planting it. See RICHARD SMITH'S SEED LIST for 1876.
Extra strong SEAKALE, 2s. per dozen.
RICHARD SMITH, Nurseryman, Worcester.

CENTAUREA RAGUSINA, fine plants, established in single pots, 20s. per 100, cheaper out of pots. THYMUS CITRIODORUS AUREUS MARGINATUS, established plants from open ground, 3s. per 50; 5s. per 100; 21s. per 500; 40s. per 1000.
J. J. MARRIOTT, Highfield Nurseries, Matlock, Derbyshire.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

1876. New Roses.—1876.

A SELECTION of the very FINEST NEW VARIETIES for this year, 24s. to 30s. per dozen. Exceedingly strong, robust plants in pots; can be planted out at any time.
JAMES DICKSON AND SONS, Newton Nurseries, Chester.

New and Choice Petunias.

F. AND A. SMITH'S Collection of the above consists of all the best sorts raised by Continental and English growers; the flowers are unusually large and very beautifully striped. Catalogue upon application.
The Nurseries, West Dulwich, S.E.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.
Mr. WEBB, Calcot, Reading.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

Flowering and Foliage Plants.

F. AND A. SMITH can supply Flowering PELARGONIUMS and ERICAS for Windows and Conservatories; DRACÆNAS, and other Foliage Plants, for Table Decoration; FERNS, strong and well grown, for Cases, in great variety and at reasonable prices. Priced List upon application.
The Nurseries, West Dulwich, S.E.

Mangel Wurzel.

BOLTON AND CO. beg to offer their fine stock of YELLOW GLOBE MANGEL WURZEL SEED.
Their large Champion Yellow Globe produces an immense weight per acre, and the Pedigree Mangel is the finest one grown, small top, fine clean skin, and single tap-root. Both of these superior Mangels give great satisfaction.
Moderate prices, on application.
BOLTON AND CO., Seed Merchants, Wood Green, London, N.

TO TULIP GROWERS.—The very extensive and choice COLLECTIONS of TULIPS, established Varieties and Seedlings, belonging to the late Dr. Plant, just now coming into flower, at his residence, Plantation, Monkstown, near Dublin, are offered for Private Sale. The success of Dr. Plant as a Tulip Grower, and the extent of his Collection are so well known to Florists, that it is quite unnecessary to say a word with regard to the merits of the collection to be now disposed of. Applications to be made, by letter or otherwise, to JOHN WM. LANE, Esq., Garville Avenue, Rathgar; or A. BALFE, Esq., 28, Westland Row, Dublin.

PANSIES—CHEAP PANSIES.

BLUE KING, the best Hardy Blue Bedding Plant ever introduced, 1s. per dozen, 8s. per 100, 70s. per 1000. Plants suitable for Beds or Potting for Market.
DUKE OF PERTH, large black, 1s. per dozen, 8s. per 100.
CLOTH OF GOLD, from pots, 2s. 6d. per dozen, 17s. 6d. per 100.
MRS. FELTON, pure white, large violet eye, 2s. 6d. per dozen, 17s. 6d. per 100.
YELLOW KING, very large and showy, 2s. 6d. per dozen, 17s. 6d. per 100.
FINEST SHOW VARIETIES, 6s. per dozen, 40s. per 100.
FREDERICK PERKINS, Nurseryman, Regent Street, Leamington.

Cheap Bedding Geraniums.

ALFRED FRYER offers the following good Bedders at per dozen, for cash:—Golden Tricolors: Prince of Wales, 6s. 6d.; Lady Cullum, 3s. 6d.; Louisa Smith, 3s. 6d.; Mrs. Pollock, 3s. 6d.; Sophie Dumaresque, 3s. 6d. Silver Tricolors: Lass o' Gowrie, 6s. 6d.; Mrs. John Clutton, 3s. 6d.; Prince Silverwings, 3s. Ivy-leaf: L'Elegante, 3s. 6d.; Dolly Varden, 3s. 6d.; Crystal Palace Gem, 3s.; Marie Lemoine, 3s.; 01 one of each for 5s. Packing gratis, or post-free at above prices.
ALFRED FRYER, Nurseries, Chatteris, Cambridgeshire.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of
WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

To the Trade.

TROPÆOLUM SPECIOSUM, 20s. per 100; POLEMONIUM CŒRULEUM VARIEGATUM, 15s. per 100.
HOWDEN AND CO., Nurserymen, Inverness, N.B.

Bedding Plants.

F. AND A. SMITH offer the above in strong, hardened Plants, for immediate effect, in all the best varieties. Priced LIST upon application.
The Nurseries, West Dulwich, S.E.
N.B.—Their General Plant CATALOGUE is Now Ready.

ORCHIDS FOR SALE.

A Small Collection, in good Condition, the property of a Gentleman leaving the country.
About sixty-eight plants in as many varieties, some very choice.
Price for the lot, £13.
W. F. BOFF, 203, Upper Street, Islington, N.

NEW AND CHOICE PLANTS

FOR 1876.

Carter's

CATALOGUE

OF THE ABOVE IS NOW READY,

And will be sent, gratis and post-free, to Purchasers.

THE QUEEN'S SEEDSMEN,
237 and 238, HIGH HOLBORN, LONDON, W.C.

THE ROYAL NORFOLK SEED ESTABLISHMENT
ESTD 1844.

SNOWFLAKE POTATO.

Having imported and grown largely of this splendid new variety last season we are in a position to offer fine English-grown seed tubers at the following rates:—

	s.	d.
Per pound	0	6
Per peck of 14 lb.	6	0
Per bushel of 56 lb.	21	0

Cheaper by the sack or ton.

Orders of 21s. and upwards carriage free.

P. McKinlay, Esq., Beckenham, the well-known authority, writing of this Potato in the *Gardeners' Magazine*, Jan. 15 last, says:—"My experience with American varieties has been somewhat extensive, and I find that they generally improve as they become acclimatised. . . . I have no doubt Snowflake will improve in quality, and will become one of the best in cultivation."

Upwards of Fifty other Varieties in Stock.

BEAUTIFULLY ILLUSTRATED
Catalogue of Kitchen Garden and Flower Seeds, Gladioli, &c.
POST-FREE ON APPLICATION.

DANIELS BROS.
Seed Growers
NORWICH.

Cranston's Nurseries (Established 1785)

TEA-SCENTED ROSES—20,000 strong, well hardened plants, in 5½-inch pots.
April and May are the best months for Bedding or Planting-out the Tea-scented, China, Noisette, and all Roses on their own roots. Selections, left to us, from 12s. to 15s. per dozen.
Descriptive Priced LISTS on application to
CRANSTON AND MAYOS, Hereford.

CHEAP PLANTS, post-free.—Twelve new Fuchsias of 1875 for 4s., 12 choice older sorts, 2s.; 12 choice Coleus, 2s.; Dr. Denny's second set of 7 beautiful Zonal Geraniums, 2s. 6d.; 12 choice Geraniums for pot culture, 3s.; 12 Ageratum Countess of Stair, 2s.; 12 Imperial Dwarf, 1s.; or the whole of the above post-free for 15s., carefully packed.
JOSEPH LEIGH, Sandy Lane Nursery, Lowton, near Newton-le-Willows, Lancashire.

Dr. Denny's Zonal Pelargoniums.

JOHN COPELIN begs to announce that he is now prepared to supply Dr. Denny's "Third Set" of 18 splendid varieties, reduced in price to £1 11s. 6d. per set, and 2s. 6d per single variety.
CATALOGUES post-free on application.
Tyssen Street Nursery, Stoke Newington, London, N.

White Roman Hyacinths.

J. VANDER SWAELMEN, NURSERYMAN, Gendbrugge, Ghent, Belginm, can supply for next July good Bulbs at 24s. per 100, or 230s. per 1000. Also NARCISSUS, Double de Constantinople, and N. totus albus (paper-white) at 10s. per 100, or 90s. per 1000. Early orders are respectfully solicited.

CUTTINGS of GERANIUMS, &c.—One Hundred GERANIUMS, in 40 choice varieties, including Tricolor, Gold and Bronze, Variegated, Zonal, Nosegay, and Ivy-leaf, for 10s.; 50, 5s. 6d.; 25, 3s.
24 Fancy PELARGONIUMS, 3s. 6d.; 12, 2s.
24 CHRYSANTHEMUMS, 2s. 6d.; 12, 1s. 6d.
24 POMPONS, 2s. 6d.; 12, 1s. 6d. 24 FUCHSIAS, 2s. 6d.; 12, 1s. 6d. All post-free. Catalogues one stamp.
J. COOMBS, The Ferns, Enfield.

REGAL PELARGONIUMS.—CAPTAIN RAIKES, MARIE LEMOINE, QUEEN VICTORIA, the three best Geraniums ever offered, one of each post-free, 3s. 6d., or 12s. per dozen; also BEAUTY OF OXTON and KONIG ALBERT. The set of five for 10s. 6d. Post-office Orders payable to
FREDERICK PERKINS, Nurseryman, Regent Street, Leamington.

BEDDING VIOLAS for the MILLION.—Perfectly hardy, easily propagated, flower from April to October. 100 in 12 distinct named sorts for 20s., 50 for 12s. 6d., 25 for 7s. Also Prize Show and Fancy PANSIES and PHLOXES, own selection, 6s. 6d. per dozen. Sent free by post to all parts of the United Kingdom on receipt of post-office order.
DICKSONS AND CO., Nurserymen, Seedsmen and Florists, 1, Waterloo Place, Edinburgh. Established 1770. New Nurseries at Pilrig Park.

Roses in Pots by the Dozen, Hundred, or Thousand.

WM. WOOD AND SON solicit attention to their enormous and splendidly grown stock of the above. Inspection invited.
Woodlands Nursery, Maresfield, Uckfield, Sussex.

Special Offer.—Vesuvius, Crystal Palace Gem.

WILLIAM BADMAN offers good plants of VESUVIUS from single pots, 10s. per 100, 85s. per 1000. CRYSTAL PALACE GEM, 15s. per 100. MADAME VAUCHER, finest White Pelargonium, 10s. per 100. Package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

Choice Tricolor and Bronze Geraniums.

THOMAS PESTRIDGE can now supply, in good plants, at per dozen for cash—Mr. Headly, 6s.; Peter Grieve, 4s.; Sophia Cusack, 3s.; Salamander, 6s.; Mysterious Night, 3s.; Lass o' Gowrie, 6s.; Mrs. Colonel Wilkinson, 4s.; Miss Pond, 10s.; Marshal MacMahon, 4s.; Black Douglas, 3s.; Earl of Rosslyn, 4s.; Prince Arthur, 6s. Package free. Priced List of other varieties.
THOMAS PESTRIDGE, Park Road Nursery, Brentford

Pelargoniums, Fuchsias, Bedding and other Plants.
All established in single pots.

WOOD AND INGRAM beg to offer:—
PELARGONIUMS, Show, Spotted, and Fancy, fine flowering plants in 5-inch pots, good named sorts, 50s. per 100; 8s. per dozen.
CALCEOLARIA, Herbaceous (finest exhibition strain), extra fine plants in 5-inch pots, 9s. per dozen, 1s. each.
FUCHSIAS, in great variety, to name, in 5-inch pots, splendid plants, 40s. per 100; 5s. per dozen.
PELARGONIUMS, Golden Tricolor, J. D. Bassett, Macbeth, Miss Batters, 6s. per dozen; Peter Grieve, 9s. per dozen; Louisa Smith, Mrs. Dix, Pre-eminent, 4s. per dozen; Queen Victoria, Sir R. Napier, Countess of Craven, Sunset, 4s. per dozen; Sophia Dumaresque, 3s. 6d. per dozen.
" Silver Tricolor, Prince Silverwings, 3s. per dozen.
" Bronze and Gold, The Dragon, 3s. per dozen; Perilla, 3s. per dozen; Prima Donna, 4s. per dozen.
" Crystal Palace Gem, 20s. per 100; Vesuvius, 18s. per 100
" Master Christine, 20s. per 100.
DAHLIAS, Show, Fancy, and Bedding, 4s. per dozen.
AGERATUM, Imperial Dwarf, 2s. per dozen, 14s. per 100.
ALTERNANTHERA, sorts, 2s. per dozen, 14s. per 100.
CINERARIA MARITIMA, 2s. per dozen, 14s. per 100.
" CANDIDISSIMA, 2s. per dozen, 14s. per 100.
GNAPHALIUM LANATUM, 2s. per dozen, 14s. per 100.
IRESINE HERBSTII, 2s. per dozen, 14s. per 100.
LOBELIAS, best varieties, 2s. per dozen, 14s. per 100.
MESEMBRYANTHEMUM CORDIFOLIUM, 2s. per doz., 14s. per 100.
CALCEOLARIA AUREA FLORIBUNDA, and other varieties, 2s. 6d. per dozen, 18s. per 100.
HELIOTROPES, of sorts, 2s. 6d. per dozen, 18s. per 100.
PETUNIAS, of sorts, 2s. 6d. per dozen, 18s. per 100.
SALVIAS, of sorts, 2s. 6d. per dozen, 18s. per 100.
COLEUS VERSCHAFFELTII, 2s. 6d. per doz., 18s. per 100
LILIUM AURATUM, 1s. 6d. to 5s. each.
ADIANTUM CAPILLUS-VENERIS, 8s. per dozen.
ASPLENIUM MARINUM, 9s. per dozen.
W. & I.'s new descriptive Spring CATALOGUE is now ready, and will be sent free on application.
The Nurseries, Huntingdon.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham, will be glad to send their CATALOGUE for this season on application. The stock of the undernamed, in best sorts and good plants, is very large and fine :—

	Per doz. s. d.	P. 100 £ s.
Antirrhinums	3 6	1 5
Ageratums	2 0	0 12
Chrysanthemums	3 0	1 0
Carnations and Picotees, single plants	6 0	2 5
,, pairs	11 0	3 15
Clematis	15 0	5 0
Calceolarias	1 0	0 8
Coleus	3 0	1 1
Carpet Bedding Plants	1 6	0 10
Daisies, various colours	1 0	0 5
Fuchsias	3 0	1 0
Geraniums, Tricolor	3 6	1 5
,, Bicolor	3 6	1 5
,, Zonal and Nosegay, in sorts for pots	3 0	1 1
,, autumn struck, for bedding, out of pots	2 0	0 15
Heliotropes	2 6	0 18
Iris germanica	3 0	1 0
Lobelias	1s. to 2 0	6s. to 12
Succulents	6 0	
Greenhouse plants	12s. to 18 0	
Stove plants,	12s. to	18 0
Tree Carnations	12 0	
Echeveria secunda glauca	2 0	12 0
Delphiniums, seedlings, bloomed last year	3 6	
Spiræa japonica, ditto	9 0	
Rock plants	0	1 0
Pansy Mrs. Felton, the best white	3 0	18 0
,, Clevedon, Purple and C. Blue	2 0	12 0
Viola, Golden Perpetual, the best yellow	2 0	12 0
Pelargoniums, 6s. to	9 0	
Herbaceous plants	3 0	1 0
Pelargonium Queen Victoria	18 0	
Pansies, show	3 6	1 5
,, bedding	2 0	0 15
Pinks	3 6	1 5
Pæonies	12 0	4 10
Pentstemons	3 6	1 5
Pyrethrums	10 0	
Salvias	3 0	1 1
Sedums	3 0	1 1
Saxifrages	3 0	1 1
Violas	1 6	0 10
Violets	2 6	0 18
Roses in Pots, H.P.'s	12 0	4 10
Hardy Climbing plants, in pots	12 0	
Dactylis elegantissima	1 0	4 6
Begonias	4 0	
Achimenes	2 6	
Dracæna terminalis and Cooperi	18 0	
Caladiums	15 0	
Epiphyllums	12 0	
Phloxes	3 6	1 5
Sempervivums for edging	2 0	0 12
Double Sweet Williams	3 0	1 0

NEW and SELECT LANTANAS.—This free-blooming class of Plants are very useful for Bedding (equal to Verbenas), and they also make desirable pot plants, blooming all through the season. Twelve select and very superb varieties, 2s. 6d., post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW COLEUS of 1875.—Twelve superb varieties New Coleus, selected from the best varieties of 1875, very effective and distinct; the twelve varieties in good plants, 3s., post-free; also twelve very select older varieties, 2s., post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW and SELECT PELARGONIUMS.—Now ready to be sent out in good plants, large-flowered Show, Fancy, and French spotted Pelargoniums; twelve best selected varieties, post-free, 6s.
NEW AGERATUM, DUCHESS of EDINBURGH, the best Dwarf Blue yet produced, 3s. per dozen, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW and SELECT HELIOTROPIUMS.—This highly fragrant and free-blooming class of Plants has been much improved. The new compact growers are very effective for Bedding and Pot Culture. Twelve select and very superb varieties, 2s. 6d., post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW FUCHSIAS of 1875, now ready to send out, carefully selected from the best kinds sent out in 1875, in good plants. Twelve select New Fuchsias, 4s.; 12 best selected varieties of 1874, for 3s.; 12 very fine older varieties, 2s.; all sent post free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW DOUBLE WHITE GERANIUM, "GEORGE SAND," the largest and best Double White; 12 superb varieties Double Geraniums, including "George Sand" and other new colours, in good plants, post-free for 6s.
NEW AGERATUM, DUCHESS of EDINBURGH, the best Dwarf Blue yet produced, 3s. per dozen, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW VICTORIA DAISIES.—This new strain of Double Daisies produces flowers 6 inches in circumference, on long foot-stalks 8 inches high, looking more like large Ranuncuh than Daisies. They are decided acquisitions to our early spring-blooming plants. B. W. K. is now enabled to offer the following six varieties, post-free, for 2s., viz.:—Albert Edward, Albert Victor, Masterpiece, Nil Desperandum, Renown, Queen Victoria; 12 newer varieties of 1873, in 12 fine varieties, for 6s., post-free; also a fine mixture of colours, unnamed, at 1s. 4d. per dozen, or 8s. per 100, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

Seed Potatos.

H. AND F. SHARPE have still on hand the following varieties of SEED POTATOS, which they offer at reasonable prices :—

Myatt's Prolific Kidney,	Walker's Improved Regents,
Alma Kidney,	Yorkshire Regents,
Rivers' Royal Ashleaf Kidney,	Fluke Kidney,
American Early Rose,	Paterson's King of the Flukes,
Early Climax,	Alpha,
Paterson's Victoria,	Eureka.
Model,	

Seed Growing Establishment, Wisbech.

SEEDS—EXTRA QUALITY.

CYCLAMEN PERSICUM MONSTROSA PLENA, 2s. 6d. and 5s. per packet.
CYCLAMEN PERSICUM, choice quality, single-flowered, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS FIMBRIATA, 2s. 6d. & 3s. per pkt.
,, ,, FLORE PLENA, 2s. 6d. and 5s. per packet.
CINERARIA and CALCEOLARIA, 2s. 6d. and 5s. per pkt.
E. G. HENDERSON AND SON, Wellington Nursery, London, N.W.

New Double Zonal Pelargoniums

For 1876.

W. & J. BROWN

Will let out this month the following new and distinct varieties, raised by Mr. LAXTON (the raiser of Jewel, Emily Laxton, Guiding Star, and others), all of which are striking novelties, having the dwarf habit of the single Zonals :—

THE GHOST.—Flower pure ivory-white, finely formed, petals waxy and of great substance—a decided acquisition in double whites, and especially adapted for bouquets, 10s. 6d.

SOPHIA CLAPTON.—The plant has the remarkably dwarf and shrubby habit and pale green foliage of "Guiding Star." Flower very full, pretty Hepatica shaped, bright purplish scarlet, 10s. 6d.

WILFRID.—A beautiful pearl-white flower, fuller and more perfect in form than "Aline Sisley," very pretty and remarkably distinct—decidedly the best of its class yet sent out, 15s.

First-class Certificate Royal Horticultural Society.

The set for £1 12s. 6d. Trade terms as usual.

W. AND J. BROWN, Florists, Stamford.

HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,
KNAP HILL NURSERY, WOKING, SURREY.

BEDDING PLANTS, &c.

LITTLE & BALLANTYNE,

THE QUEEN'S SEEDSMEN,
CARLISLE,
SOLICIT EARLY ORDERS FOR
DAHLIAS, HOLLYHOCKS, LOBELIAS, VERBENAS, FUCHSIAS, PELARGONIUMS, PANSIES,
AND
An extensive Assortment of Plants suitable for Beds and Borders,
INCLUDING THE
Best Varieties of Dwarf Variegated Plants and Succulents for Edgings, &c.

KNOWEFIELD NURSERIES, CARLISLE.

THE KNAP HILL CYPRESS,

Cupressus Lawsoniana erecta viridis.

ANTHONY WATERER

Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices :—

3 feet high, 2½ feet in circumference, 30s. per doz.
4 feet high, 3 to 4 feet do., 42s. to 60s. per doz.
5 feet high, 4, 5 and 6 ft. do., 10s. 6d., 15s. to 21s. each.
6 and 7 feet high, 6 to 7 and 8 ft. do., 21s. to 31s. 6d. each.

No cuttings have been taken from the plants here referred to, which are simply perfect in growth and splendidly rooted.

KNAP HILL NURSERY, WOKING, SURREY.

FRANCIS & ARTHUR DICKSON & SONS.

106 Eastgate St. & The "Upton" Nurseries **CHESTER.**
Farm Seeds Extra Select & of Unsurpassed Quality
Carriage Paid.
Illustrated Catalogue, Free.

DAVID LLOYD AND CO. (LIMITED).

CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.
Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following :—
J. T. RUBERY, 88, Rumford Place, Liverpool.
SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
R. AND J. TAYLOR, 17, Vachel Road, Reading.
AGENTS WANTED.

BEDDING PANSIES, &c.

PANSY, Queen of the Yellows. This flowers freely during the summer, is of a rich bright yellow, of a compact neat habit; will make a capital substitute for the yellow Calceolaria: 12s. per 100, £5 per 1000.
,, Blue Perfection, Magnificens, Blue King, and Clevedon Blue, 2s. per dozen.
PYRETHRUM, Golden Gem, in single pots, 4s. per dozen.
PRIMULA JAPONICA, in 3-inch pots, most of them showing flower, 40s. per 100, 6s. per dozen; smaller, in store pots, 25s. per 100.
GERANIUMS, Mrs. Pottle, lovely pink, dwarf, free bloomer, good bedder, 6s. per dozen.
POLYANTHUS, fine, gold-laced (Wiggins' strain), strong, 21s. per 100, 3s. per dozen.
,, ,, seed, 1s. per packet, or ½ oz., 3s.
Terms cash with order.
H. McMILLAN, Nurseryman, St. James' Road, Kingston-on-Thames.

Cheap Plants.—Cheap Plants.

WILLIAM BADMAN offers the following cheap plants for present potting :—
VERBENAS, Purple, White, Scarlet, Rose, Crimson, &c., rooted cuttings, 6s. per 100, 50s. per 1000; good plants from single pots, 1s. 6d. per dozen, 10s. per 100; twenty named sorts, 8s. per 100.
CALCEOLARIA, Golden Gem and Kayii Improved, 5s. per 100, 40s. per 1000; or strong established plants, 1s. 6d. per dozen, 10s. per 100.
LOBELIA SPECIOSA (true), from cuttings, 3s. per 100, 20s. per 1000; good plants, from single pots, 1s. 6d. per dozen, 10s. per 100.
HELIOTROPIUM, finest dark, 6s. per 100; or large plants, 1s. 6d. per dozen, 10s. per 100.
PELARGONIUMS, Vesuvius and Jean Sisley, scarlet; Madame Vaucher, fine white; Mrs. W. Paul and Blue Bell, pink; Waltham Seedling, fine bedding crimson; all good plants, from single pots, 1s. 6d. per dozen, 10s. per 100; Master Christine, finest pink, 2s. per dozen, 15s. per 100.
,, Gold-leaf: Crystal Palace Gem, good plants, 2s. per dozen, 15s. per 100.
,, Silver-leaf: Flower of Spring, Bijou, Prince Silverwings (fine), 2s. per dozen, 15s. per 100.
,, Tricolor: Mrs. Pollock, 2s. 6d. per dozen, 18s. per 100.
ALTERNANTHERA, magnifica and paronychioides, 6s. per 100, 50s. per 1000; amœna spectabile (finest), 8s. per 100, 1s. 6d. per dozen.
AGERATUM, Imperial Dwarf, blue, makes a fine bed, 1s. per 100; from single pots, 1s. 6d. per dozen, 10s. per 100.
IRESINE, Lindeni, crimson leaf, fine thing, 6s. per 100, 1s. per dozen.
COLEUS, Verschaffeltii, rom store pots, 6s. per 100; or larger, 1s. 6d. per dozen, 10s. per 100.
STELLARIA AUREA, new golden edging plant, 4s. per 100, 1s. per dozen.
CENTAUREA CANDIDISSIMA, silver-leaf, 3s. per dozen, 20s. per 100.
Package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

Choice Bedding Plants.

All strong Plants, established in single pots, except those marked (*).

ISAAC BRUNNING AND CO. beg to offer—
PELARGONIUMS, strong blooming Plants, in 5-inch pots, good named show and fancy varieties, 6s. per dozen
,, Scarlet (such as Tom Thumb, Attraction, and others), 2s. 6d. per dozen, 18s. per 100
,, Pink Christine, &c., 2s. 6d. per dozen, 18s. per 100
,, White Madam Vaucher, 3s. per dozen
,, Nosegay (as Stella, &c.), 2s. 6d. per dozen, 18s. per 100
,, Choice Zonal, leading varieties, 3s. to 4s. 6d. per dozen
,, ,, ,, in 5-inch pots, 6s. to 9s. per dozen
,, Silver Variegated—Bijou, Flower of the Day, &c., 3s. per dozen
,, Tricolor (as Mrs. Pollock), 3s. 6d. per dozen
,, Gold and Bronze, many varieties, 3s. to 4s. 6d. per dozen
,, Double Flowering, best sorts, 3s. to 4s. 6d. per dozen
,, ,, ,, in 5-inch pots, 6s. to 9s. per dozen
CARNATIONS, finest named varieties, 18s. to 24s. p. doz. pairs
CALCEOLARIA, aurea multiflora, 2s. 6d. p. doz., 18s. p. 100
COLEUS, many varieties, 3s. per dozen
DAHLIAS, in variety, 3s. to 6s. per dozen
GAZANIA SPLENDENS, 2s. per dozen, 14s. per 100
,, ,, VARIEGATA, 2s. per dozen, 14s. per 100
HELIOTROPES, in variety, 2s. 6d. per dozen, 18s. per 100
FUCHSIAS, in great variety, 3s. to 6s. per dozen
AGERATUM, Clapton Gem, splendid new, 4s. per dozen
IRESINES, in sorts, 2s. per dozen, 14s. per 100
LOBELIA SPECIOSA, 2s. 6d. per dozen, 18s. per 100
PERILLA NANKINESIS, 2s. per dozen, 14s. per 100
MESEMBRYANTHEMUM, cordifolium variegatum, 2s. per dozen, 14s. per 100
PETUNIAS, a splendid assortment, 3s. to 6s. per dozen
,, Single, 2s. per dozen, 14s. per 100
PICOTEES, finest named varieties, 15s. to 21s. per dozen pairs
*PINKS, Choice mixed Border, 3s. per dozen, 20s. per 100
PYRETHRUM AUREUM, 2s. per dozen, 14s. per 100
VERBENAS, many sorts, 3s. per dozen

Brunning & Co.'s Guinea Collection of Bedding Plants contains :—

24 Geraniums, in sorts	12 Pyrethrum aureum
12 Calceolarias, yellow	6 Dahlias
6 Fuchsias	12 Iresines
12 Lobelias, blue	20 Asters
12 Ageratums	20 Stocks
12 Mesembryanthemums	

Forwarded package and packing free (turned out of pots) on receipt of post-office order or cheque.
For other varieties, see Plant CATALOGUE, post-free on application.
ISAAC BRUNNING AND CO., Great Yarmouth Nurseries.

NEW STRIPED ROSE,

BEAUTY of GLAZENWOOD.

A Hybrid Tea of a most distinct and novel kind, unlike any other variety already known, and may possibly prove to be an entirely new genus. The ground tint is a lovely golden-yellow, darker but after the style of "Madam Falcot," each petal being distinctly striped and flaked with a bright carmine, as often seen in the coloration of some Tulips, the buds before expanding being boldly and beautifully marked with crimson. The foliage is grand, of a beautiful light satiny green, the serrated edges being marked with red. The odour is delicately sweet, as in the generality of Tea Roses. The flower is of good shape and build, with plenty of petals; the flower-buds pointed and very handsome. It is impossible to convey by description the marking and beauty of this charming Rose, but it is without doubt the most striking novelty introduced for years.

"A Rose of golden-yellow, striped and flaked with scarlet or vermilion, sounds like a dream or a fairy tale. It is nevertheless a reality." H. CURTIS, *in the "Garden."*

Figured in the *Floral Magazine*, Plate 174.

Coloured Plates, 1s. each. Strong Plants in Pots, 21s. each. The usual discount to the Trade.

LEWIS WOODTHORPE,
GLAZENWOOD NURSERY, BRAINTREE, ESSEX.

TEA & NOISETTE ROSES

ON SEEDLING BRIER AND OTHER STOCKS

Best adapted to the respective sorts, so worked that no suckers can be produced.

Splendid Plants, in immense quantities; considering health, size and vigour, the cheapest offered in the Trade.

NEW ROSES FOR 1876 NOW BEING SENT OUT IN VERY FINE PLANTS. LISTS FREE.

EWING & COMPANY,
THE ROYAL NORFOLK NURSERIES, EATON, NEAR NORWICH.

E. G. HENDERSON & SON

RESPECTFULLY ANNOUNCE THE PUBLICATION OF THEIR

NEW DESCRIPTIVE SPRING CATALOGUE,

WHICH WILL BE FORWARDED ON APPLICATION.

It includes the following NEW PLANTS, offered by them the first time in trade, amongst which is a pure white-flowered AGERATUM:—

CALCEOLARIA SALICIFOLIA.
CHRYSANTHEMUM, CANARY-COLOURED CHERUB.
CARDUUS, sp. (Grande Fleur Rouge).
CUPHEA MILLFIELDIANA.
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FUCHSIAS, eight new (including Mr. Todman's).
MIMULUS, eight new.
SONERILA HENDERSONI METALLICA.
NERIUM OLEANDER PICTUM ARGENTEUM,
,, ,, LUTEUM MARGINATUM
IVY-LEAVED PELARGONIUMS, three new.
THYMUS MARGINATA ELEGANTISSIMA.
TROPÆOLUM BROOKEANUM.
VERBENAS, eight new.
PELARGONIUM STRIATA ELEGANS.
,, ,, MAGNUM BONUM (Zonal Sec.).
AGERATUM SNOWFAKE.
,, TOM THUMB SNOWFLAKE.
ROMNEYA COULTERI.

The following plants are new to the great majority of English gardens:—

PRENANTHES ELEGANTISSIMA,
WHITE BEDDING DAHLIA, MARGUERITE BRUANT,
OTHONNA CRASSIFOLIA,
AND
SALVIA SPLENDENS ARGENTEA.

THE WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON, N.W

EWING'S INFALLIBLE COMPOSITION

FOR THE

PREVENTION AND DESTRUCTION

OF

M I L D E W,

In Bottles, 1s. 6d. and 3s. each; Packed for Travelling, 1s. 9d. and 3s. 4d. each.

To make respectively Eight and Sixteen Gallons of Mixture fit for use.

TO BE HAD FROM ALL PRINCIPAL NURSERYMEN, SEEDSMEN AND FLORISTS.

Mr. Q. READ, *Pleasley Hall, Mansfield, in* "The Garden," *October* 23, 1875, *writes*:—

"I have had the Vines in two houses attacked with mildew st after the fruit has been set. Air had been given night and y, a brisk temperature maintained, damp and stagnation oided, and both bunches and foliage had been well dusted ith sulphur; yet, notwithstanding all this, the mildew con- ued to make progress. This season it appeared in my early nery about the usual time, just after the Grapes had set, and all our efforts to stop it were unavailing. Fearing it would appear as usual in the second house, I bought a few bottles of 'Ewing's Composition,' and applied it according to the instruc- tions received, and the result has been most satisfactory. Not a trace of mildew has been observed during the season, and the Vines have ripened the best crop of Grapes we have had in the house for nine years."

EWING AND CO., THE ROYAL NORFOLK NURSERIES, EATON, near NORWICH.

NEW FERNS.

JAS. BACKHOUSE & SON

Have pleasure in offering the following New and very interesting Ferns:—

ADIANTUM CILIATUM.

This fine Maidenhair will prove a valuable acquisition in its beautiful and much admired genus. Whilst possessing some resemblance to A. caudatum, the fronds are double the size both in length and width, with the pinnæ boldly cut or fringed; the colour is brighter and of a soft pea-green, and not liable to spot or rust from damp as A. caudatum too often does. The growth is vigorous as well as elegant, and for hanging baskets or other decorative purposes we feel assured it will be in great request.

7s. 6d. each.

MICROLEPIA ANTHRISCIFOLIA. (?)

An elegant South African Fern, supposed by Thomas Moore, Esq., to be M. Anthriscifolia, or an entirely new species. It is a plant of remarkably free growth, the creeping rhizomes throwing off an abundance of quadripinnate fronds 6 to 12 inches in length, and reminding of Cheilanthes elegans in their numerous and finely-cut divisions; whilst their more ample size, velvety texture, and soft green colour, give a delightful effect to the whole plant. Well adapted for a greenhouse or intermediate fernery, and therefore sure to become useful and popular.

7s. 6d. each.

POLYSTICHUM MUNITUM.

As a hardy evergreen alpine Fern this bids fair to be the finest in cultivation. It resembles a gigantic P. Lonchitis, with fronds 9 inches (or more?) wide, in noble plume-like tufts or crests, 4 to 5, or possibly 6 feet across. Pinnæ undivided, dark-green, long and narrow, and serrated at the edges. Even the half-unfurled fronds seem entirely unaffected by frost, as the test of winter 1874-5 at York was very severe. Sierra Nevada of California.

Established plants, 7s. 6d. to 21s. each.

JAS. BACKHOUSE & SON also desire to ask attention to the following, which, with the above, can now be supplied in good plants:—

ADIANTUM PERUVIANUM.

Of this graceful and noble habited Maidenhair we possess a fine stock in healthy well-established plants, which we offer at

3s. 6d. to 5s. each.

CHEILANTHES FRAGRANS.

A pretty dwarf Cystopteris-like Fern, forming dense tufts in vertical fissures of rocks fully exposed to the sun. Fronds bright green, two or three times divided, with deep brown bristly-scaled stalks highly fragrant with the scent of new-mown hay. A native of the mountains of Corsica and Switzerland. Probably hardy in favourable situations.

3s. 6d. each.

GYMNOGRAMMA TRIANGULARIS.

Fronds 6 to 9 inches long, firm and rigid in texture, densely covered with white or lemon tinted farinose powder on the underside. A beautiful Fern for sunny rockwork, where it can root deeply into rich soil in a narrow fissure; or for a cool Greenhouse.

Strong Plants, 7s. 6d. each.

PELLÆA ORNITHOPUS.

An interesting and distinct Fern from California. Fronds glaucous-green, rigid, erect, from 9 to 12 inches high, bipinnate; the secondary pinnæ all trifoliate, except the ultimate ones, which are simple and solitary. The pinnules are so formed and arranged in the trifoliate pinnæ as to resemble the claws of the foot of a small bird, each terminated with a distinct mucro. Stipes and rachis dark purplish. Received direct from Collector, and exhibited by us under the name of P. mucronata, before the Royal Horticultural Society, when it was much admired, and was awarded a First-class Certificate.

Good Plants, 5s. each; Stronger, 7s. 6d. to 10s. 6d. each.

TODEA SUPERBA.

Fine plants, 6 to 8 inches across,

5s. to 7s. 6d. each; Strong Plants, for Specimens, 21s. to 210s. each.

ODONTOGLOSSUM ROEZLII.

This "superb" new Orchid we can offer as under. It is remarkably free to grow and flower, a number of plants affording many distinct varieties; its large and deliciously fragrant white flowers being sometimes pure, but more generally blotched with purple, or orange, or yellow, at the base of the petals.

Well-established Plants, 21s. each; Stronger, 31s. 6d. to 63s. each.

YORK, SPRING, 1876.

NEW VERBENAS (ECKFORD'S).
The finest ever yet offered. See
JOHN KEYNES' CATALOGUE, 1876.

NEW ROSES, 1876.
Selected varieties. See
JOHN KEYNES' CATALOGUE, 1876.

LETTY COLES (KEYNES')—
the ROSE of the season—
is now being sent into commerce. All particulars, consult
JOHN KEYNES' CATALOGUE.

NEW DAHLIAS for 1876.
Keynes' grand flowers. See
JOHN KEYNES' CATALOGUE for 1876
Castle Street Nursery, Salisbury.

CORKWOOD.—For Sale, by BROOKS & FAITH, at 25, Mincing Lane, E.C., on TUESDAY, May 16, 257 Bales of Corkwood.

COCOA-NUT FIBRE REFUSE.—Reduced price, 20 Bushels, 6s. 8d.; 100, 20s.; or Truck Load (upwards of 300 Bushels), 40s. Delivered free to any rail in London.
J. STEVENS, Fibre Works, High Street, Battersea, S.E.

COCOA-NUT FIBRE REFUSE, as supplied to H.R.H. the Prince of Wales, the Emperor of Germany, Messrs. Veitch & Co., and thousands of Nurserymen, Gardeners, &c., is INVALUABLE for Forcing and Plunging, a wonderful incentive to growth of Flowers, Vegetables, &c. 20 bushels, 6s. 8d.; 50 for 12s. 6d.; truck, 45s.; sample bag, 2s. 6d.; 20 bushels and upwards free on to rail or within 5 miles.
ABBOTT AND CO., 80, Bishopsgate Street Without, E.C., Manufacturers of Cocoa-nut Fibre, Mats, and Matting, at Eagle Steam Works, Hatcham Road, Old Kent Road, S.E. Importers of Russia Mats, Raffia Fibre, &c.
Price LISTS on application.

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality, for Orchids, Stove Plants, &c., £6 6s. per truck.
BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, New Holland Plants, 17s. per ton.
Delivered on rail at Blackwater, S. E. R., or Farnborough, S. W. R., by the truck-load. Sample sack, 5s. 6d. each.
Fresh SPHAGNUM, 10s. 6d. per sack.
WALKER AND CO., Farnborough Station, Hants.

ODAMS' MANURES, FOR ALL CROPS.
Manufactured by the NITRO-PHOSPHATE and ODAMS' CHEMICAL MANURE COMPANY (LIMITED), consisting of Tenant-Farmers occupying upwards of 150,000 Acres of Land.
Chairman—ROBERT LEEDS, Keswick Old Hall, Norwich.
Managing Director—JAMES ODAMS.
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CHIEF OFFICE—109, Fenchurch Street, London, E.C.
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Colour reddish purple, with yellow eye. Fine close erect habit. One of the finest and most effective bedding Violas yet sent out.

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Colour very dark glossy purple, with fine clear yellow eye. Good habit. Received a First-class Certificate from the Royal Botanic Society, Regent's Park, London.

The above were raised by Mr. Gray, of Eglinton Castle Gardens, Ayrshire, in 1873, from which time they have been used extensively there for bedding purposes, and have been universally admired.

Price 18s. per dozen. Cheaper by the Hundred.

CLOVE CARNATION "DUKE OF WELLINGTON."

A most profuse bloomer; colour a brilliant scarlet.

Mr. Thomson, of Drumlanrig, says of it:—"I consider Clove Carnation Duke of Wellington to be the most profuse and lasting bloomer of any variety I have ever seen. It is of a brilliant scarlet colour. The flowers are medium-sized, and the sheath does not burst—qualities which render it invaluable for cutting. In beds it forms a dense mass of colour."

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GERANIUM "ROBERT BURNS."

This Geranium is a cross between Bronze Crown Prince and Ivy-leaf Duke of Edinburgh. It is without doubt the finest Golden Bronze Bedding Geranium ever introduced.

Although a most luxuriant grower, in height it does not exceed 3 or 4 inches. The leaves are much larger than those of Crown Prince, and it possesses the creeping habit of Duke of Edinburgh. The leaf is of a bright golden colour, with a distinct chestnut zone. It has received several First-class Certificates.

Mr. Thomson, of Drumlanrig Gardens, writing in the *Gardener*, says of it:—"We saw the other day what we are fully convinced is the finest Bronze Geranium that has ever been raised for outdoor purposes. It is a seedling raised by Mr. Gray, of Newfield Gardens, near Kilmarnock. It is a cross between the Ivy-leaf Duke of Edinburgh and Crown Prince, partaking of the creeping or spreading habit of Duke of Edinburgh; and as a Bronze we consider it as far superior in marking to Crown Prince as Crown Prince is to most others. The ground is a bright orange-yellow, with a distinct dark chocolate zone. It grows very strongly, and spreads closely to the ground, with every leaf turned up; and, unlike many of the Bronzes, when planted out and exposed to wet and sunshine, it does not get damaged at the edges of the leaves. It has been named 'Robert Burns.'"

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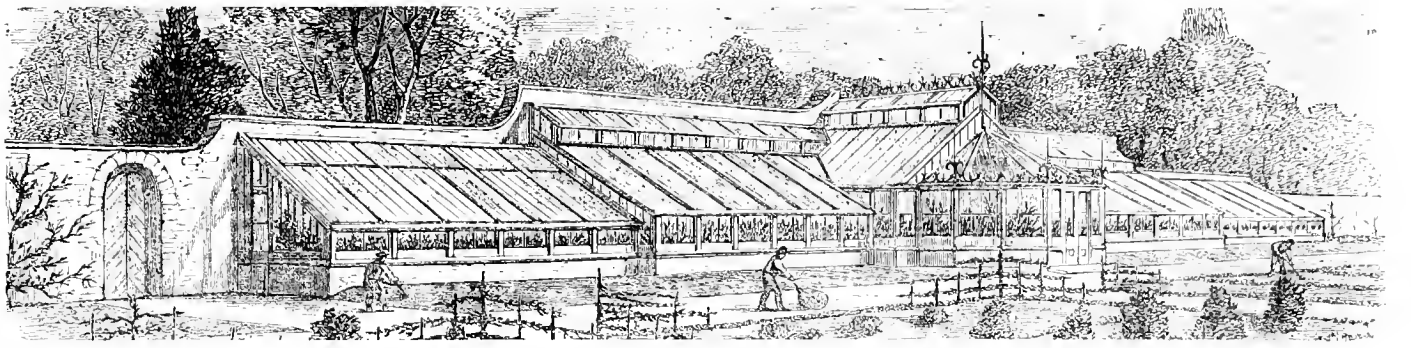

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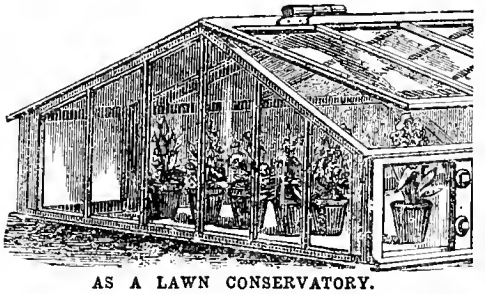

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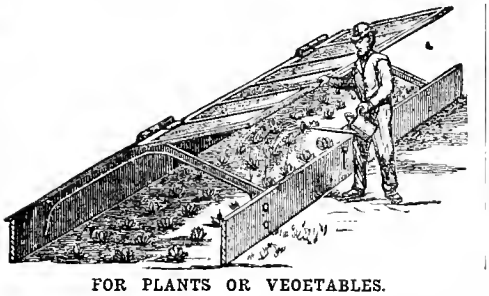

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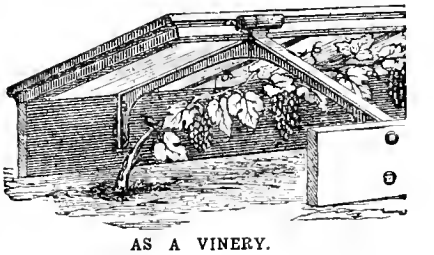

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12 feet long by 3 feet wide	3 5 0	7s. 0d.
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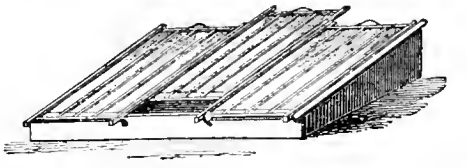

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12 feet long by 6 feet wide, 3 lights	4 17 6
16 feet long by 6 feet wide, 4 lights	6 7 6
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24 feet long by 6 feet wide, 6 lights	9 7 6

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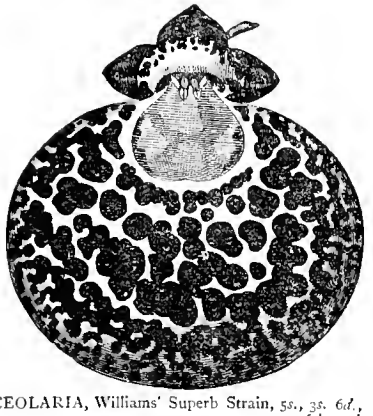

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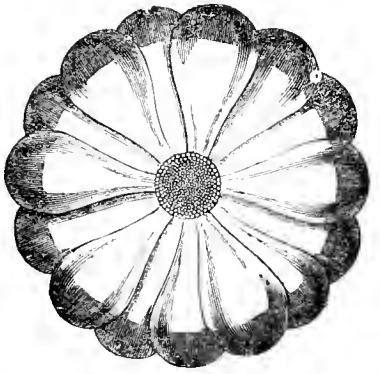

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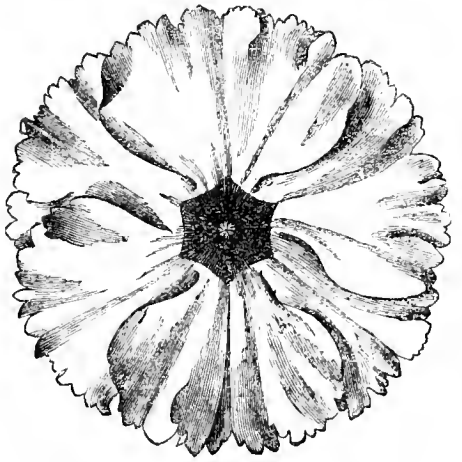

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SATURDAY, MAY 13, 1876.

HORTICULTURAL EXHIBITIONS.

SOME years ago, when horticultural exhibitions had considerably increased in numbers, but were by no means so numerous as they have since become, there were not wanting those who predicted that the turning-point was reached, and that many would die out through want of support on the part of the public, who would get tired with the sameness inseparable from these displays, even when varied as far as the materials at command would permit. That such conclusions have not been realised, and are anything but likely to be, is sufficiently evident from the number of new societies that each year come into existence throughout the kingdom. A still more healthy sign is that many of the principal provincial societies, as they get older, gain in importance. Provincial, we repeat, for it is clear to the most superficial observer that, so far as the leading societies in London and its immediate neighbourhood are concerned, instead of any improvement, there has been a great falling off within the last few years in their exhibitions, not only in quantity, but also, with few exceptions, in the quality of the productions. Nor is the cause for this far to seek; the regulation of the schedules and the prizes offered by the old societies (we except the Royal Horticultural Society, which has always shown a disposition to act up to the reasonable representations of the exhibitors generally, and, in the matter of prize-money, has been as liberal as its straitened circumstances would permit) are such as would lead to the supposition that an idea pervaded the minds of those in whose hands the arrangements rest, that exhibitors must think it an honour to be allowed to show under any conditions that are offered to them. That some who reside in the immediate neighbourhood of London will show even whilst such a state of matters exists is certain, but to expect that those who live at a distance will put in an appearance when they have much greater attractions held out to them near home, would be unreasonable. This the authorities might see if they took the trouble to look at the matter from a common-sense point of view.

A reference to the amount of the prizes offered might be said to imply that exhibitors were actuated by sordid motives in calculating the value of what they expected to get. Yet it clearly behoves any one who incurs the cost of taking a number of large plants a considerable distance to look to this, or he may very possibly find himself out of pocket. When many of the provincial societies offer double the prizes for the same things, it is not likely that those who are near will leave their own neighbourhood to show in London. But it is not the mere value of the prizes offered that will alone secure the attendance of the largest number of competitors possessing the best productions. It is an easy matter by injudicious restrictions virtually to exclude many of the finest plants. It is evident that, in most cases, those at the helm in connection with the metropolitan shows, lack the requisite knowledge to secure the object they have in view, and that they are too short-sighted or self-opinionated to consult those who possess it. The result of this is just what might be expected—the exhibitions are the merest shadows of what they once were, and

are much worse than they would be if the schedules were better arranged.

Take, for instance, the Crystal Palace, where everything is seen to such advantage, with the ample dark background of deep green and stages to match, all under a handsome light awning, that sufficiently confines the space and gives the requisite subdued light The exhibitions are not what they once were. As to the Alexandra Palace, of the last week's display the less said the better, for the name it was designated by, of "The Great Flower Show," was about as great a misnomer as could well be imagined. At the Regent's Park, the place *par excellence* for horticultural exhibitions—where the position and formation of the ground leaves nothing to be desired, and where some of the most splendid and effective displays ever brought together have been seen—they are of late years mere shadows of what they once were. In the case of this society it is not alone the inadequate and wretchedly arranged schedule that acts as a certain barrier to the exhibitions being what they otherwise might be, but the marked and systematic contempt with which the exhibitors are treated.

Those who are connected with the management of most of these exhibitions appear to be labouring under an erroneous impression. It is not unusual to hear them say that the public care little for the excellence or otherwise of the displays, simply making these occasions an excuse to see and be seen. In this they are labouring under a delusion: the latter object no doubt with some may be one motive for attending, but the world is yet sufficiently honest not to endorse shams, especially when it has to pay for them, and in the case of the large numbers who have enough knowledge of the productions exhibited to know the difference between excellence and mediocrity, they stay away, avowing that there is nothing now to be seen worth the trouble of attending. The exhibitions of the London societies (excepting the Royal Horticultural) can now lay no claim to any intention of promoting horticulture; hence they signally fail in every way. Exhibitions at the present day to be even financially successful must be so managed as in some measure to contribute to the advancement of the pursuit they represent; this is necessary to render them attractive to the numbers who really understand and take a direct interest in the productions displayed: mere sightseers there always will be more or less, but, after the attraction of novelty is over, those who have no other incentive are not to be depended on in numbers sufficient to cover the necessary expenses.

We have so far confined our remarks to the way in which exhibitors are affected by the arrangements of the metropolitan societies, and those immediately near London, and the effect that these arrangements have upon the shows held by the societies. We have yet something to say that concerns exhibitors in all parts of the kingdom. No dispassionate observer who has had an opportunity of forming an opinion upon the subject can have any doubt that horticultural exhibitions, when carried out with judgment, have a powerful influence in diffusing a taste for horticulture. In this these displays simply work out a result general to pursuits of whatever nature. That such is the case is evident by what we see on all sides, from the produce of the cottager's vegetable plot, up to the highest, yet looked at as affecting the country collectively none the more important examples of the skilled gardener, aided by all modern appliances. If we take, for example, the most obscure country district, when a society is formed and the first attempts at an exhibition are made, it is generally found that an individual, or some few individuals, evince by the superiority of their productions much more skill than the rest; but when one exhibitor is at first able to distance all competitors by his fine plants, fruits, or vegetables, in a very short time he finds a number treading close upon his heels. Nor is this confined to those who exhibit—those who do not show generally see the necessity for bringing the things they grow up to a higher standard, although they may never be intended to take part in the competition.

Much as we have felt justified in saying in commendation of horticultural exhibitions, when those who take part in them are actuated by a spirit of fairness and friendly rivalry, such as we have reason to suppose the majority of exhibitors may justly lay claim to, yet there are exceptions, and it is well known that there are at most exhibitions some who resort to the dishonest, contemptible expedient of obtaining prizes by borrowing productions from others to enable them to win. In palliation of this species of fraud it may be said, and we have no doubt with some degree of truth, that those who descend to it would recoil at the idea of directly putting their hand in any one's pocket. But dishonesty is dishonesty, call it by what name you will! And in addition to the extent of the injustice as regards absolute value of the prizes others are thus deprived of, there is something contemptible in the individual who aims at gaining a distinction which his abilities do not merit, and which others would receive were it not that he descends to the low expedient of getting others to help him to accomplish that which he cannot achieve unaided. In these transactions there must be two parties engaged, and although the individual who thus lends, may be said not to occupy so despicable a position as the borrower, still he is equally culpable. The disposition to help a friend may be all very well so long as no one else suffers by it, but in thus aiding one individual, it necessarily follows that others to a greater or less extent must be losers. This is simply a view of borrowing and lending for exhibition in its least objectionable form—when it generally consists in one exhibitor, as is very usual, taking a plant or two, or a dish of fruit or vegetables, to select from more than he requires, and after he has made up his mind what to show, lending that which he has to spare to some one else. As will be easily understood by this it is seldom that the best growers are the delinquents, so far as being the borrowers; it is they who lend to those who hold an inferior position. Some exhibitors appear not to have a spark of honourable feeling about them to prevent them from taking prizes with that which is not solely the result of their own abilities, but are content to win by any means, however unfair. But there is sometimes a still more dishonourable arrangement made betwixt borrower and lender, wherein the lender receives a portion of the prize or prizes thus obtained, proportionate to the extent to which he contributes to the dishonest transaction. Here, as is evident, there is little to choose between the pair of worthies. There is another form of trickery occasionally resorted to: where the regulations prohibit an exhibitor from taking more than one prize in a class, a large grower in any particular department will sometimes enter two lots—one in his own name, and another in that of some one else, who lends himself to the transaction. This more frequently takes place in collections of cut blooms, vegetables, or something neither bulky nor easy of detection; but, like the preceding disreputable acts we have named, it is equally unfair and dishonest if there are any other competitors who are thus deprived of prizes.

We are aware that there is often difficulty in bringing these acts home to the delinquents; for, even if the productions can be identified as having been grown and owned by a particular individual other than the exhibitor, it is easy for the parties to say they have changed hands in the ordinary way of sale. Then, again, there is frequently a disposition on the part of committees and secretaries of societies to avoid the trouble and annoyance of sifting to the bottom any matters of this kind when there is a moral certainty that fraud has been practised, but where, as we have before said, there exists a difficulty in proving it. Even with honest competing exhibitors, who are the sufferers by the collusive actions of the unscrupulous, there is frequently an unaccountable reluctance to expose this trickery. But we say unhesitatingly that it is for the interests of horticulture, which receives so much impulse from these exhibitions when the competition is fair and honourable, that such nefarious acts should in all cases where possible receive the punishment which they deserve. *Exhibitor.*

New Garden Plants.

CROCUS CHRYSANTHUS, *Herbert;* var. FUSCO-TINCTUS, *Baker.**

This is a plant brought two years ago by Mr. Elwes from Asia Minor, and cultivated by the Rev. H. Harpur-Crewe. It has a corm just like that of C. biflorus, 4—5 narrow distinctly vittate leaves, two lanceolate much imbricated spathe-valves, a protruded tube a couple of inches long, dirty white with brown stripes, a deep orange limb an inch deep, the outer segments broadly suffused with sepia-brown all down the back, the three inner ones smaller and tinged with brown at the throat only; genitalia reaching half way up the limb, a glabrous throat, yellow anthers, with a brown connective and deep-coloured red-orange stigmas.

C. CHRYSANTHUS, var. FUSCO-LINEATUS, *Baker.*†

History just the same as in the last. A handsome variety, with a flower just that of ordinary C. susianus, the outer segments marked on the back with five clear feathered stripes of reddish brown; stigmas bright orange.

CROCUS ETRUSCUS, *Parl. Fl. Ital.* iii. 228 ‡

Thanks to the energy and enterprise of Mr. G. Maw, this species, which previously was known only by the dried specimens from which the original description was made by Dr. Parlatore, has now been introduced to our living collections. It proves to be quite distinct from both C. vernus and C. variegatus, and to come about midway between them, but nearer the latter. From C. vernus it differs by its narrower leaves, coarser corm-coats, yellow glabrous throat, and the distinct stripes on the back of the outer segments of the perianth. From C. variegatus it differs by its finer corm-coats, monophyllous proper spathe, deeper yellow throat, and bright lilac of the inside of the flower. It is a native of the Tuscan Maremma, and flowers there at the middle of March. The following description was drawn up from Mr. Maw's specimens:—Corm ovoid-globose, the outer corm-coats composed of coarse fibres. Leaves 2—4, contemporary with the flowers, very narrow, marked with a distinct white central vitta. Top of the flower 5—6 inches above the top of the corm. Basal spathe none. Proper spathe wide-clasping, monophyllous. Tube 2—3 inches long, yellow at the top, with distinct stripes of purple; throat yellow, glabrous; limb an inch deep, the segments oblong, all deep lilac-purple on the face, the outer with five distinct feathered dark purple stripes all the way down the back, but the three inner ones striped at the base only. Stamens more than half as long as the limb; anthers and filaments both bright yellow. Stigmas deep orange-yellow, subentire, overtopping the anthers. *J. G. Baker.*

CYPRIPEDIUM PYCNOPTERUM, *n. hyb.*§

This is a very interesting plant, of surprising colour. It has the leaf of C. hirsutissimum, and a two-flowered

* *Crocus chrysanthus, var. fusco-tinctus.*—Perianthii segmenta exteriora dorso late fusco suffusa; stigmata fulva.

† *C. chrysanthus, var. fusco-lineatus.*—Perianthii segmenta exteriora dorso rubro-brunnea, vittis 5-perspicuis plumosis.

‡ *C. etruscus*—Cormo ovoideo-globoso, tunicis crasse fibrosis; foliis 2—4 synanthiis distincte albo-costatis; spatha basali nulla, spatha propria monophylla; perianthii tubo segmentis 2—3-plo longiori, fauce luteo glabro; segmentis oblongis facie lilacinis, exterioribus vittis 5 atro-purpureis plumosis percursis, interioribus basi solum vittatis; staminibus prorsus splendide flavis; stigmatibus subintegris aurantiacis antheras superantibus.

§ *Cypripedium pycnopterum*, n. hyb.—Foliis rigidis lineari-ligulatis acutis apice microscopice serratis; pedunculo dense breviter villoso bifloro; bracteis complicatis triangulis dorso carinatis ciliatis, lateribus ciliatis ovario velutino vix dimidio æqualibus; sepalo impari elliptico apiculato transverso ciliato dorso pilosulo; sepalo inferiori subæquali longiori, angustiori, apice cucullato, egregi e bicarinata; tepalis ligulatis apicem versus dilatatis apice acutis, semel tortis ciliatis; sepala bene excedentibus, cruciate divaricatis; sacco utrinque ante, medio emarginata; carinula dentata utrinque in sium inter saccum et unguem; staminodio cuneato dilatato apice forcipato cum denticulo interjecto. retinervi in disco.

peduncle, much in the way of that of C. Lowii, but smaller and apparently very much shorter, brownish, densely covered with very short hairs. The triangular ancipitous bracts are green, with a few dark longitudinal stripes. Both sepals are of a light striking parrot-green, the upper one is broader, the inferior one narrower and cucullate. The ligulate petals are broader towards their acute apex, a good deal longer than the sepals, and ciliate. At the base they are green, with dark warty blotches, and excepting this they are of a violet colour, turning into what we call, since Dr. Lindley's days in Orchidology, port-wine colour. The lip has that peculiar hue between olive-green and brown.

I obtained this curious plant from Mr. Harry Veitch, who states there are no records kept about its origin. My first thought was of Cypripedium Lowii, and it is something like C. pardinum, in consequence of the very showy dark blotches on petals. Then I got doubtful, thinking it an offspring of C. hirsutissimum, since the flowers are much smaller than those of C. Lowii. Finally, I had a good reason for returning to this as a parent. In the sinus between the lateral horns of the lip's sac and the channelled unguis of the lip stands on each side a keel with one or two teeth. Such a keel—a much better one, indeed, is the most striking feature of C. Lowii botanically. And which species may be the other parent? The foreipate anterior part of the staminode is not to be found in C. pardinum. It makes me think of C. barbatum, which has also such warty blotches on the base of petals. It is, however, very surprising that there is no vestige of any marbling on the leaf. The younger leaf may have some such marbling. I need not say that Mr. Harry Veitch is too good a friend to Orchids to cut the youngest leaf. The leaf at hand is rather old and shrivelled, and remarkably short and narrow (5 inches long by $\frac{5}{8}$ inch wide). *H. G. Rchb. f.*

THE ROYAL ACADEMY.

There are fewer pictures of flowers and fruit at Burlington House this year than usual. Some paintings of flowers, however, and especially those associated with figure subjects, are better than have been observed during many previous years. Taking the pictures in numerical order, and passing during our transit of the rooms many landscapes of great beauty and merit, we may first pause at 65, "Where the Bee Sucks" (Jerry Barrett). Here we have a lady (with a Japanese umbrella) in a garden standing by a six-foot Sunflower in full bloom; the garden plants are all well painted, and the great Sunflower, with its foliage in excellent perspective, is perfect both in drawing and colour. 78, "Flowers and Fruit" (W. J. Muckley), a picture of white Water Lilies, Azaleas and Oranges, all well executed. 79. "The Ruins of Kom. Ombo." (E. W. Cooke, R.A). A magnificent richly coloured Egyptian landscape, representing fading day with the moon just rising about a Ptolemaic temple. 92, "Fruit, &c." (W. J. Muckley). This picture of Melons, Grapes, &c., though good, does not equal No. 78, by the same artist. 106, "Over the Hills and Far Away" (J. E. Millais, R.A.), is one of this artist's best landscapes, and represents the Scottish hills of the country of Macbeth near Birnam. 114, "Garden Roses" (A. Dever), is a brightly painted picture. 123, "Brackens" (R. Greenlees), is an excellent painting of a most difficult subject, viz, a large group of Pteris aquilina seen in perspective. 211, "Quince and Golden Drops" (W. Hughes), is an admirable study of fruit, but the Hart's-tongue Ferns in the background are defective in drawing. 216, "Fruit" (F. R. Stock), is a very dull production, with a butterfly so flat and out of perspective that it appears to be pinned like a specimens to the canvas. 249. "An Audience at Agrippa's" (L. Alma-Tadema, A.). This figure-subject is one of the most admirable in the exhibition for its simple perfection of drawing and colour: apart from the figures, the perspective is true to illusion, and the imitation of the polished surface of the marble of the walls with the joints, the unpolished marble of the sculptured figure and the bronze letters, have never been surpassed for absolute fidelity. 319, "Apples" (Miss J. Archer), and 321, "Fruit" (Mrs. B. Dawson), the latter representing Apples and Nuts, may both be glanced at in passing as two different modes of treating the same materials. 339, "Water Lilies, &c." (W. J. Muckley), is a good picture of white Water Lilies, with Clematis, Nasturtium, &c.; the perspective of the leaves in the Clematis is capital. 372, "Garden Lily" (Miss D. M. Mutrie), and 402, "The Evening Primrose" (Miss A. F. Mutrie), are pictures of very similar character by these excellent artists. The first is a representation of Lilium candidum, in a group with the Fuchsia, Larkspur, Nasturtium, and Pink. The latter represents evening Primroses, with Wallflowers, &c. Both are painted in the perfect manner peculiar to these well-known artists. Of the two pictures we prefer the last, where a beetle and moth (the latter not pinned out as a specimen) are introduced with good effect. 462, "Water Lilies" (J. Aumonier). Though roughly painted this is a beautiful and truthful picture of a large Rushy pool, full of white and yellow Water Lilies. The latter have been carefully studied, and are very true to Nature. The leaves, in their struggle with each other to lie flat on the water, are seen in varied perspective. 511, "The Lady of the Woods" (J. MacWhirter), is a good study of a Birch tree. The crimson Agaricus muscarius commonly grows under such trees, and a group of these fungi would have lighted up the picture as they do the Birch woodlands. 545. "Roses" (G. P. Chalmers). Nothing could be more wretched than the treatment of the subject of this picture. 558. "Choosing a Nosegay" (C. E. Perugini). This, like the first picture noticed in this report, represents a girl in a garden standing by a six-foot Sunflower; the great Sunflower on the left, with its well painted foliage and flower, is very good, as are the plants of Mignonette, Roses and Geraniums on the right of the picture. 644, "Flowers" (H. Caffieri), is a somewhat rough water-colour drawing, very true to Nature, painted in body and representing Cinerarias and Azaleas. 656, "Wallflowers" (H. C. Angell), is bold, brilliant, and excellent in execution. 664. "Bough of Peaches" (J. Sherrin), is very natural and elaborately worked up, but straggling and unsatisfactory to the eye. 677, "Opal Cup and Azaleas" (Mrs. P. J. Naftel), is very good in execution, but there is a plague of Azaleas in the water-colour room this year, as there was of Primroses last year. 678, "Azaleas" (Miss S. Soden), inferior to the last, with Lilies of the Valley as unlike Nature as possible. 688, "My Window" (Miss M. Walker), an ambitious but poorly painted picture of an open window, with Roses, scarlet Poppies, &c. 695, "Plums" (W. Hough), an excellently painted picture of Plums, Pears, &c., but with a staring effect. 702, "Roses" (H. C. Angell), is in great contrast with the last, and represents well-painted deep red and yellow Roses. 708, "Sunflowers" (Mrs. C. B. Phillip), is a large study of Sunflowers, but the picture lacks the brilliancy of Nature, and is otherwise not good. 710, "Almond Blossom and Narcissus" (J. J. Hardwick), is a well-executed study of the blooms named. 714, "Striped Azaleas" (Mrs. A. L. Guibin), is very good. 741, "Plums and Grapes" (W. Hough), is excellent in execution, but the same criticism will apply to this as to No. 695. 744, "Apple and Damsons" (Miss A. M. Fitz-James), is a careful study of these fruits. 746, "Firstborn of the Roses" (Miss M. Rogers), is a by no means good painting of a white Dog Rose. 755, "Fruit" (Miss E. S. Wood), is a large and ambitious picture, but by no means a success; it includes our old friend the great Melon, with the slice cut out, and the usual Grapes, but less usual Tomatos. 775, "Mushrooms" (E. Slader), is an exact reproduction of a punnet of these delightful esculents, but unfortunately the market variety is represented, as the yellowish stains clearly show. 819, "Camellias" (S. T. Whiteford), is a very good study of the red and white varieties of these plants, with the polished foliage well rendered. 822, "Study of Flowers" (Mrs. P. J. Naftel), Azaleas again, and Wallflowers, but well drawn and painted, so worthy of passing remark. 832, "Chrysanthemums" (Mrs. Pfeiffer), very unsatisfactory in every way, and especially in the treatment of the foliage. 865. "Study of Flowers" (S. T. Whiteford), red and white Camellias and a white Rose, all well drawn and painted, and in good perspective. 1339, "Wild Flowers" (A. C. Sealy), is a large canvas representing an entangled mass of umbelliferous plants and grasses, but not sufficiently exact to Nature.

A SYNOPSIS OF THE KNOWN SPECIES OF IRIS.—III.

5. *Xiphion filifolium*, Klatt, in Linnæa, vol. xxxiv., p. 571; Hook. fil. Bot. Mag., tab. 5928; *Iris filifolia*, Boiss. Voy. Esp., p. 602, t. 170; *X. tingitanum*, Hook. fil. Bot. Mag., t. 5981, non Baker.—Bulb ovoid, above an inch thick, with many brown membranous coats, produced some distance up the neck. Stem slender, terete, 1—2 feet high, unbranched, ending in a single spathe. Leaves half a dozen or more, the lower ones filiform, above a foot long, the scariose outside ones at the base of the stem flat and mottled with deep purple on a green ground, those immediately below the spathe green and bract-like. Spathe 3—4 inches long, the valves pale green and lanceolate. Ovary and pedicel each 15—18 lines long; tube an inch long above the ovary, limb 2½ inches deep, bright deep purple; the orbicular lamina of the falls an inch broad, shorter than the broad panduriform claw, and keeled at the base with bright yellow; standards oblanceolate, erect, ½ inch broad. Stigmas 2 inches deep, including the large crests. Anther above ½ inch long.

A native of the South of Spain, ascending from the rock of Gibraltar to a height of 3000 or 4000 feet on the Sierra Nevada. There are now three excellent figures of this species, as just cited. It was introduced into English gardens from Gibraltar by Mr. G. Maw, in 1869. The deep brilliant purple of the flowers, brought into relief by the bright yellow spot at the throat of the lamina of the falls, renders it a very striking species. The Tangiers plant, figured *Bot. Mag.*, t. 5981, is a variety with broader leaves and larger flowers, which was discovered at Laraisch, ten miles south-west of Tangiers, by Sir J. Drummond-Hay, by whom bulbs were procured for the Kew collection, from the produce of which Mr. Fitch's drawing was made.

6. *X. junceum*, Klatt, in Linnæa, vol. xxxiv., p. 570; Parl. Fl. Ital., vol. iii., p. 304; *Iris juncea*, Desf. Fl. Atlant., vol. i., p. 39, t. 4; Lam. Encyc., vol. iii., p. 305; Bot. Mag., t. 5899, non Brotero; *I. imberbis*, Poiret, Voy. Barb., vol. ii.; *I. mauritanica*, Clus. Cur. Post. p. 24; Ker, in Bot. Mag., sub. t. 980.—Bulb ovoid, the size of a hazel-nut, with hard brown membranous coats, produced into a crown of fibres at the neck. Stems flexuose, terete, 1—1½ foot high, simple, and ending in a single spathe. Leaves numerous, superposed, terete, under a line thick, the lower ones a foot long. Spathe 2—3 inches deep, the lanceolate valves dry and acuminate. Pedicel very short; ovary cylindrical, under an inch long; tube slender, 1—1½ inch long; limb 1½—2 inches deep, pale yellow; lamina of the falls orbicular, an inch broad under cultivation, about as long as the broad claw; standards oblanceolate, erect, 3—4 lines broad. Stigmas, including the deltoid crests, above an inch long. Anther pale yellow, ligulate, ⅝ inch long, exceeding the subulate filament.

Of this I believe the flowers are always pale primrose-yellow. It has been confounded with X. lusitanicum, but is more slender in all its parts, with falls of a different shape. It extends in North Africa from Morocco to Algiers, and occurs also in Europe, in Sicily and near Genoa. It was known as far back as Clusius, but has never been cultivated extensively. In Algeria it is called Zetoutt, and the bulbs are dug up for eating by the women and children. It flowers in May and June.

7. *X. tingitanum*, Baker, in Seem. Journ. 1871, p. 13; *Iris tingitana*, Boiss. and Reut. Pugill., p. 113.—Bulb ovoid, 1½ inch thick, with brown membranous coats. Stems stout, terete, 2—3 feet high, unbranched, and ending in a single spathe. Lower leaves linear-complicate, above a foot long, half an inch broad after leaving the stem; upper gradually smaller. Spathes two-flowered, 5—6 inches deep, the valves lanceolate-acuminate. Ovary 1½ inch long, equalling its pedicel; tube about the same length; limb lilac-purple, 3 inches deep, the orbicular blade of the falls shorter than the broad panduriform claw; standards erect, oblanceolate, ¼ inch broad. Stigmas above 2 inches deep, including the crests. Anther ¾ inch long, equalling the filament.

Discovered by Salzmann in meadows near Tangiers. It is most like X. latifolium in habit, but in the shape of the falls coincides with X. vulgare. It may not be really distinct specifically from X. Fontanesii, but this can only be settled when the two are brought side by side into cultivation.

8. *X. reticulatum*, Klatt, in Linnæa, vol. xxxiv., p. 572; Baker, in Seem. Journ. 1871, p. 41; *Iris reticulata*, M. Bieb. Fl. Taur. Cauc., p. 34, t. 1; Cent. Pl. Ross., t. 11; Sweet, Flow. Gard., ser. 2, t. 189; Bot. Mag., t. 5577; Lodd. Bot. Cab., t. 1829; Regel, Gartenflora, t. 452; *Neubeckia reticulata*, Alefeld, in Bot. Zeit. 1863, p. 269.—Bulb ovoid, ½—¾ inch thick, with a long neck, and very distinctly fibrous coats, the vertical strands connected by regularly parallel erecto-patent threads, as in Crocus Fleischeri. Leaves generally two to a tuft, about as high as the flower at the flowering time, but growing afterwards to a length of a foot or more, green, reedy in texture, subulate-tetragonal, a line thick. Stem none, so that the one-flowered spathe is sessile in the centre of the tuft of leaves. Valves linear, 2—3 inches long, not ventricose, greenish. Ovary ½ inch long, with a short pedicel. Tube 2—3 inches long, exserted from the spathe. Limb deep bright violet purple, 1½ inch deep. Lamina of the falls oblong, not more than half as long as the oblong-cuneate claw, furnished with a narrow paler keel,

dotted with violet spots, with a narrow bright yellow line down the centre. Standards erect, oblanceolate, ⅛ inch broad. Stigmas 1½ inch deep, including the lanceolate crests, so that standards, falls, and stigmas, are all three about equal in length. Anthers ⅜ inch long, rather shorter than the filaments.

This familiar and beautiful little species ranges from the Caucasus and Kurdistan to Cappadocia and the South of Palestine. It flowers in England in February and March, and in its native countries always grows high up the mountains. In Armenia it reaches an elevation of 6000 feet, flowering beside the melting snows in May. The leaves in England reach their full development early in May. The only other species which it at all resembles is X. Histrio, which has a similar habit and leaves, but different bulbs and flowers. The variety *Krelagei* of Regel, Animad., p. 15, which is the plant figured by Sweet, Loddiges, and Regel, as above cited, differs from the type by being nearly or quite inodorous, with a tube not exserted from the spathe, and the colour of the limb a more slaty purple, with the yellow keel of the lamina of the falls fainter, and the claw not merely keeled in the centre, but variegated with blotches and lines that reach to the edge.

9. *X. diversifolium*, Klatt, in Linnæa, vol. xxxiv., p. 572; Baker, in Seem. Journ. 1871, p. 42: *Vieusseuxia Schimperi* and *tridentata*, Hochst, in Schimp. Pl. Abyss., No. 1296; A. Rich. Tent. Fl. Abyss., vol. ii., p. 305; *Hymenostigma Schimperi* and *tridentatum*, Hochst, in Flora, 1844, p. 24-25; *Iris diversifolia*, Stead. in Schimp. Pl. Abyss., No. 1173.—Bulbs ovoid, an inch thick, with a long neck and brown coats, which split up more or less into fibres at the base, but are not regularly stranded as in the last. Stem a foot or more high, simple, with a single 1—2-flowered terminal spathe. Leaves thick, linear, rigid, longer than the stem, ½ inch broad, the upper ones reduced and bract-like. Spathe-valves linear, 3—3½ inches long, acuminate, tight-clasping, scariose at the top at the flowering season. Flowering pedicels nearly as long as the spathe, stiffly erect. Ovary cylindrical, ½ inch long. Tube above the ovary none. Limb lilac, 1½ inch deep. Blade of the falls oblong, as long as the claw, which is narrowed gradually from the tip to the base. Standards erect, oblanceolate, ⅛ inch broad, rather shorter than the falls. Stigmas, including the lanceolate crests, as long as the standards. Anther ⅜ inch long, equalling the filament. Capsule oblong, under an inch long.

All the above names evidently belong to a single very distinct species, which inhabits the mountains of Abyssinia, and has not yet been introduced into cultivation. From all the other species of the group, except the two first, it differs by having no tube above the ovary, and the flower is not above half the size of that of these two, and the divisions are quite different in shape. In the character of the bulb-coats it comes half-way between reticulatum and the other species of the group. To class it with the Peacock Irises, as A. Richard has done, is very wide of the mark. *J. G. Baker.*

THE COMMON HOLLY AND ITS VARIETIES.—XI.

C. LEAVES GOLD-VARIEGATED.

** Spines plane, not divaricate.
†† Leaves gold-blotched.
‡ Leaves large.

131. I. A. LAWSONIANA, Lawson, Smith, Barron, W. Paul; Lawsoniana variegata, Smith (fig. 110).—This is a fine conspicuous Holly, not only on account of the size of the leaves, but also for the bold and striking markings of their surface. It has the young bark of a reddish brown. The leaves are ovate or bluntly elliptical, 2½ to 3½ inches long, the margins distantly but tolerably regularly spined, and nearly or quite plane; they are of an opaque green, the central or discal portions marked with broad bands or blotches of yellow, very variable in shape, but often occupying the greater part of the surface on one side the costa, the marginal portions green, showing two shades of colour. Occasionally the spines are more numerous than in our figure (about ten on each side), and sometimes less numerous when either the basal part or a portion of the side is spineless. It is one of the handsomest of the golden Hollies.

‡‡ Leaves medium-sized.

132. I. A. MADERENSIS VARIEGATA, Fisher, W. Paul; maderensis picta, Paul & Son.—A variety with dark reddish purple bark. The leaves are ovate or obovate, 2—2½ inches long, distantly plane-spined, or occasionally somewhat wavy; the colour is a dark green at the margin, with a feathered golden blotch, mixed with pale green, in the centre. The colours are bright and effective.

FIG. 109.—I. A. SERRATIFOLIA AUREO-MACULATA.

Messrs. Paul & Son send us, under the name of I. A. maderensis picta major, and in contradistinction with the "old form," a variety in which the marking and colour is very similar to that, but the leaves are somewhat larger in size.

FIG. 110.—I. A. LAWSONIANA.

‡‡‡ Leaves small.

133. I. A. MYRTIFOLIA AUREO-MACULATA, Barron (fig. 111).—A very cheerful looking and effective variety, in which the bark of the young wood is purple.

FIG. 111.—I. A. MYRTIFOLIA AUREO-MACULATA.

The leaves are ovate, an inch to an inch and a-half long, stout in texture, of a glossy dark green, distinctly marked by broad clearly-defined blotches of deep yellow in the centre or disk, the markings very variable in form and arrangement; the margin is furnished with numerous even spines, which are developed in the plane of the lip or nearly so. It is one of the handsomer of the smaller Hollies.

134. I. A. SERRATIFOLIA AUREO-MACULATA, Barron; Gold-blotched angustifolia, Waterer (fig. 109).—A very pretty minute-leaved gold-blotched variety, of the purple-barked series. The leaves are lanceolate, an inch to an inch and a half long, and barely half an inch broad, with few distant moderately developed spines lying in the plane of the leaf, the somewhat extended apex being entire. The colour is a dark glossy green, decorated sometimes in the centre, sometimes near the edge, with bands or fillets of gold, the markings being very dissimilar in different leaves. The colours of the leaves are, however, less brilliant and effective than those of the preceding variety. *T. Moore.*

OLD MAPLES.

(*Concluded from p.* 534.)

I HAVE lately met with a number of large and very old Maples in Sherborne Park, Dorset, which I visited with my friend Professor Buckman, and I know of no other park where so many fine Maples have been preserved. One of these, hollow, and partially despoiled by tempestuous winds, measures 12 feet in girth at 3 feet from the ground; and two others have attained the dimensions of 10 feet in girth. I have depicted a very remarkable half uprooted and declining Maple, with very knobby and tortuous arms, that measures 15 feet round its base, having a mass of roots that have been forced out of the ground, though with sufficient persistence to prevent the tree from becoming prostrate. (See fig. 113.) There are many other Maples less aged in Sherborne Park forming masses of dense foliage, and some of them rising to a height of between 40 and 50 feet. One tree that I have figured (fig. 112) makes a singularly grotesque object from its half-denuded very knotty trunk, and bare extended arms. This is 9 feet in girth at a yard from the base, and must have borne the brunt of winter storms in all probability for five centuries, and is likely to endure a century longer. There is in a field between the Bishopstone Woods and Byford Rectory, two conjoined Maples of considerable age that measure 6 feet across their involved boles.

Another very remarkable tortuous-branching stag's-horned Oak of great size exists in Hartlebury Park, Worcestershire, adjoining a castle that has been a residence of the Bishop of Worcester from the earliest records appertaining to the see down to the present time. This grand Oak measures 38 feet near the base, which is not at all swollen, and has a seat round one side of it, where no doubt many successive prelates have sat and meditated on the scene around. This tree has a singular aspect from the new wood having surrounded the original decayed and bleached bole, and thus a scion from the parent protects and keeps as in a sepulchral monument the bones of its progenitor, whose origin is concealed in the mists of past ages.

Though the Maple is now but little esteemed or regarded, and is excluded from modern shrubberies, yet it deserves preservation in parks where it has grown unmutilated, and there makes a respectable if not dignified figure as a low bushy tree, and its branches contribute to give it a rugged character on close inspection. It is, however, now chiefly observable in the bounding hedges of old lanes and hollow-ways, but seldom escaping intermittent hacking, and consequent deformity. It was more honoured in olden times, as Virgil represents Evander, who was a provincial king, as receiving Æneas seated on a Maple throne—*Solioque invitat acerno*—and Chaucer makes the Maple as forming a bower for the fair Rosamond. The wood was much esteemed among the Romans for making tables, from the closeness of its grain; and Maple bowls were formerly not uncommon. Even in Evelyn's time, he says that the wood of the Maple was much esteemed for all kinds of turnery ware; but the crockery of Wedgwood and the Potteries has consigned nearly all wooden ware to the memory of old-fashioned times, and the "piggins" once seen in all farmhouse kitchens can no longer be met with. To me the Maple is a familiar tree, pleasantly indicative of home scenery, so that I am inclined to give it a concluding testimonial from the pages of Knapp's *Journal of a Naturalist*. This truthful observer of the works of Nature remarks:—

"We find the Maple useful in our hedges, not from the opposition it affords, but by reason of its very quick

growth from the stool after it has been cut, whence it makes a fence in a shorter time than most of its companions; and when firewood is an object, it soon becomes sufficiently large for this purpose. The singular ruggedness of the branches and shoots when they have attained a year's growth, and the depth of the furrows, give it a strongly marked character among our shrubs. The under-side of the leaves in autumn, when they become yellow, dashed here and there with a few specks of red and brown, appear, when magnified, like a very beautiful and perfect mosaic pavement, with all its tesserae arranged and fitted. If one of these rugged young shoots be cut through horizontally with a sharp knife, its cork-like bark presents the figure of a star with five or more rays, sometimes irregularly, but generally exactly defined. A thin slice from this surface is a beautiful and curious object in the microscope, exhibiting the different channels and variously formed tubes through which the sap flows and the air circulates for the supply of all the diversified requirements of the plant. And it is good and delightful to contemplate the wonderful mechanism that has been devised by the Almighty Architect for the sustenance and particular necessities of the simple Maple."

Though it does not clearly appear to what age a Maple may attain, those trees that have reached a girth of from 10 to 16 feet, as the Maples depicted at Powick, and one mentioned several years since in the *Gardeners' Chronicle* as standing near Docking Hall, in Norfolk, must at least have existed four centuries, for a pollard Maple exhibits very little accession of size in fifty years, as my experience shows. Maples, indeed, often escape the axe when the decree has gone forth for all profitable timber trees to be felled, and thus their existence is maintained when other loftier denizens of the woodland are consigned to the hammer. When searching for the old trees still remaining in Malvern Chace, and especially for any that might have been coeval with the castle of Hanley, where the Earls of Gloucester and Warwick held sway, the only old tree that I could find that might fairly be considered to have met the eye of the De Clares and Beauchamps when residing at their baronial castle was a neglected Maple. The leaves of the Maple are often covered with a crowded multitude of minute red pimples, produced no doubt by some member of the tribe of Cynipidæ, that make galls upon Oaks and various other trees, though whether the particular insect that studs the Maple leaves has been named by entomologists specifically I have not been able to ascertain. *Edwin Lees, F.L.S., Green Hill Summit, Worcester.*

In the autumn or beginning of winter I lay bare the stem and roots of the Vine as far as can conveniently be done, remove the loose bark from the underground part of the stem and roots, and carefully burn it, for under it large quantities of eggs and insects

Fig. 112.—Grotesque battered and knotty old Maple, in Sherborne Park, Dorset.

vessel (I use a fish-kettle), with a sufficient quantity of water. Place the kettle over the fire (an iron plate is very useful for the purpose, as it prevents the risk of accident) until the water is hot enough to heat the turpentine in the bottles and dissolve the resin; shake the mixture and allow it to cool, then apply it with a brush to the roots and stem; allow the mixture to become somewhat dry before shovelling in the earth. I take this opportunity to manure the Vines. As the mixture becomes sticky in drying the insects are unable to move; the breathing holes or apertures of their bodies get clogged up, and the insects die. The mixture forms a varnish on the eggs and prevents their further development, and as the stickiness continues for a considerable length of time it prevents a fresh attack from other insects that may have escaped being touched. I have carefully examined the effect under a microscope, and have never found the insects survive this treatment. This application, as far as my experience has gone, does no injury to the Vines, which is more than can be said of other mixtures I have used. The cost of the mixture for each Vine is less than a halfpenny. It can hardly be expected to eradicate the disease entirely, as it is almost impossible to get at all the insects, but it may keep it considerably in check. *T. S. Leacock, April.*

The Villa Garden.

Town Gardening.—There are a considerable number of bulbous plants that are well adapted for culture in towns that do not receive one-half the attention they deserve, and that probably because there is much need for a better knowledge of them. Our experience teaches us that bulbous plants are really easily grown; and, when grown, are very satisfactory. There is another advantage belonging to them which may be said to peculiarly fit them for culture in London, namely, this—that they bloom at a time when the houses are tenanted, and they go to rest at a time when the great flood of fashionable life has ebbed away to other social shores.

Treatment of Bulbous Plants after they have Gone out of Flower.—In their appropriate seasons we have touched on the culture of well-known early bulbs, such as Snowdrops, Scillas, Crocus, Narcissus, and Hyacinths. It now remains to be stated

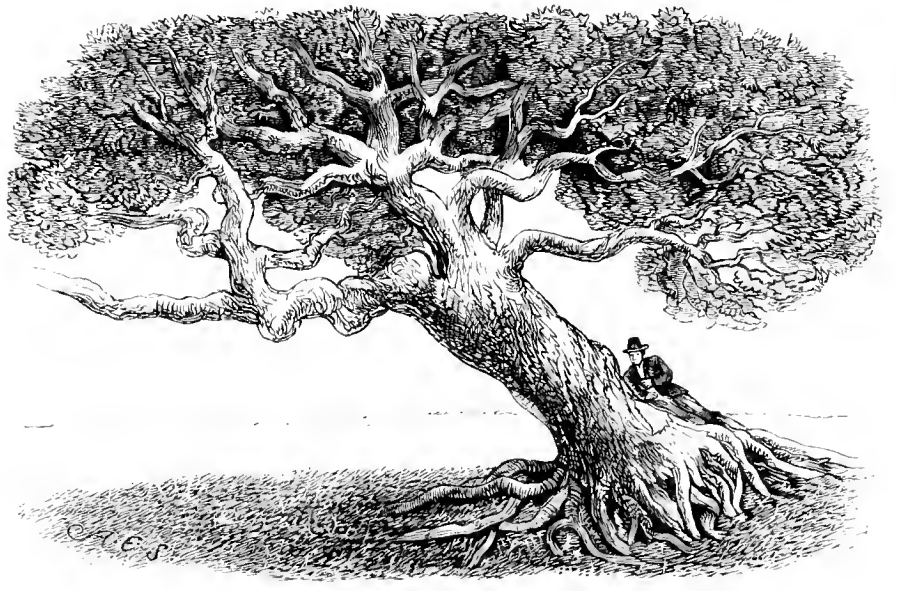


Fig. 113.—Old tortuous Maple in Sherborne Park, Dorset, fifteen feet round, and ten feet girth a yard from base.

Fig. 114.—Old pollard distorted Maple, Eastnor, Herefordshire.

Foreign Correspondence.

Madeira—*Phylloxera vastatrix.*—After trying the various remedies recommended and some others, with little or no success, I have for some time past adopted the following mode of treatment, which I have found to answer better than any of my previous experiments.

are generally concealed, and where in winter-time I mostly find them; then with a brush I apply the following mixture to the roots and stem that have been laid bare:—Into an ordinary quart wine-bottle put 100 grammes (about 3½ ounces) of finely pounded resin, then fill up the bowl with oil of turpentine, leaving a small space for expansion; place as many of these bottles as may be convenient in a saucepan or other

that these have well-nigh gone out of flower, and as a general rule, may be thrown away. They are cheap in the matter of price, and they can soon be procured in the autumn; and they are, as a general rule, more satisfactory as flowering plants when they were newly imported bulbs. By this term we mean bulbs newly imported from Holland—the great bulb-producing country of Europe. Still, some are found

desirous of saving them for further service in the autumn, regarding this act of preserving as a real pleasure in gardening. To such a few directions bearing on the best mode of preserving the bulbs will, no doubt, prove acceptable.

It is the neglect received during the summer that destroys the flower-producing property in the bulbs; therefore, though the plants are in a state of rest, they must not be neglected. Many suppose that the best way to ripen bulbs is to keep them perfectly dry during the summer, but this is not ripening and maturing them, but starving them with a vengeance. When such bulbs, growing in the open ground, go to rest, they are not kept dry, but have all the rain that can fall upon them; so the bulbs preserved during the summer should enjoy the same privilege, and if housed in their pots should have in addition good waterings during dry weather. One good mode of preserving them would be to obtain some orange-boxes and place the pots in them, filling up the spaces between with finely-sifted cinder ashes, or cocoa-nut refuse, which can now be purchased very cheaply; when this becomes thoroughly saturated with wet it will keep the pots and soil cool for a considerable time. Where to stow them away is another consideration; we might suggest on leads, or in areas, or, if such a thing exists in a crowded part of a town, a back yard; as a last resource a disused attic might be of service, but the boxes would need to stand in metal pans of some kind to keep the wet from the pots from injuring the floor.

Bulbous Plants to Succeed.—The Anemone family supplies many subjects that, with the due discharge of requisite attention, can be made to be of great use in towns. Two of the earliest flowering among them, A. blanda and A. apennina, are now out of bloom, but we have this season had them very pretty in pots. A few tubers in a 32-sized pot, if planted with good soil, will grow on for blooming for two and three years if looked after during the summer in the way recommended for bulbous plants. Then there is the common Wood Anemone, A. nemorosa, and its double white variety, both of which succeed well in pots, and bloom nicely and freely. There are also the ordinary garden varieties, both single and double, which are very showy indeed, because they can be had in so many rich colours, and would now be in full bloom. Again, there is the most beautiful almost of all the Anemones, and, let us add, one of the most easily grown, the splendid A. fulgens, with its showy vermilion flowers of a most attractive character. The last-named is a little scarce and dear, but it is a great beauty when its rich, shining, crimson flowers are at their best. If the Anemones are allowed to occupy the same pots for two or three years in succession, then we would recommend those who grow them for town decoration to take off some of the surface soil in early spring, just as they commence to make their growth, and add an inch or so of cow-dung, moistened if dry; or, failing that, a little rotten manure. When water is given, the invigorating influence of the manure is carried down among the roots, with great advantage to the plants. A little manure-water might be given when the plants are coming into bloom; but it is an article difficult to get in towns, and one that needs to be carefully selected, as well as given with great care.

Another good and pretty bulbous plant for towns is the Triteleia. This is very pretty, and the plant, when well established, flowers with great freedom, but if it is not closely allied to the Garlic, it has the smell of it, and it is therefore much objected to by some, and yet it does so nicely in a pot, and will grow almost anywhere. The flowers are white, prettily tinted with pale azure-blue, and it may be put into a pot and allowed to remain unmolested for a few years. There is a variety of it with flowers deeply tinted and suffused with lilac, which is very pretty indeed, and well worth growing. These are now almost out of flower, but they well deserve mentioning, and should be borne in mind for next spring.

Then there are the Irises, with their quaintly shaped grotesque flowers of many colours. They are divided into two main sections, the bulbous and the rhizomatous, the last being the one best fitted for cultivation in pots. There is what is known as Iris pumila or the dwarf Flag, with its many varieties, all of which bloom with great freedom, and they can be grown with the greatest ease. They want a good well-drained soil, and in this the plants do well and grow freely. The varieties of Iris pumila are not expensive, and a plant or two will in the course of two or three years grow into one strong enough to divide into others. Not only do these pretty dwarf Flags flower in early spring, but they will sometimes bloom again in autumn, though the second crop of flowers might rather be looked for on well-established plants in the open ground. Then there is the larger Iris, the common blue Flag of our gardens, which does well also in a good well-drained soil, and would flower in pots. It is a fine old-fashioned plant that every one likes, and many who come from the country to London would like to look upon this old occupant of cottage and wayside gardens. When the plants have done blooming the pots need to be put in a shady place for the summer, but keeping them well-watered in dry weather. It would be the best plan to repot them each year, doing it in early spring, for they make thick, fleshy roots, which need something to feed upon.

Then there are some of the earlier flowering Lilies, such as L. umbellatum, L. longiflorum, L. candidum—the common white Lily, and L. auratum, all of which can be grown in pots in towns, though they require some attention to keep them healthy and of vigorous growth. L. umbellatum is the earliest to bloom. We have now some plants in 24-sized pots, the bulbs of which were potted in February last, that are throwing up strong flowering spikes. The Lilies can be grown on leads and in areas, and simply need rich soil and fair-sized pots, but not too large, for they do not make a great deal of root growth. When making their growth they push along strongly, and need to be kept well watered in drying weather.

Garden Operations.

PLANT HOUSES.

Greenhouse Hard Wooded Plants.—Plants that were potted some time back will, as the roots lay hold of the new soil, require more water than it was safe to give them immediately after they were moved. Those who have not had much practice in the cultivation of this description of plants often fall into the general mistake of treating all hard-wooded greenhouse subjects alike, especially in the matter of water. When we consider the different countries they come from, and the widely different conditions under which they exist naturally, particularly as to the more or less humid state of both atmosphere and soil, it is no wonder that the all-alike kind of treatment they frequently receive ends in a few thriving under it, the rest succumbing; and thus it is that many of these plants get the name of being very difficult to keep in health, whereas, if their absolute requirements were duly studied, in many cases those that die would be found just as easy to manage as those that succeed. A miscellaneous collection of hard-wooded greenhouse plants are the very best subjects that any young gardener can have to deal with to teach him that success in gardening at the present day can only be arrived at by closely studying the immensely different treatment needed by the great variety of things now in general cultivation; for in no class of plants grown for any purpose is there so much difference in the treatment required, with an imperative necessity for their immediate wants being punctually attended to, as a day's neglect is often fatal, and undoes the work and attention of years, whereas in the case of subjects of a more vigorous nature little or only temporary injury would follow. It will be easily understood by any one giving a moment's consideration to the subject that, independent of the well-known fact of the freest growing species or varieties of plants requiring the soil in which their roots are placed to be kept in a more moist condition than such as are naturally of slower growth, that any individual plant of whatever species or variety that happens to be in more vigorous health than others will require more water than those of its kind that are not in such a robust condition. An omission to regulate the use of the water-pot in accordance with this common-sense view of the subject is the cause of many plants, not alone such as have been recently potted, but others that are about commencing growth, getting into a bad condition or dying; for a strong vigorous plant when in active growth is almost as easily killed through an insufficiency of water, as a more weakly example would be through receiving too much. With these plants success can only be attained by the individual treatment of each being regulated by close observation as to its requirements. Any plants that have been placed for a time in a retarding house, where their roots will necessarily be in a less active state, must be watered with caution. More air will now be required by the general stock, not allowing the temperature of the house to rise too high in the mornings before the lights are opened, but even yet the weather is often very keen: in such weather let the greater amount of air given be admitted at the roof instead of at the sides. Keep the atmosphere well moistened amongst young growing plants, just damping them overhead with the syringe at the time of closing in the afternoons; in the case of Pimeleas water should be applied in considerable quantities, wetting the leaves both above and beneath, to keep down red-spider: by this means only can this pest be kept under, for if it once gains any considerable hold of the plants they are permanently injured.

Soft-wooded Greenhouse Plants.—The usual stock of pink and scarlet Zonal Pelargoniums should now be potted and grown on for flowering in a little heat through the winter. There is no method by which these most useful plants can be so well prepared as that practised by the London market growers; by them large plants are not held in estimation, their way being to keep them in 6 or 7-inch pots, plunged out in the full sun during the summer, to get the growth as ripe and hard as possible, so that they have quite a stunted appearance. Grown in this manner they flower profusely instead of running to leaf, which freer grown plants with more root-room would do. Amongst scarlets the comparatively small-leaved, free-flowering variety Vesuvius is a general favourite, being found much better than the large-trussed kinds; but this is now certain to be superseded by the new variety, Wonderful, a semi-double sport, which Mr. George Smith, of Hornsey, has succeeded in obtaining from Vesuvius, and which in appearance and habit, excepting the half-double condition of the flowers, is an exact counterpart of it, possessing the particularly free disposition to flower and the intense colour of the parent, with the advantage that the flowers are so enduring that they may be knocked to pieces before a petal can be caused to fall. I have seen sufficient of this fine variety to feel convinced that it will come into general use with those who require cut flowers in quantity during the winter.

Fuchsias that were struck last summer and potted on as they required it, with a view to their making large specimens for conservatory decoration, must not be stinted for root-room; a portion may, if wanted, be allowed to flower at once. This they will do if the pots are got tolerably filled with roots, and they are stood in a light situation, as after this time they have a greater disposition to flower than to make growth. Such as are desired to bloom later should have their shoots again stopped. Old plants that some time since were shaken out and repotted should, if required to get to a considerable size, be encouraged with weak manure-water, and have the points of the shoots pinched out to make them bushy. The whole should be well syringed every afternoon, getting the water to the underside of the leaves, or red-spider is almost certain to make its appearance. It is a good plan to use the syringe regularly to Fuchsias, even when they are flowering, as no harm will thereby be done to the blooms, and the plants will by this means be kept free from insects.

Palms.—Amongst Palms now there are a number that will succeed in a greenhouse temperature; in these there is such a difference in general appearance as to much enhance their value, and the growth of these cooler-region species is so much slower than in those which come from warmer countries that they are long before they outgrow the limits of a moderate-sized house. These, again, are plants that do not require such large pots as they are often put into. Such pots, if too big, frequently have the opposite effect intended, by causing an unhealthy condition of the roots. They do best in a good strong loam, with just enough sand added to prevent its becoming sour through the application of the considerable quantity of water required during the summer season when growing. At no time must they be allowed to get so dry at the root as most plants. The undermentioned are all desirable:—Areca Baueri, A. lutescens, A. rubra, Cocos australis, C. chilensis, C. coronata, Chamærops tomentosa, C. humilis, C. robusta, C. Fortunei, Corypha australis, Kentia Belmoreana, K. australis, Latania borbonica, Livistonia Hoogendorpii, Phœnix humilis, P. dactylifera, P. reclinata, P. sylvestris, Ptychosperma Cunninghamii, and Trithrinax mauritiæformis. Although many of these are large growers, if allowed unlimited room, yet by keeping them in small pots they can be had for many years in a small or moderate size. Though some of the above are all but hardy, the greater portion will be better for keeping in a temperature not lower than 45° during the winter; even the hardiest of them will look fresher by being so treated. In addition to the above mentioned plants we have now several Zamias that will succeed with greenhouse treatment, and may with advantage be employed for conservatory embellishment. There is one point in connection with the cultivation of all these plants, that it is necessary to see the drainage is kept efficient or the roots cannot continue in a healthy state. *T. Baines.*

FRUIT HOUSES.

Peaches and Nectarines.—In these houses when the fruit is on the verge of colouring see that nothing exists which may be removed that will intercept or interfere with the free access of sunlight and air about the fruit, as, apart from the fact that highly coloured Peaches and Nectarines are universally held in higher repute than those of an insipid looking character, another consideration is even of greater import, namely, "perfection in quality," which should now demand the attention as indicated above to ensure it; see to it therefore at once, and, if practicable, expose as much as possible those fruits which are not advantageously placed: we elevate these by means of a pliable piece of thin lath, which is put under them, and brought up to rest on the trellis. Continue to syringe the trees daily, and ply it freely over those which are at all infested with the red-spider until the fruit begins to soften, when it should be relaxed and a somewhat drier state of the air in the house be substituted. Lose no opportunity to ventilate freely, as a plentiful supply of this element, under favourable conditions, at this stage is most conducive to satisfactory results. The ordinary routine in this department will now, where several peacheries exist, require energetic action necessary to keep all matters well under control. Proceed as requirement needs to check exuberant growths by stopping them at from 10 to 15 inches from the start, and pinch the laterals from these or elsewhere above the first leaf, excepting the terminal shoots or those in the case of young trees which may be required to furnish it. See to the condition of inside borders in late houses: do not permit them to become dust-dry; very copious supplies of water will be needed where the borders are restricted to the inside alone. *G. T. Miles, Wycombe Abbey.*

Melons.—The change to bright sunny weather is now favourable to the early Melons, which will soon be getting ripe. As the fruit show signs of changing water must be gradually withheld from the roots to ensure high flavour. Atmospheric moisture, especially in the afternoon, may be also reduced, but a brisk top and bottom heat, with a free circulation of air, must still be maintained. Stop the fires early on bright mornings, to reduce the necessity of excessive ventilation during the prevalence of cold easterly winds, as Melons in every stage are impatient of cutting draughts. Where the pot system is adopted, a stock of free healthy young plants should be prepared to succeed the first batch as soon as the fruit is cut, having previously turned the bed and cleansed the compartment from insects. Succession plants swelling their fruit will now take liberal supplies of good liquid manure. Remove all laterals and useless spray. Close at 80°, with plenty of atmospheric moisture, and run up 10° to 15° with sun-heat. Plants in pits and frames will now make rapid progress, but checks must be carefully guarded against by constant attention to the linings; these, back and front, should be turned and renovated alternately. Do not attempt to dispense with covering, as the nights are very cold, and a single mat, if only to prevent radiation, will tend to the health, vigour, and free growth of the plants. Follow former directions as to stopping and training. Impregnate all female blossoms. Stop two joints beyond, and place pieces of tile under the fruit. Make fortnightly sowings for succession, and never turn out plants that have been checked by becoming pot-bound. *W. Coleman.*

FLOWER GARDEN.

The weather is still anything but genial, and it will therefore be advisable to make no undue haste to plant out tender plants; but all the kinds recommended to be planted in last fortnight's Calendar should be got out forthwith, and the work in other departments of the garden be got into a forward state, that all available labour may be concentrated on the bedding-out as soon as the weather is safe and favourable. At such a busy time it is difficult to avoid "scamping" the work; but this is bad policy, and is sure to end in disappointment. Better spend a few hours in extra labour and pains now rather than as many days in vexation and dissatisfaction by-and-bye, owing to badly performed work. Shallow planting of bedding stuff is one of the commonest errors connected with the operation, and, little though it seems, it frequently amounts to the making all the difference between the plants doing well or ill; another is loose planting, the ball of the plant not being sufficiently pressed into the soil of the bed; and yet another is planting them when in a dry state. Every plant previous to planting should be in the same state with regard to moisture as the soil into which it is put. In addition to the hints I gave in my last notes as to arrangement and disposition of certain plants, I wish to add that for a large flower garden, where variety is of immense importance, a certain proportion of beds composed of succulent plants should by all means be adopted; such beds are not only novel but interesting, and my experience is that they invariably come in for a greater share of admiration than either the ordinary bedding, subtropical, or carpet styles. As showing the estimation in which they are held here, my written instructions are to "have a large number of succulent arrangements this season;" and it is added, "the worst weather does not injure them, and they look bright after all else has faded." In planting such beds all other kinds of plants should be scrupulously excluded, succulents only should be used; other genera (to me at least) seem out of place when associated with them. If those who think that succulents alone make but a poor display would but try the following arrangements, their ideas would be changed. For a circular bed have a centre large plant of Agave americana variegata; next a band of Mesembryanthemum conspicuum, in which are placed equidistant four or six plants of Sempervivum phylloides; next a similar band of Kleinia repens, and "dot" plants of Sempervivum arboreum variegatum; then another band of Mesembryanthemum cordifolium, and "dot" plants of Echeveria metallica; the bed may be edged with either Sempervivum calcareum (californicum), S. montanum, or S. arachnoideum, any of which are equally suited for the purpose. Many better arrangements than this even might be given did space permit, but this will suffice to show what a mine of wealth there is available for bedding plants in Agaves, Aloes, Cotyledons, Echeverias, Sedums, Sempervivums, Pachyphytums, Kleinias, &c.

Continue to prepare and harden off plants. Propagation should be ended, though Alternantheras may yet be struck, and will be ready for planting by the first or second week in June if put in as directed a few weeks since. Old roots of Dahlias may now at any time be planted, but young plants and those that have been started in warmth must not be planted till the last week of the month. Stake at the time of planting. Stakes should also be placed to Hollyhocks before they are sufficiently high for the wind to have any power over them. Sweet Peas, Convolvulus major, Tropæolum canariensis, and other climbing annuals should be staked at the time of sowing. Roses have had a hard time of it this spring, and are looking about as wretched as they well can. The bloom will be very late, and, unless we get a favourable change in the weather very soon, poor also. Aphis is already appearing, and a continuation of north-easterly winds will aid its development unless checked by repeated applications of soapy or tobacco water. Stake and tie standards, and water and mulch recently planted ones. Mowing now takes up valuable time, and one is apt to wish the grass would not grow so fast, but this is in vain, as it must be done if the beauty of the garden is to be maintained; therefore see that it is done regularly: once it gets behind it is an eyesore and a trouble for the rest of the season. Roll and hand-weed walks in damp weather; they should never be allowed to get into so bad a condition as that a hoe is required for use on them. *W. Wildsmith, Heckfield.*

KITCHEN GARDEN.

The rapid growth now being made by most of the young crops will necessitate much watchfulness to keep them properly thinned, and save them from the attacks of slugs, with which most gardens are more than usually infested this season. Next to picking them up by hand and destroying them in that way, the best plan is to scatter some powdered lime over the quarters very early in the morning before they leave their feeding ground and ensconce themselves in their hiding-places. If limekiln heating is not a success in other ways, it is at least predicted of it that it will rid us from such pests as the above by dusting their coats or spoiling their vision. Onions, Carrots, and Parsnips will now be sufficiently advanced to have the hoe run between the rows, but only just sufficiently deep to break the surface of the soil to let in the air, and destroy any seed weeds just springing forth. If these are allowed to get a start, it is a difficult matter to eradicate them by the use of the hoe without disturbing the shallow-rooted crop, the progress of which would by that means be considerably retarded, especially if the weather should set in cold and unfavourable. Onions are a crop that is frequently left too long before thinning, and when this is the case they get so firmly rooted that they cannot be drawn without spending some considerable time and labour in getting them out, and even then those left for standing do not escape without injury. It is therefore of the greatest importance to get such crops as these properly thinned out as soon as they are large enough to handle, that the plants intended to stand may at once have entire possession of the ground, and become firmly established. When plants of any kind are left thick in the drills they soon exhaust the limited supply of food within their reach, and consequently get much weakened at starting. Carrots are in such frequent request in the young state that it is always desirable to leave the crop of these sufficiently thick to admit of every alternate one being drawn as required. For summer use, the French Horn is held in the highest esteem, and sowings of that variety should be made from time to time in sufficient quantity to keep up a regular supply. The earliest sown crops of Turnips are very uncertain as regards bulb-forming, many often running to seed. The crop of these should therefore be only sparingly thinned till they show which is likely to stand. Successional sowings of these ought to be made at short intervals, as it is only young, fresh, quick-grown bulbs that are of value for culinary purposes.

The uncertainty which usually attends the first-sown crops of Scarlet Runners and French Beans renders it necessary to make others in quick succession in case those now coming through should be cut off; and the many changes we have already had this season are anything but reassuring as regards the safety of such tender crops as these for at least a week or two to come. It is the practice with ourselves to make sowings of each of the above in boxes of fine leafy soil at the same time we make those in the open, and if these are cut off the plants in the boxes are ready to replace them and so save loss of time. Both kinds transplant well when raised in this way, if sown moderately thin so that their roots do not become matted together; and when so treated they give but little more trouble, and are advanced in earliness at least a week or ten days, which is in most gardens an important consideration. A few plants of any of the approved early kinds, such as the old liver-coloured, or Wilmot's, raised in 32 sized pots under glass, and then planted at the foot of a south wall or other sheltered position as soon as warm settled weather sets in, will afford a supply much earlier than they can be obtained either by sowing or transplanting from boxes; thus relieving houses or pits of a crop that is generally somewhat difficult to keep clear of red-spider, and particularly at this late season of the year, when they are more apt to become dry at the root. The Champion Scarlet Runner is so much superior to the old form that it should be grown in preference, and for a show Bean among dwarf kinds there is nothing to compare with the Canadian Wonder, which is a remarkably handsome prolific variety.

The crops of Peas that are sown from this time to the end of June, or later, should, where sticks can be had to accommodate them, be of the tall kinds, as these endure the dry summer weather, and are more continuous bearing than any of the dwarfs. The British Queen still surpasses any of the recent introductions as a summer and autumn Pea, as its free branching habit and robust growth seem to set mildew at defiance; this and Ne Plus Ultra may be always depended on for furnishing a supply throughout the season, if sown in deep well prepared land and kept liberally supplied with water during dry weather. The best way to treat Peas at this season is to sow the rows 10 feet apart, to admit of Celery being planted between, by which means both crops are greatly benefited. In preparing for sowing the Peas, the ground should be formed into very shallow trenches, to prevent the water when given from running away from their roots. If laid only a couple of inches or so below the general level, it is quite sufficient for the purpose, as the mulching of half rotten manure or something in lieu of it that all summer-bearing Peas should have over their roots will keep the surface of the soil in such a favourable state that there will be no difficulty in getting water to penetrate.

The earliest Celery ought now to be sufficiently large to put out in the trenches, which should be in a nice sheltered situation. Remove the plants carefully, by taking a good large ball with them, that they may not sustain a check in transplanting or they will be liable to bolt. Except in very favoured localities it is full early to venture out the Tomatos; at present, and for the time being, these should be kept under the shelter of glass, but in such a position that they may be exposed whenever the weather is favourable for the purpose of hardening them off. Preparations should at once be made for getting out ridge Cucumbers under handlights. A trench 3 feet wide and 18 inches deep answers better than laying the fermenting material on the surface, as in the former position it retains its heat and moisture much longer, and the plants do better than when elevated on high ridges. Any spent dung-beds that have been used for forcing Asparagus, Potatos, or other crops come in useful for growing the above, or for planting out any forward Custard Marrows to get an early supply, and may therefore with advantage be now utilised for the purpose. Sea-kale that has had protecting material placed over it to get it blanched should now be exposed by removing it, and the surface of the soil top-dressed with some rotten manure, or have a mixture of salt and guano or soot sown over it to induce a strong growth and plenty of fine crowns to supply good heads for cutting next season. Well ply the hoe among growing crops to keep down weeds and encourage free growth, to which end surface stirring of the soil is a powerful stimulus. Earthing-up Peas, Cauliflower, Cabbage, and other growing crops, is simply a mistake, as showers of rain cannot penetrate ridges of that kind, and much moisture and air that the roots would otherwise enjoy is thus shut out from them to their detriment, and yet many still cling to old customs. *J. Sheppard, Wolverstone Park.*

THE

Gardeners' Chronicle.

SATURDAY, MAY 13, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	May 15	{ Sale of Orchids, at Stevens' Rooms. Sale of Plants at the Pine-apple Nursery, by Messrs. Stevens (three days).
TUESDAY,	May 16	{ Royal Aquarium, Westminster, Flower Show (two days).
WEDNESDAY,	May 17	{ Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M.
THURSDAY,	May 18	{ Royal Horticultural Society of Ireland: Second Spring Show.
FRIDAY,	May 19	— Crystal Palace Flower Show (two days).

SOME gardeners, especially at this season of the year, when hardening-off of bedding stuff is in progress, and circumstances of one sort or another have not been propitious, feel some apprehension as to whether they have "stuff enough" to fill their beds; and, indeed, the exigencies of modern flower-beds and parterres of gay foliage plants and precise succulent beds are undoubtedly severe. But there is another class of gardeners and plant-lovers, as large, and probably much larger, who suffer from doubts and difficulties of an opposite description. With these the cry is, not that they have not plants enough, but that they have not space enough. To such we commend the illustration on p. 629. *Suum cuique*, let each have his own; there is plenty of room for all, and plenty of material for all parties. The resources are by no means exhausted for those who love prim geometrical flower-beds, bold foliage plants of the so-called subtropical description, neat succulents, or brilliant leaf plants. So far is it, indeed, from these resources being exhausted that one well-founded complaint against some phases of modern gardening is that gardeners in general are too limited in their choice, too much tied down by convention and fashion, not fertile enough in invention and bold enough in design, not ready enough to avail themselves of the resources at hand, but too prone to repeat what others have done before them. It must be confessed, however, that it is better to do that than to make an ignominous failure.

There is one class of gardening where fashion luckily does not reign supreme—where innovation may be made, and new trials made almost without risk of failure, and with almost a certainty of success; we mean the utilisation of walls, old and new. The only condition of success is the love of plants: given this, even in a minor degree, and success is assured. The illustration at p. 629, which we owe to the pencil of Mr. FITCH, is a case in point. To very many, we may say to most of those who really love plants, such a wall is far more beautiful, unquestionably a far more interesting object, than a flower garden of the modern bedding pattern. There is no reason, however, why we should not have both; the one is suitable for some positions, the other is adapted for others.

On the wall in question, as depicted by Mr. FITCH, may be seen the Wallflower, the Snapdragon, the Toad Flax, the Foxglove, the Polypody, the Hart's Tongue, the Mullein, the Weld, and sundry others. These are not garden plants, some one will say; but will any one deny their beauty and effectiveness? And again, how wide the choice of suitable subjects; setting aside the larger creepers and wall plants, there is a whole host of Sedums, Sepervivums, Saxifrages, Ferns, mosses, Crucifers, Poppies, grasses, Veronicas, Thrifts, Senecios and other Composites—Helianthemums, Iris, Pinks, Cistus, Valerian, and we know not what beside—that might be pressed into the service. See how Nature drapes any old wall with luxurious loveliness, and follow her example. It is easily done, and the successes speedily obliterate the failures. A brick knocked out here, the interstices filled with mould, a suitable plant put in, or a perforated brick made use of, and the thing is done; or let the straight, ungainly top of a wall be broken up by burrs or clinkers, cemented here and there on to the top of the wall, and the spaces filled with soil to a sufficient depth, and, with a little judgment, what may not be grown! Again, let a trough be made on the top of a wall, filled with soil, and succulents and other plants that are relatively indifferent to heat and drought be placed therein, and the result cannot fail to please. Such a plan may well be carried out in suburban gardens, where a screen to shut out the next-door neighbour is often desirable. We have in our mind at the time two gardens, each a gem in its way—one, that of the late Mr. N. B. WARD, where not an inch of space on the ground or on the walls was wasted; the other that of Dr. BENNET, of Mentone, where, under most trying circumstances for plants, in places where little else but a salamander would grow, plants thrive—not grow, but thrive; and these no weeds, but plants of the most interesting character. Where circumstances are more favourable, as to moisture and shade especially, what may not be done by clothing the wall with peat or other suitable soil, keeping it in place by wire netting of wide mesh, and growing Ferns and other plants. There is absolutely no limit to the plant-grower's power, so it be directed by judgment and tact. A great deal may be effected at no more outlay of cost or time than are demanded by the original establishment; but where a little expense and labour can be spared in the supply of water and the exercise of a little thoughtful care, it is perfectly wonderful what may be done with a most unpromising looking brick wall.

THE history of a gigantic and successful commercial undertaking—the difficulties it has had to contend with, and the manner in which they have been surmounted—is always worth writing and still more worth reading, if it be well written. No apology, therefore, is needed for bringing under the notice of our readers a very interesting little volume just issued by Mr. G. F. WILSON,* better known to horticulturists as a devotee of Orchard-houses and Lily gardens, and as a zealous Fellow of the Royal Horticultural Society than as a manufacturer. Formerly the moving spirit in the manufacturing department in the great firm of Price's Candle Company, and one who by his researches and experiments revolutionised a great branch of trade and brought cheap and good light to the poor man's cottage and the rich man's mansion, Mr. WILSON has a story to tell, and, as he tells it, it is full of interest and suggestiveness. We leave our readers to glean for themselves the full history of the utilisation of Palm oil—one great means of suppressing the traffic in slaves—the development of the manufacture not only of candles, but of cloth oil and spindle oil, of glycerine and other bye-products. We only regret that the history of "Gishurst Compound" has not been added to the other results obtained in the laboratory of Price's Patent Candle Company.

One special point which is insisted on again and again in the *brochure* before us we commend especially to the notice of our readers, and that is, the value of scientific or theoretical knowledge (in this case chemical) in addition to practical. "Science, once introduced," says Mr. WILSON, "has raised candle-making from a simple, clumsy, offensive mechanical trade, into a first-class chemical manufacture—one offering the widest field for applications of the highest chemistry." Altogether, the story is simply and effectively told. Some needless repetitions occur here and there; but, taken as a whole, we know of no work of the kind more interesting or more suggestive to all who have to work for their living by their head or hands, or both.

* *The Old Days of Price's Patent Candle Company* Gilbert, Gracechurch Street.

—— COMPLAINTS are often made, and with too much cause, against the condition of many of the BOTHIES AND LODGES in our large gardening establishments. It is not too much to state that many of them are maintained in defiance of all sanitary arrangements conducive to the health of the young men. On the other hand, it is satisfactory to note that decided improvements are taking place in this direction. At Castle Ashby the Marquis of NORTHAMPTON has just erected a line of buildings, commodious and substantial, with living-rooms and offices below, and sleeping apartments above. These are dry, roomy, and well-ventilated; each assistant will have a room to himself, and the rooms as well as the corridors without, leading to them, are mostly carpeted with cocoa-nut matting. The kitchen and scullery arrangements are all that could be desired, and altogether there is a decided air of coziness and comfort about the new buildings. Mr. GEORGE BEECH, the head gardener at Castle Ashby, has endeavoured in every way, during the erection of these new buildings, to make the comfort of the young men under his charge the first consideration.

—— The BLOOM OF THE CHERRY TREES has been generally very dense this season, and especially is this true of the fine double white variety. Large specimens of it are literally clothed with fine full double flowers. The wonder is it is not more generally planted, for it is a grand spring-blooming tree, never failing to yield a large supply of flowers.

—— The coarse SILVER SAND obtained from Bedfordshire appears to find as much or more favour with horticulturists than the finer material obtained from Surrey and elsewhere. We have just received a sample from Bedfordshire, from Mr. JAMES COLLIER, of the Brentford Station, South-Western Railway, which seems to be admirably adapted for potting purposes, keeping the soil open, and securing a ready passage of the water through it. It is said to be obtained from a new district.

—— Amongst the striking but unfamiliar plants shown at the Brussels Exhibition, one of the most remarkable was the EUPHORBIA ABYSSINICA, from the collection of M. DEMOULIN, President of the Royal Horticultural Society of Mons. This is a tree growing 30 to 40 feet high, with upright branches, 4 to 6 inches in diameter, and deeply winged, the wings crossed at intervals by elevated lines indicating the course of stout internal veins. The plants exhibited were fully 10 feet high, and near the top were furnished with a candelabrum-like whorl of branches, forming a corymbose head. In this case the stems were five-winged. Its large size and height, and the peculiar habit made it a very striking object.

—— The AMARYLLIS PIRLOTI shown at Brussels by MM. JACOB-MAKOY ET CIE., and marked in the catalogue as being raised from seed (*semis* 1876), has broadish blunt-ended leaves, marked with a stripe of white down the centre, and rose-coloured veiny flowers. It comes very near to, if it be indeed at all distinct from, the old Amaryllis reticulata striatifolia, figured in the *Botanical Magazine* so long since as 1819.

—— FRITILLARIA RECURVA, Benth., with flowers worthy of being described as scarlet, is in flower at Kew, and, it is needless to say, is a striking novelty. It grows to a height of from 1 to 2 feet, though the present example is less than 6 inches, from the fact of the bulbs having been somewhat weak, and without sufficient time to get established. The leaves are very narrow, and of a greyish green tint. The flowers number from three to eight, are narrowly campanulate, and from an inch to an inch and a half in length, but in this case they are smaller. No other known species can approach this in colour. On first expansion it appears most brilliant, being afterwards apparently toned down with an increase of yellow, which would seem the ground colour. The tessellation is somewhat obscure, though evident on

FIG. 115.—HOW TO CLOTHE A WALL.

close examination. On the inside the perianth is distinctly yellow, and is covered with numerous, usually linear scarlet spots. It is a native of California, and will doubtless prove one of the most interesting bulbs recently introduced from that or any other country.

—— Complaints are sometimes made by cultivators of NARCISSUS BULBOCODIUM (the Hoop Petticoat) that they experience great difficulty in keeping their bulbs through the winter when left in the ground. It is perhaps not difficult to account for this. Naturally an early flowering type, it gets excited to growth as early as Christmas, and then it is cut back by frost, and the bulbs are injured thereby, often beyond recovery. Mr. PETER BARR, who has paid a great deal of attention to the requirements of this charming group, strongly recommends that the bulbs should be lifted about November and kept above-ground for the space of two months or so, so as to send them completely to rest. Either the clumps may be lifted entire, and put away in a dry place, or the individual roots may have the soil shaken from them, and then be stored away for a time in paper bags till planted out in the middle or end of February.

—— The miniature Forget-me-not, MYOSOTIS RUPICOLA, might almost claim to be regarded as the gem of the whole family. As seen in flower just now each plant consists of a small tuft about 3 inches in height, and the branches are covered with bunches of bloom, in colour of the brightest blue. The individual blossoms are not more than one half the size of those of M. dissitiflora, but are of a much deeper hue. In habit the plant is herbaceous, losing its foliage in the winter, but breaking up again early in the spring. To produce a pleasing effect in the house it should be grown in large pans, or would be very beautiful if grown in patches amidst other alpines in the open air.

—— At the recent exhibition at Brussels a silver-gilt medal was awarded as a second prize (the first going to Mr. WILLIAMS' Cycas intermedia), in the class for one new Cycad not in commerce, to ENCEPHALARTOS HILDEBRANDI, exhibited by the Flora Society of Cologne. It is a fine-looking plant, and appears to be distinct. The trunk is globose, and the leaves are numerous, 3 feet long, leafy to the base; the pinnæ are of a bright glossy green, 3 to 4 inches long, and spiny-toothed at the margin, the teeth being set at distant and tolerably regular intervals of about an inch.

—— Of the many beautiful PLANTS IN FLOWER ON THE ROCKWORK AT KEW, Arnebia echioides is by far the rarest. It is allied to Lithospermum, of which it has much the habit, and the bright yellow flowers are perhaps the prettiest of the colour in the order to which it belongs. There are sometimes five purple spots on the corolla, alternating with the lobes, but these are absent in some flowers while present in others on the same plant. It forms a neat tuft, and the flower-stems grow to a height of from 6 inches to

perhaps a foot. It is well figured in the *Botanical Magazine* of 1848. Few alpine plants have been so long in cultivation as this, while represented by so few individuals. It was introduced to Kew no less than twenty-eight years ago, and for many years, we have been told, was possessed only by Mr. FRASER, of the Comely Bank Nurseries, Edinburgh, who had one, and latterly two plants, the first of which, and parent of the other, was obtained from Kew. These plants seem never to have produced seeds, and afforded scarcely any other means of increase. At the present time in this country it exists in perhaps two or three collections, and these plants, we believe, are entirely due to the energy of M. MAX LEICHTLIN, who, anxious to possess so great a rarity, made application to all the Botanic Gardens, and at last succeeded in getting it from one of those on the Continent, and, in addition, appears to have been successful in its propagation. It is a native of the Caucasian alps and of Armenia, and seems to do well planted out on the rockwork. Ranunculus amplexicaulis is beautifully in flower, and, from its chaste appearance, might well be called the Queen of Buttercups. The leaves are glaucous and undivided, and the flowers pure white. Arenaria balearica is covering the stones in some places with a moss-like growth of green, and is thickly dotted with its pretty white flowers. It forms a very elegant clothing for bare stonework, where there is a sufficient supply of moisture. A form of this, still more delicate, is universally known as A. multicaulis, but the name is not a good one, A. multicaulis, L., being a variety or synonym of A. ciliata, L., a plant found in the mountains of Sligo, though not native of England. Houstonia cœrulea, a gem of the first water, is in fine condition, though many complain of great difficulty in its culture. At Kew it seems to flourish, and its blue star-like flowers may be seen for many months in the year. Trillium grandiflorum is very effective, and of white-flowered plants there is not a finer in bloom. Androsace lactiflora is in great beauty; a multitude of white flowers are borne on slender stalks in umbels, and from the ease with which it grows from seeds many might be placed together for better effect. Among other good plants in flower are Bellis rotundifolia var. cœrulescens (the Blue Daisy of Morocco), Dodecatheon integrifolium, Primula cortusoides amœna, P. scotica, Hutchinsia alpina, and Romanzoffia sitchensis.

—— One of the best hardy plants for forcing is KALMIA LATIFOLIA. Plants should be selected well filled with buds, and potted up in the ordinary way, and brought on in heat. Not only do the plants flower with great freedom, but they remain for a long time in bloom, and the cultivator can "cut-and-come-again" in a liberal manner. When associated with Rhododendrons, American Azaleas, and other plants in a warm greenhouse, the Kalmia has a very pleasing effect.

—— We learn from M. BERGMAN, the head gardener to Baron J. DE ROTHSCHILD, at Ferrières, that the CHARLOTTE ROTHSCHILD PINE-APPLE, about the origin of which much uncertainty has prevailed in this country, was imported in a batch of plants of the Smooth-leaved Cayenne, and came in this way direct to Ferrières, whence it has been distributed.

—— The new FOURCROYA ROEZLII ATROPURPUREA, one of the novelties of 1876 shown at Brussels by M. L. DE SMET, of Ghent, has been obtained from New Grenada. As shown, it was rather a dull-looking object, the leaves being upwards of a foot long, rather thin in texture, wavy at the edge, and of a pale bronzy purplish tint, but it may have been suffering from the effects of long travel, and thus have been deficient in colouring. Much more effective was the bright green golden-edged F. Lindeni, shown in M. LINDEN'S group.

—— The rare African genus HOODIA, as puzzling as it is scarce, has lately formed the subject of investigation at the hands of Mr. W. T. THISELTON DYER. The result of his researches were laid before the last meeting of the Linnean Society (May 4). In the peculiarities of structure and recognition of parts of the floral envelope he arrives at conclusions somewhat different from those of Mr. BENTHAM, who in former years had but a scanty opportunity of acquainting himself thereon. Mr. DYER recognises and describes the following species:—Hoodia Gordoni, H. Currori, and H. Barklyi, and he considers these bear alliance to the genus Decabelone.

—— Mr. MAULE, of the Bristol Nurseries, has been good enough to send us for determination specimens of two JAPANESE BIRCHES, which from their large (male) catkins and handsome appearance are worthy attention. One, an upright grower, with the young shoots brownish and dotted with resinous dots, with glabrous ovate leaves gradually tapering to a long point or acumen, with rather closely set prominent nerves and irregularly serrated leaves, and with male catkins 2½ inches long, is, we believe, the B. utilis of DON, or rather that form of it which REGEL calls B. Bhojpattra, Wall., var. subcordata. We prefer to use the name utilis because it is the earlier name, and one not so uncouth to English ears. For garden purposes the varietal name, B. subcordata, would perhaps be the most convenient. The second is a weeping form, with the young shoots brownish, sprinkled with resinous dots. The young leaves are obliquely ovate cordate, rather shortly acuminate, serrate, thinly beset with pale appressed hairs, especially along the nerves, and covered on the lower surface with small circular glandular scales. The male catkins are nearly 3 inches long. This second form we refer to B. ulmifolia, var. costata, which might for garden purposes be called simply B. costata. We append in a foot note* certain references to authors who have described the plants in question.

—— The *Australasian* of March 4 contains a detailed and very interesting account of Messrs. T. LANG & CO.'s nurseries at Ballarat, which not only shows the great progress that has been made during past years, but augurs well for the future progress of horticulture in Australia.

—— A somewhat remarkable case of fasciated inflorescence occurring in FOURCROYA CUBENSIS, Haw., was brought before the notice of the Linnean Society by Mr. H. TRIMEN, who exhibited a photograph of the same. The specimen came under the immediate notice of Mr. A. ERNST, of Caracas, Venezuela, whose record states that it measured 6½ feet high and 4 feet wide.

—— Cryptogamic botanists will be glad to learn that the Linnean Society, at their last meeting (May 4), paid a tribute of respect to their particular branch of study by the election as Foreign Member of a distinguished Scandinavian *savan*. This honorary distinction was deservedly conferred on Professor WILLIAM NYLANDER, of Helsingfors, author of *Synopsis Methodica Lichenum*, and numerous other valuable memoirs on Lichens, &c., published in various scientific journals.

—— Messrs. GEORGE JACKMAN & SON'S CLEMATIS EXHIBITION, which is held (as last year) in the long corridor in the Botanic Gardens, Regent's Park, is now at its best, and exceedingly well worthy of a visit. The plants are a little later than last year, but we think they are quite equal in quality, if not better; and certainly there is a greater number of varieties now on view than there was then. Amongst the newer flowers we notice Prince Alfred of Edinburgh, a well-formed flower of the patens type, pale mauve in colour, with a distinct lavender bar; Edith Jackman, also of the patens type, a fine smooth eight-sepaled flower, white, with a faint rose bar; Maiden's Blush, very fine, a mauve shaded French-white flower of the patens type; Blue Gem, a very showy flower, measuring 7 inches across, of the lanuginosa type, and of a dark shade of Cambridge-blue in colour; Countess of Egmont, a delicate shade of mauve or French-white, with a white bar, an eight-sepaled flower, also of the early lanuginosa type; and Precision, bright mauve, with a broad white bar, belonging to the patens section. Of the older and better known varieties the following are admirably represented in well-grown and profusely flowered specimens:—Vesta, the best white; The Queen, Lady Londesborough, Stella, Mrs. S. C. Baker, Fair Rosamond, Albert Victor, Aureliana, The Gem, Lord Derby, Duke of Norfolk, Countess of Lovelace, a splendid double blue; Lord Mayo, and Sir Garnet Wolseley.

—— We beg to call our readers' attention to the sale of the entire stock of the late Mr. RICHARD HEADLY'S flowers. The sale takes place on Tuesday, May 23, in consequence of Mr. HEADLY'S death. Mr. HEADLY was well known as a most successful exhibitor, and amongst the Tulips will be found the celebrated John Linton, Sarah Headly, John Thornley, &c. Besides the named varieties there will be sold a large collection of most valuable breeders. This sale affords a good opportunity for possessing a stock of the very finest Tulips and Ranunculuses grown. Stapleford is easily reached, as it is only about five miles from Cambridge, and within five minutes' walk of the Shelford station on the Great Eastern Railway.

—— A most interesting feature at Castle Ashby in the early spring time is the large patches of the common WOOD ANEMONE—A. nemorosa, and its pink variety, which is evidently a sport that comes more profusely in some spots than in others. Mr. BEECH, the gardener at Castle Ashby, has planted these two in many spots hitherto untenanted by them, at the same time never forgetting so to plant them that they do not lose their half-wild appearance and seem as if they had grown up spontaneously. Here and there the double white variety may be met with, growing also in patches, and every year becoming more widely diffused. The pretty lilac-blue A. apennina, and the yellow A. ranunculoides, are in their company also, and being in flower at the same time they afford a charming variation. They may be said to repose in warm nooks in grassy glades, and in open spaces under trees, and there they remain undisturbed, literally fed year after year by the falling leaves in autumn, which decay on the surface, and form a rich, valuable mould. The delicate beauty of the Wood Anemone meets one almost on every hand, with common Primroses of various hues of colour, bold, rich-tinted Oxlips, and the common single Daffodil in plenty. Some of the Fumitories, Cyclamen hederæfolium, Leucojum vernum, Crown Imperials, Martagon Lilies, Hemerocallis flava, Snowdrops, various Narcissi, and others peep forth on either side of the pleasant woodland walks, lit up with gleams of sunshine, so that many a spot is aglow with vernal beauty. The Winter Aconite abounds at Castle Ashby, and is spreading itself in all directions; some large spots are completely carpeted with it. On grassy banks that slope down to the ornamental water, where the spaces are bare of undergrowth, Mr. BEECH has formed beds with lines of stones placed across them, to prevent the soil being carried down to the lake when a heavy rain causes a rush of water to the brink. Here early-flowering bulbous plants, Forget-me-Nots, Primroses, and Polyanthus, &c., are planted, not with any set arrangement, but just as they might be expected to grow in woods; while round the trunks of large trees are bright patches of spring flowers, carefully planted in good soil in the first instance, and then suffered to spread themselves at will; on the banks of the lake are patches of Iris, Lilies, &c., alternated with flowering shrubs; and yet all so accomplished as that the artificial arrangement has become blended in a pleasant natural appearance. This system of semi-wild gardening is well worthy the attention of all who have scope for its application.

—— Mr. J. CARR, who for many years was gardener to the late P. L. HINDS, Esq., at Byfleet Lodge, Weybridge, has been appointed gardener to Colonel Sir F. FITZWYGRAM, Bart., Leigh Park, Havant.

—— CHOISYA TERNATA is in flower in the Temperate-house at Kew. It is a very handsome rutaceous plant, with trifoliate leaves and pure white flowers, which recently in a contemporary have been suggested as a substitute for Orange blossoms. It is also said to be quite hardy in sheltered situations, and that the flowers on the Continent are largely used in a cut state. It is a native of Mexico, and does not seem to be very common in this country. The smell when bruised is not very agreeable. An example trained against a south wall may be seen in the nurseries of Messrs. E. G. HENDERSON & SON, of St. John's Wood.

* *B. utilis*, Don, Prod. Nep. 58 (1825); Koch, Dendrologie, ii. 641; B. Bhojpattra, Wall. Pl. As. Rar. ii. 7 (1832); Lindl. Bot. Reg. 1840, 73; Regel, in D. C. Prodr. xvi., part ii., p. 177; var. subcordata ad Regel loc. cit. propos; B. Jacquemontii, Spach, ex Regel.

B. ulmifolia, Sieb. et Zucc. (1846), ex Regel in D. C. Prodr. xvi., part ii., p. 176; Koch, Dendrol. ii. 642; var. β. costata = B. costata, Trautvetter (1859), in Maxim. Primit. Amur., 253; B. Ermanni, β. costata, Regel, Mon., p. 65, t. 13, fig. 1–6.

BOTANY IN SCOTLAND.

THE summer session of the University of Edinburgh was opened on Monday the 1st inst., and the first class to meet was that of botany, in the lecture-hall at the Royal Botanic Garden. There were upwards of 300 students present, and on Professor Balfour entering the hall, accompanied by his assistant, Mr. Sadler, and Dr. Isaac Bayley Balfour, he was received with great applause. The learned Professor commenced:—To-day I begin my thirty-first course of botany in this University. Previously to occupying this chair I had delivered two courses of lectures on botany in the extra-academical school (as a private lecturer), and eight courses (winter and summer) in the University of Glasgow. During these forty courses I have enrolled in my books 7115 names. Having thus had considerable experience in the teaching of botany and opportunities of observing the progress of the science in Scotland, I propose to-day in the first place to trace briefly the advance made from my student days up to the present epoch. I shall then explain the object of the science and its bearings on various departments of study, and more particularly on medicine. When I explain to you the garden arrangements, I shall allude more especially to the early history of our botanic garden, and the changes which it has undergone since its formation.

My botanical career as a student commenced when the Linnean system was in the ascendant, and the natural system of Jussieu was only beginning to take its place in our school. The demonstration of the conspicuous organs of plants, and the determination of their names by an artificial method, was the sum and substance of the lectures. Sir James Edward Smith's *Introduction to Botany*, and his *Compendium of British Botany*, written in Latin, were the text-books we used. The microscopical structure of plants, their morphology and physiology, were not subjects of study, and the laws of plant distribution over the globe during recent and fossil epochs were not attended to. Botany was studied chiefly in connection with medicine, and little encouragement was given for the prosecution of it as a separate science. Still, there were many zealous students of science in Edinburgh, and good work was done in the examination of the flora of Scotland. Men such as Don, Walker, Brown, Lightfoot, Neill, and others, have led the way, and they had some enthusiastic followers in this city. So far back as 1823, a society called the Plinian Society was instituted in Edinburgh by University students for the purpose of encouraging the study of natural history. When I joined it in 1827 I came in contact with many keen naturalists, including Hardie and Malcolmson, who both became famous as Indian geologists; Dr. John Coldstream, a keen zoologist; Charles Darwin, whose first paper was entitled "On the Ova of the Flustra," and exhibited his early habits of minute investigation; Hugh Falconer, afterwards Superintendent of the Saharunpore and Calcutta Gardens, and known especially for his palæontological researches in the Servalik Hills, and whose name is associated with a valuable palæontological fellowship in this University, first held by Dr. Stirling, and now by Mr. Gibson; I have also to add the name of William Baird, who afterwards superintended the conchological collections in the British Museum, also his two brothers, John and Andrew; Torrie, nephew of Professor Jameson, a keen naturalist; Armour, from Canada; Brown, afterwards Commissioner in Lunacy, and others.

The meetings of the Society took place weekly from November to July, and during the summer months excursions were made in the neighbourhood of Edinburgh. I believe that this society was one of the earliest Natural History Field Clubs in Scotland.

The Wernerian Society, under the auspices of Professor Jameson, had been founded about the year 1818, and had done good work among the senior cultivators of science. The Transactions of that society show the important service which it rendered.

The Plinian Society met in a room in the University, close to where the agricultural class-room now is, and it was a most important adjunct to our school. It led many of us to enter keenly into the prosecution of science before entering on our medical studies. Hence I attended the classes of botany and natural history before entering my name in the roll of medical students.

I have never had occasion to regret that after spending four years in the curriculum of arts, I completed other five years of study before taking the degree of M.D.

In those days there were no science degrees, and few situations were open for students of science. Our doctors of medicine then were the chief promoters of scientific researches, and many of them did so by accompanying expeditions to various parts of the world, and by settling in foreign countries. For information as to the floras of India and Australia we are almost wholly indebted to medical men.

The prosecution of botany in this school was much encouraged by the excursions which were made to various parts of the country. My predecessor, Dr. Graham, may be said to have led the way in this matter. He took occasional walks with his pupils during the summer, and he visited during the autumn various parts of Britain with parties varying from twelve to twenty, or more. The first long trip of this kind which he took was to Sutherlandshire, when I accompanied him along with three other students. The country which we visited was at that time in a very uncultivated state; Lord Reay's part of the country had been almost totally neglected, and the greater portion of it had been recently purchased by the Duke of Sutherland. There were no roads through it, and almost all our journey was performed by walking—our baggage being carried on horses. There were no inns in the wilder parts, and we had to take up our quarters in shielings full of peat-reek, sleeping in our plaids on the clay floors; and in some instances the only procurable food was peas-meal bannocks and Potatos. The place where we enjoyed the hospitality of the inhabitants was Durness, where Mrs. Scobie and her family entertained us most kindly. During this trip I had the pleasure of meeting Sedgwick and Murchison, who were harmoniously working together at the geology of that part of Scotland. This excursion gave me an excellent lesson in botanical journeying, which I did not forget in after life. I was always a good walker and hill-climber, and I could endure a good deal of fatigue, even with a moderate allowance of food. No one set a better example to us, in these respects, than Professor Graham; and I cannot sufficiently express my obligation to him for his lessons in practical botany in the wild districts of Scotland.

Of late years these excursions have multiplied and extended, so that all parts of Scotland have been visited by Professor and pupils, as well as the northern part of England and the greater part of Ireland. These excursions do much to promote botanical zeal, to encourage students in the practical prosecution of botany, and to cement friendships of a lasting kind between the teacher and his pupils. They have added many plants to the flora of Scotland, and they are still continuing to do so, as shown by the results of a trip to Braemar in August, 1874, when two species new to Britain were discovered by my assistant, Mr. Sadler.

Even during practice in Edinburgh, as assistant to Sir George Ballingall, and amid active hospital and dispensary duties, I found opportunities of continuing my botanical studies; and, with the aid of Edward Forbes and other kindred spirits, I was instrumental in founding our Botanical Society in 1836. The love of botany once implanted is not easily eradicated; even though it may be dormant for a while, when other duties occupy the attention, it may still manifest itself in later years, and of this we have an excellent example in our senior Professor, Sir Robert Christison, Bart. (whom I am proud to acknowledge as my preceptor), who now derives enjoyment from the prosecution of botanical studies, and who occupies the position of President of our Botanical Society.

Since I began my duties as Professor here, the science of botany has made great and rapid advances in all its departments, but more especially in that of physiology. The use of the microscope in the examination of the structures and functions of plants, especially those of the lowest class; and the application of chemistry in the elucidation of the changes which take place in the cells and vessels, have tended in no small degree to this advancement. Histological and laboratory work are becoming every day more and more important in all departments of natural science. The Germans have in this, but only in this, far excelled the naturalists of Britain, and in the department of botany the advance which has been made is well seen in the work of Professor Sachs, a translation of which by Mr. Bennett, assisted by Mr. Dyer, has recently appeared. Much, however, yet remains to be done, and there is a fine field open for rising naturalists.

The learned Professor went on to say that, between the simplest plants and the simplest animals there was a bond so close that none could sever it; none could tell where link joined link; and though when speaking of what they were pleased to call the higher animals and the higher plants it was possible to lay stress on certain prominent distinctions between them, yet at the same time the fact of their reciprocal dependence was also necessarily brought into prominent relief. The very existence of the one was the consequence of the other, and, as in the physical world, they had heat now emitting light, now generating electricity, and now magnetism, one force evolving other forces, and these reverting to their original condition, so they had a similar transition from inert matter to living vegetable, and through these to living animal organisms, both in their decay restoring to earth and air what they had taken from them in life. It was not only the gases and the solid and fluid matter of the globe which thus underwent a constant series of changes, but heat, light, and electricity were also transformed in various ways by the agency of living beings so as to build up their tissues. A tree by its organic force under the influence of the sunshine formed timber which, when burned, gave out the light and heat which had been expended in its formation. Nothing in Nature was lost. The heat and light of the sun were necessary for the growth of vegetation, and these forces were combined with the tissues of the plant and became part of its substance. The special attribute of the vegetable germ was its power of utilising, after its own particular fashion, the heat and light which it received, and of applying them as constructive powers to the building up of its fabric after its characteristic type. Plants, again, restored to the inorganic world the materials and the forces at the expense of which their fabric was formed. Sometimes a restoration took place in the form of motion, as seen in the zoospores and other moving germs of algæ.

Botany was one of the biological sciences; and the Professor pointed to the connection between the microscopic spores of fungi and such diseases as diphtheria. The Professor next dwelt on the importance of a knowledge of botany to the geologist in determining the various stratified rocks of the globe, and to the zoologist in the study of the lowest forms of life which had the organic forces of plants with the locomotion of animals. Researches into the embryogenetic process in plants had led to important discoveries relative to animal reproduction. In conclusion, the Professor showed the bearing of the study of botany on the study of medicine, and pointed to the analogies which existed between the members of the animal and the vegetable kingdoms.

The class-room was decorated with a large series of drawings and living plants.

HOW TO DRY PLANTS.

THE materials required are common cartridge paper, thick white blotting paper, cotton wadding and mill-board, all cut to the same size.

The plants should be gathered in dry weather, and soon after the flowers open, when their colours are brightest.

Succulent plants (such as Daffodil, Orchis or Stonecrop), should be put into scalding water, with the exception of the flowers, for a minute or two, then laid on a cloth to dry.

Arrange the specimens and papers in the following order:—Millboard, cartridge paper, wadding (split open, and the glazed side placed next to the cartridge paper), blotting paper; the specimens, having small pieces of wadding placed within and around the flowers to draw off all the moisture as quickly as possible, blotting paper, wadding as before, cartridge paper, mill-board.

When the specimens, &c., are thus arranged, heavy weights should be put on them: about 30 lb. the first day, 60 lb. afterwards. Remove them from under pressure, in a day or two; carefully take away all the papers, &c., except the blotting papers between which the specimens are placed: put these in a warm air to dry, whilst the removed papers, &c., are dried in the sun, or by the fire. When dry (but not warm) place them in the same order as before; put all under the heavier pressure for a few days, when (if not succulent) they will be dry.

Flowers of different colours require different treatment to preserve their colours.

Blue flowers must be dried with heat, either under a case of hot sand before a fire, with a hot iron, or in a cool oven.

Red flowers are injured by heat: they require to be washed with muriatic acid, diluted in spirits of wine, to fix the colour. One part of acid to three parts of spirit is about the proportion. The best brush with which to apply this mixture is the head of a Thistle when in seed, as the acid destroys a hair-pencil, and injures whatever it touches (except glass or china); therefore it should be used with great care.

Many yellow flowers turn green even after they have remained yellow some weeks; they must therefore be dried repeatedly before the fire, and again after they are mounted on paper, and kept in a dry place.

Purple flowers require as much care, or they soon turn a light brown.

White flowers will turn brown if handled or bruised before they are dried.

Daisies, Pansies, and some other flowers, must not be removed from under pressure for two or three days, or the petals will curl up.

As all dried plants (Ferns excepted) are liable to be infested by minute insects, a small quantity of the poison, corrosive sublimate, dissolved in spirits of wine, should be added to the paste, which it will also preserve from mould.

The best cement for fixing the specimens on to the paper or cardboard is gum-paste. It is composed of thick gum-water, and flour mixed in warm water, by adding the two together, warm, and of a consistency that will run off the hair pencil. *Communicated by Rev. George Henslow.*

STRAWBERRIES FROM MARCH TO NOVEMBER.

We gardeners are credited with being the greatest schemers in existence, and I believe there is some truth in the statement; we have many things to do sometimes out of limited means, and this can only be achieved by keen observation and forethought. It is truly said that no other branch of industry has made such rapid progressive strides during the last ten years as gardening, both practical and scientific, and let it be hoped that the sun of prosperity will shine upon us with even greater vigour in the future than it has ever done in the past. At no time within my memory has there been such a demand for choice fruits and flowers out of season as there is at the present moment; flower shows, both provincial and metropolitan, seem to be on the wane, but there yet remains for those who have West End families to supply, a continuous show of four months' duration, viz, from March to July, and the gardener who can manage to supply the continuous stream, humoured by the ebb and flow of fashion, for over four months will, I should think, be satisfied with "showing" that season. I am no enemy to flower shows. On the contrary, I believe that the cherished competitive spirit existing amongst gardeners has made horticulture what it is; I only wish that the ominous clouds which seem to overhang our own horticultural horizon could be replaced by a season of brilliant sunshine. I merely point to the fact that, irrespective of flower shows, there will always be credit awarded to creditable productions so long as the *elite* of society are the practical judges. Pines and Grapes are to be had all the year round, Melons and Peaches in a general way about six months out of the twelve; why not prolong the Strawberry season? I am awkwardly situated with regard to Strawberry growing, as one or two of my predecessors have left an indelible mark in monster Strawberry culture which I am not likely to obliterate in a hurry.

Now it appears to me that if size is to be the criterion by which we are to be judged, some of us ought to be handicapped, for has it not been proved that varieties which do well in one locality will not succeed in another? Now where are we to draw the line? There is a climatic influence at work—call it degeneracy who will—which prevents the culture of some varieties in certain localities at all. To be plain, I will give one or two simple illustrations. For early work I grow Vicomtesse Héricart de Thury, and, as a sure cropper, a free forcer—any treatment almost—combined with all the excellencies that can constitute a really delicious Strawberry, it cannot be surpassed; but it will not attain the size of Sir Charles Napier or President, which I see by the *Gardeners' Chronicle* was shown in London some time ago. With me the two latter varieties never do much when forced early, but always do well when coming in about the first week of May; so that any one showing a dish of fruit of the variety that we force early here would not stand the shadow of a chance in competition with the larger growing varieties. I grow a Strawberry here the name of which I am not certain of; I am told by one who pretends to be an authority that the variety is "Underhill's Sir Harry:" he the variety what it may it is a most certain cropper, grows to an enormous size, but the flavour is coarse. I sent a fine dish to the Horticultural Society's Gardens, South Kensington, two years ago, but, thanks to the railway company, they never got there—much to my disappointment, as I was anxious to get the proper name.

Up to the present time our Strawberries have been quite a success, and we are about to prolong the Strawberry season till far on in the autumn. How are we to do it? I am going to try various plans, and shall report progress hereafter. A batch of the early forced plants planted out about this time last year yielded abundantly all through August and part of September. If a piece of rich south border can be spared now and the early forced plants planted out, success is a certainty. When the plants are turned out of the pots the roots should be loosened with a sharp pointed stick and the soil round the ball be made quite firm, otherwise the water will pass through the loose soil and leave the ball quite dry. Strawberries treated thus will yield fruit up to the middle of September, after which time Strawberries out-of-doors are worthless; a succession must, therefore, be looked to from indoors, but there will be a little more trouble involved in producing them. The second batch of forced plants should now be taken behind a north wall, there to have a rest until such time as indications of new growth begin to make an appearance; it will then be best to turn the plants out of their pots, which should be washed and drained afresh; shake as much of the old soil from the plants as possible, and re-pot as before. A cool span-roof pit about 18 inches high or cold frames will then need to be in readiness for their reception. The after-treatment will, of course, need to be humoured according to the weather and other surrounding circumstances.

I have more pots than I can manage to get through before I expect to gather fruit out-of-doors, and I am going to nip off their flower-spikes, give them a fresh pot, and try to fruit them just as the outside gatherings are over.

I am troubled with a light soil here, and I find it a capital plan to use marl which has been thrown up to the influence of a winter's frost at least, burnt clay and wood ashes at potting time; and our plants seem to enjoy their composition immensely. *W. Hinds, Otterspool, Liverpool.*

REPORT ON PLANTS GROWN FOR TRIAL AT CHISWICK IN 1875.

By THOMAS MOORE, F.L.S., Floral Director.

(*Concluded from p.* 561.)

FUCHSIAS.

These were grown under glass, and consisted of young plants shifted on into moderate-sized but rather small pots. They were examined just when they had reached their best condition as to bloom. The plants were contributed by Messrs. Veitch & Sons, Messrs. F. & A. Smith, Messrs. Downie & Co., Mr. G. Smith, Mr. Knight, Messrs. E. G. Henderson, Mr. Bull, and Mr. Kinghorn.

First class Certificates.

§ 1. Whitish tube and sepals; red or purple corolla.

1. *Annie* (Veitch & Sons).—Of rather bold growth, but dwarf in habit. Flowers with short blush tube; reflexed flesh-coloured sepals; and large, open, carmine-red corolla. A free-flowering sort.

2. *Brilliantissima* (E. G. Henderson & Son.)—An erect-habited rather vigorous-growing variety. Flowers with a greenish white tube, reflexed sepals, and a dark crimson corolla: very fine in colour, but rather small. Certificated on account of the habit of the plant, which was excellent. It was in the way of the variety called Lustre, but superior to it.

3. *Josephine* (E. G. Henderson & Son).—A variety of dwarf and stocky but rather vigorous growth. Flowers with long blush tube, short reflexed sepals, and bright rosy pink corolla.

4. *Marginata.*—Of free, bushy habit, and a free bloomer. Flowers with short, blush-white tube and reflexed sepals, and a rosy tinted corolla with crimson margin.

5. *Schiller.*—A finely-shaped, free-growing, bushy plant, of drooping habit. Flowers with a blush tube and spreading sepals, and a purplish corolla. The flowers are larger and better than those of Rose of Castile, which they resemble in colour. The habit is excellent.

6. *Starlight* (Veitch & Sons).—A free-growing and free-blooming variety, of excellent habit. Flowers large, with long white tube and sepals, and long bright rosy lake corolla. One of the very best of the pale-coloured series.

7. *Water Nymph* (E. G. Henderson & Son).—A dwarf, free-growing, bushy-habited variety. Flowers with blush tube and straight sepals, and a crimson corolla. A very desirable variety.

§ 2. Scarlet tube and white corolla.

8. *Alexandrina* (Veitch & Sons).—A slender, drooping, free-growing, and exceedingly bright and attractive sort. Flowers with short bright red tube, and reflexed sepals, and a fine white corolla.

9. *Mrs. E. Bennett.*—A free-blooming, free-growing, erect-habited variety. Flowers with very short red tube, long spreading sepals, and a very large spreading white corolla. Very distinct and fine.

The certificates already awarded to the following varieties in this section were confirmed—namely, to Conspicua, Puritani, and Pursuit (singles), and to Enchantress (double).

§ 3. Scarlet tube and purple corolla.

10. *Empress of Germany.*—A variety of dwarf bushy habit, dense, free-flowering, and ornamental. Flowers with a short tube and reflexed sepals of a coral-red, and a large, spreading, purple corolla.

11. *First of the Day* (E. G. Henderson & Son).—A variety of a dense, bushy, free-flowering habit. Flowers with a short coral-red tube, small reflexed sepals, and a large bold purple corolla.

12. *Inimitable.*—A variety of dwarf and free habit, and ornamental character. Flowers medium-sized, with a coral-red tube, spreading sepals, and an expanded violet-purple corolla reddish at the base. It is something in the way of Empress of Germany.

13. *Wave of Life* (E. G. Henderson & Son).—A variety of weak and drooping but dense habit of growth. Flowers with short tube, and broad reflexed sepals of a brilliant coral-red, and a large long spreading dark purple corolla.

In this group the certificates previously awarded to Commander and to Noblesse were confirmed.

§ 4. Scarlet tube, double purple corolla.

14. *Champion of the World* (F. & A. Smith).—A loose-habited variety with long weeping branches, and well adapted for furnishing a pillar or rafter in a greenhouse. The flowers are immensely large and full double; the tube and sepals coral-red, the latter tipped with green; the corolla purple, expanding to nearly 2½ inches in breadth. It is the largest-flowered of all the double red Fuchsias.

15. *Mr. Lyndoe.*—A free-growing variety with very large flowers, of which the sepals are erectly reflexed and of a pale red, and the corolla bold but somewhat irregular, and of a deep purple.

16. *Prince Leopold* (Veitch & Sons).—In this variety the plant is of a bushy drooping habit and free. Flowers with a short tube and reflexed sepals, and a dark purple, compact, double corolla.

17. *Triumphant* (Veitch & Sons).—A variety of rather spreading growth and tolerably free-flowering, altogether an exceedingly promising sort. Flowers with a slender tube and erect palish red sepals; the large, full, dense corolla of a rich deep purple. The individual flowers are exceedingly fine and well-formed.

Of this group the variety named Marksman had the previous certificate confirmed.

§ 5. Pink tube and purple corolla.

18. *Hugh Mollon* (Veitch & Sons).—A variety of free and vigorous but bushy drooping habit, well adapted for furnishing a pillar or rafter, being not only showy but distinct in character. Flowers large, with a long, slender pink tube and spreading green-tipped sepals, and a bold and spreading purple corolla. A very effective ornamental variety.

§ 6. Variegated leaves.

19. *Aucubæfolia* (E. G. Henderson & Son).—A very ornamental variegated-leaved variety, having greater merit from this point of view than from that of its flowers. The leaves have a large creamy-white and conspicuous central blotch, and when this variegation is well marked the plant is very handsome; but it is a form of va ie ga-

tion very apt to run out unless care be taken in the selection of cuttings. The flowers are freely produced, and have a long red tube and sepals, the latter not being spread out or reflexed. The certificate was given for the variegation.

20. *Sunray* (G. Smith).—A beautifully variegated Fuchsia, the finest yet sent out, with red variegated foliage, which is quite ornamental. The flowers have red tube and sepals, and a purple corolla. It was certificated for its variegation.

Second-class Certificates.

21. *Alba-coccinea*.—A variety of free-growing drooping habit, and adapted for a pillar or rafter. The flowers have a red tube, white spreading sepals, and a spreading purple corolla. It belongs to what is called the fancy class, and is both distinct in character and gay in appearance.

The Rose of Castile had the Second-class Certificate, previously awarded to it as a useful variety for decorative purposes, confirmed on this occasion, being still regarded as useful for conservatory work.

BEDDING PELARGONIUMS.

A very extensive collection of these indispensable flower-garden plants was arranged for comparison in the trial beds at Chiswick. The collection extended to 350 varieties, which were contributed by the principal growers, professional and amateur. The following are the certificated varieties :—

First-class Certificates.

§ 1. Scarlets.

1. *Harry King* (E. G. Henderson & Son).—A showy variety, of moderately vigorous habit, with zonate leaves; the flowers are of good shape, freely produced in moderate-sized trusses of a bright scarlet, with a white eye.

2. *Rosa Little* (H. Little).—A dwarf-habited variety, the leaves having a vandyked zone; the flowers, of which both pip and truss are large and fine, are of a rich deep solid scarlet colour, with a small white eye. The flowers are well displayed, and of exquisite shape.

3. *Tyrsal Rival* (Laing).—A dwarf compact-growing variety, the leaves of which are marked with a dark zone; the flowers are large, of fine form, and produced in tolerably full trusses, the colour being a rich scarlet with small white eye. It is a fine zonal scarlet.

4. *General Outram*.—A variety of medium vigour, and of a spreading habit of growth. The leaves are dark-zoned; and the flowers, which are borne in large bold trusses, are of a rich deep scarlet, the individual pips being of fine shape and quality.

§ 2. Rosy crimsons or cerises.

5. *Caxton* (Pearson).—A variety of moderately dense habit, and of even growth. The leaves are green, without zones. The flowers are moderate-sized, in rather small but dense trusses, and are of an intense rosy crimson, and very effective.

6. *Colonel Wright* (Pearson).—A fine, close-habited, and very showy variety, of medium vigour of growth. The leaves are green, not zoned. The flowers, which are freely produced in large trusses, are of a light rosy scarlet, and very showy. The flower trusses are abundant, and hence very effective, as well as from being whole-coloured, which gives them a density and solidity which is absent from shaded flowers.

7. *Mark Twain* (F. Miles).—A dwarf-growing variety of spreading but compact habit, and a free bloomer. The leaves have a dark zone, and the flowers are large, in large trusses, and of a deep opaque scarlet. The individual pips are fine, and hence the variety is an effective one.

8. *Mrs. J. George* (W. Paul).—A variety of dwarf and moderately vigorous habit. The leaves have a broad faint zone. The flowers are produced in remarkably fine trusses, and are individually of good size and possess form as well as quality, the colour being a pale scarlet.

§ 3. Pinks.

9. *Lady Emily* (Pearson).—A dwarf-growing vigorous variety of spreading habit, with pale green leaves. The flowers are of a bright deep pink, white at the base of the upper petals, the pips being large, and the trusses fine.

10. *Lucy* (Pearson).—A variety of tolerably compact habit, and a free bloomer. The flowers are of a fine rose-pink, and are borne in medium-sized trusses.

11. *Mrs. Augusta Miles* (Pearson).—A compact-growing variety of moderate vigour, with green leaves of medium size. The flowers are borne profusely in trusses of moderate size, of a deep bright pink with white eye, which makes them very attractive.

12. *Mrs. Holden* (Pearson).—A variety of compact, even growth, producing its medium-sized trusses of blossom in profusion. The flowers are of a bright pink colour, and remarkably showy.

§ 4. Bronze Zonals.

13. *Rev. C. P. Peach* (Laing).—A showy variety of dense, compact, even growth, with large leaves of a greenish yellow colour, marked by a broad deep copper-coloured zone. Flowers light scarlet.

14. *W. E. Gumbleton* (Laing).—A variety of compact growth. The leaves greenish yellow, with a broad zone of a dark bronze colour, and a narrow, yellow green border. Flowers scarlet.

§ 5. Gold-leaved.

15. *Golden Harry Hieover* (E. G. Henderson & Son).—A variety of dwarf, spreading, free-growing habit. The leaves are golden-green, with a narrow vandyked zone of dark bronze and broad golden edge; very showy. Flowers scarlet. A very desirable variety.

§ 6. Ivy-leaved.

16. *Gem of the Season* (S. Ford).—A variety of free rambling growth, with green Ivy-like leaves, and abundant flowers of large size, and a pale rosy pink colour. The flowers are very freely produced, but do not stand well; it will nevertheless be useful for baskets.

17. *Argus* (G. Smith).—A variety of moderately free growth, with green Ivy-like leaves, slightly marked with brown. The flowers are of a deep rosy pink with dark spots on the upper petals, and are of a tolerably good shape.

It is proposed amongst the other trials of 1876 to grow all the Ivy-leaved varieties obtainable, and which are now rather numerous, as pot plants, since they are an extremely interesting group, and are more useful under glass than in the flower borders.

Apiary.

FLOORBOARDS.—The question is often asked, What kind of floorboard shall I use for my hives? The plain inch-deal board, cut square, just sufficient to hold the cottage skep, is more frequently employed than it ought to be. In using straw skeps the bee-keeper should make it a rule never to cut an entrance

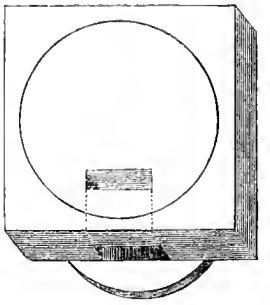


FIG. 116.—FLOORBOARD FOR BEE-HIVE.

through the hive; it not only spoils the hive, but makes it difficult for the bees to defend. After careful thought and experience with all kinds of hives, both wood and straw, I have come to the conclusion that the entrance should be made in the floorboard, and in such a manner as to open in the centre of the skep. To explain my meaning more clearly I give a small cut (fig. 116), which shows the entrance, cut with a chisel through the wood, to allow the bees to enter beneath the combs. This saves much extra labour for the inmates, and has one excellent advantage. Those apiarians who have watched their hives in the summer evenings, when the worn-out weary stragglers are coming home, almost unable to reach the hives, often see them after alighting on the entrance drop to the ground, to become a speedy prey to some hungry spider or toad: but after alighting on this board they can rest a few moments before finally entering the hive to deposit their load. I have seldom seen any bees lost when using these floorboards.

It also keeps the hives at a more equal temperature, the good of which will be experienced during the cutting winds of winter. The boards should be not less than 20 inches square, of 1½-inch deal wood. Allow a sufficient piece to project beyond the entrance, rounded off slightly at each corner, to serve as an alighting board. This should be nailed or screwed on the board, after cutting out the entrance from the solid wood. Take care that the wood is well seasoned, so that it may not warp. *R.*

Home Correspondence.

The Value of Earth Closet Manure.—Any theory of mine respecting the dry earth closet manure I care not to defend; I am, however, more fully persuaded than ever of the value of that manure. Hundreds of experiments have been tried, "scientifically and accurately," and, short of the perplexing difficulty of analysis, with abundant satisfaction. I am satisfied, too, that if ever set free to make known the right mode or modes of compounding and using the material for the purpose of admixture, I shall show that, either separately or in combination, both liquid and solid refuse of houses and towns can be rendered yet more valuable than this one form of manure. I therefore feel constrained to offer you the following remarks of a friend thoroughly acquainted with the chemistry of agriculture, on that portion of Mr. Dyer's letter in which he deals with one of my facts:—"The very best thing he (Mr. Dyer) could have said respecting the manure he has said." In the paragraph of his letter relating to "certain experiments adduced by you, he fully admits the following points":—1. "That in the case you adduce the dry earth closet manure has fairly beaten one of the best artificial manures in the market—the superphosphate of lime." 2. "That this superphosphate might have proved equal to the dry earth closet manure, if it had been made special by the addition of nitrogenous and alkaline substances." "The inference from this is that the dry earth closet manure contains all the necessary ingredients to make both a special and a general manure." I am ready to admit the difficulty in the present state of the manufacture of this manure as to sending it far away. This difficulty, however, by no means applies to its sale and use in the neighbourhood of towns and villages. In such cases it is vastly more manageable than stable dung, because of its far greater power and compression. In the contingency referred to above—the transit of the material—for giving vastly increased value to manure formed by the admixture with dry earth of either the liquid or solid excrement of man, or of horses, pigs, &c., will be perfectly feasible for every farmyard and garden in the land. *Henry Moule, Fordington Vicarage, May 3.*

Maréchal Niel Rose.—In giving you further information respecting the Maréchal Niel Rose, it is necessary to begin at the beginning. In the summer of 1872 good strong standard Briars (which had been obtained from the hedge-rows) were budded: the buds remained dormant till the following spring. They started early into growth, and made good plants during the summer. Having a low span-roofed house 60 feet by 17, running from north to south, the soil was prepared by adding a quantity of good loam and a liberal supply of manure, which was trenched in to the depth of 4 feet. Late—very late—in the following spring (1874), three Roses were planted at the east side of the house, which was kept close and the syringe used freely. The plants grew little till after Midsummer, when they made great progress. In the winter the unripened points of the strongest shoots were removed, which was the only pruning the plants received. In 1875 they started early into growth, and during the season produced above 300 fine blooms. After that they made most rapid progress till late in the autumn, during which time the only training attempted was merely tying or nailing to the rafters to keep them out of the way. In the past winter they were removed from the roof a tangled mass, and it was necessary to use the knife rather freely to separate them; and that was all the pruning I deemed needful. A wire was then placed between the rafters (which are 20 inches apart) alternately with them, and the Roses trained to these. They commenced growing late in February, and soon so thickly filled a space of 35 feet by 11 that, had they been planted at equal distances, they would have nearly covered the east roof. On April 18 I cut the first ten buds, and have had a constant supply ever since. On Monday last I cut eleven dozen fine buds, and, though cutting largely every day, there are, at the present time, quite as many ready on the plants. I may observe that the house is full of general bedding plants, and consequently the frost is excluded. It is very evident to me that all that is necessary to grow the Maréchal Niel Rose is to give it good and deep soil, with protection, so as to allow it to make early and rapid growth. *Robert Debron, Ely Nurseries, May 3.*

Colchicum speciosum.—We have at present here a great puzzle to us. Last autumn we received some fine bulbs of Colchicum speciosum. These did not flower with us, but now they are well up in good foliage, and seed capsules showing in the centre, very fine. Did the flowers abort inside the bulb tunic, and yet fertilise the ovaries?—if not, whence the seed and its capsules? *C. W.* [Perhaps from a concealed abortive and inconspicuous flower, as in the case of apetalous Violets. EDS.]

Evergreen Flowering Plants for North Aspects.—Many and oft are the inquiries for a suitable evergreen plant of a semi-climbing habit for north aspects, and others where the sun does not reach—"Tell us of something besides common Ivy" being not unfrequently demanded. In reply, the old Pyracantha is generally cited. It would be well for all to try some from amongst the many gems travellers and collectors have placed at our disposal upon these and similar aspects ere they give up the glowing hopes of an evergreen garniture on all bare spaces alike, and that because so much depends upon locality and local surroundings. I have tried two plants at this place upon a purely northern

aspect, and with the drawback of having a wall close by on the eastern side; these have now for the third season succeeded well, and are now clothed with their very beautiful and characteristic yellow blooms. Both are extremely pretty and interesting. One is, "beyond compare," a grand object for such a position, if only it can be induced to succeed. I refer to Berberis Darwinii, and its associate species, B. dulcis and B. stenophylla. The former, as I have already intimated, has so far succeeded beyond my anticipations for three years, and is at this time as full of fine bloom as any about the grounds; and this fact of growing it about the grounds, where it succeeds so thoroughly, speaks to its hardihood and good general character, as it succeeds in many duplicates, on a variety of aspects, in both light and heavy soils, unexceptionally well. Berberis dulcis, though by no means so showy, or such as can be so unreservedly recommended, has also succeeded equally well, in an equally cold, draughty, and sunless situation. Its bell-like blooms, borne on single stalks, are not showy, and its branches are more attenuated, nevertheless it is both interesting and pretty, and somewhat more free in its mode of growth than the more favoured B. Darwinii. I have no doubt whatever in my own mind, owing to having tried it in six or seven distinct places—in all and each of which it has succeeded most thoroughly—that the legitimate rival of even B. Darwinii, viz., Berberis stenophylla, will succeed upon such aspects, though I have not yet tried it on a true northern one. It makes a grand wall plant nevertheless, and one I have against a 12 feet high wall, of a N.E.E. aspect, is at this time a "garment in folds" of the richest yellow—a *drap d'or* of surpassing beauty, for, unlike B. Darwinii, somewhat stiff and twiggy, it produces long, strong, young branches annually, which hang over laden with their delightful flowers. The reader may easily apply these facts in practice forthwith, because such plants are invariably kept in stock in pots; and hence this will be found a good season at which to plant, and especially upon these aspects. *William Earley, Valentines.*

Dwarf Oak Trees in Dunsdale Valley, Overton Hills, Cheshire.—I was much interested by the short article in last week's *Gardeners' Chronicle* on the Varnclife Oaks. We have the whole of one side of Dunsdale Valley covered with dwarf Oaks; they certainly cannot be described as trees, for they are merely shrubs, with a short thick bole; nor are they young trees, as many visitors suppose at first sight, for they can be traced back nearly 150 years, and they were as large then as they are at present. They are growing on the new red sandstone rocks, with soil perhaps 1 foot deep of dark peaty mould; they are laden with lichens and mosses. Behind a few of the trees, sheltered by a rocky escarpment, we can find little tufts of the rare and beautiful shining cavern moss (Schistostega osmundacea); whilst beneath the trees are immense bushes of Vaccinium Myrtillus, L., intermingled with Erica cinerea, L., and Pteris aquilina, L.—the latter forcibly reminding one of the Bracken under which Rhoderic Dhu's men were concealed, in the *Lady of the Lake*. A better cover could not be conceived, especially if dressed in Robin Hood green, which was formerly worn by our rifle volunteers. *J. F. Robinson.*

Orchids.—The following Orchids are now in bloom in Mr. Michael's collection, Cholmeley Park, Highgate:—Cypripedium Hookeriæ, C. niveum, C. concolor, C. villosum, C. caudatum roseum, C. barbatum, C. barbatum superbum giganteum, C. Pearcei, C. parviflorum, C. arietinum; Odontoglossum Alexandræ, some splendid varieties; O. Pescatorei, O. citrosmum roseum, O. citrosmum pallidum, O. Roezlii, O. Cervantesii, O. Phalænopsis, O. bictonense, which has been in bloom for five months; Dendrobium primulinum, D. Devonianum, D. Densiflorum, D. crassinode Barberianum, several with very finely coloured flowers; D. chrysotoxum, D. crystallinum, D. lituiflorum, D. Heyneanum, D. Pierardi, D. thyrsiflorum, D. pulchellum purpureum; Epidendrum vitellinum, E. crassifolium; Lycaste fulvescens, L. Harrisoni; Masdevallia Veitchii, M. civilis, M. species, very pretty; Trichopilia crispa, T. coccinea, Oncidium leucochilum, O. cucullatum, O. Papilio majus; Phalænopsis amabilis, P. grandiflora, P. rosea, P. Lüddemanniana; Cattleya citrina, C. Skinneri, Angnloa Clowesii, Aerides Fieldingii, A. Lindleyanum, Saccolabium retusum, and Sobralia macrantha, Woolley's variety. *F. Newman.*

Fruit Prospects, &c.—What are the fruit prospects on walls in a season such as this? I fear in this locality they will be the reverse of productive. Plums are in full bloom, Pears in many cases well out, Cherries far advanced, over half the show of blossoms are open; Apricots just setting; and on the morning of April 30 we registered 6° of frost; May 1, 6°; May 2, 8°, with intervals of blazing sun and heavy hail showers during the day. Truly there is at present but frail hope of an autumnal ingathering. But this will not be the first hardship we shall have to encounter. The question arises, How are we to "keep the pot boiling" till summer vegetables come in? Early Turnips are nearly sure to "bolt," Cauliflowers are badly scorched, and many of them are certain to go the same way; Peas, though not suffering much, are yet not progressing as in former seasons; winter Spinach nearly cut, and Broccoli not worth the name. With scarcely a bit of green culinary vegetation in the garden, we are nearly thrown on our beam-ends already, leaving us for the next six weeks perhaps to supply the kitchen with any stray products we may be able to pick up, though if many sufferers could lessen the trial I believe we need have no lack of consolation; this would, however, be but poor selfish comfort at the best. *A. Scott, Dumbartonshire, N.B.*

Pereskia calandriniæfolia.—This plant is the same as P. spathulata. Labouret describes more species than these. I do not find the plant so hardy as P. Bleo or P. aculeata, but it is more erect, and rather more fleshy. It strikes quite freely, and is quite as easily worked upon. *J. Croucher, The Gardens, Sudbury House, Hammersmith.*

Holly Tree Leaves.—My attention was lately called to Mrs. Watney's notes on the Holly tree in *Hardwick's Science Gossip* for 1868, p. 107. In one of them she alludes to Southey's lines—

"But as they grow where nothing is to fear,
Smoothed and unarmed the pointless leaves appear."

She replies "that the idea is very poetical, but plain matter of fact tells a different tale, because the spines come with the age of the leaf." The poet, however, only followed the popular erroneous belief, and poets may indulge in romance. Evelyn, who was an admirer of Hollies, speaks fancifully of them, as "glittering with armed and varnished leaves, blushing with natural coral." But the writer, who professes to keep to facts only, tells a wrong tale herself; the age of Holly leaves does not account for their being spineless: those of seedlings are studded with spines on the margins when they appear above-ground, and the trees shed the greater part of their leaves in summer, while fresh ones gradually appear, and thus they are evergreen. The new foliage may be more or less prickly, according to health and age of the trees, and not those of the leaves as noted; but why so it is hard to explain. Vigorous growth is connected with it. When aged Hollies with spineless leaves are cut down the offshoots produce the usual bristling leaves; again, if those having oblong spineless foliage above only are topped, the fresh shoots are garnished with the same kind of prickly leaves as those on the branches below. This alone is enough to show the fallacy of the old popular belief that the leaves on the under branches of Hollies are armed with spines to prevent cattle browsing them, on which Southey founded his lines. If Evelyn alludes to a Holly fence it would seem to have been unshorn, as clipped ones seldom bear berries. One must look to aged trees with spineless leaves to find them "blushing with natural coral." *J. Wighton, Cossey Park.*

Setting of Peaches and Nectarines Under Glass.—This is a subject which at this season of the year often crops up in horticultoral periodicals, and from time to time much useful and valuable information has been the result. Still no one who has paid attention to the subject but must occasionally have been a little astonished at the diverse panaceas held forth, often with great temerity, by different authorities, often looking at the process from some pet standpoint and throwing entirely into the shade other and more important considerations. Fruit trees under glass, it should ever be remembered, are placed under artificial conditions; the natural dews and rains are excluded, and the trees are surrounded with a dry and scorching atmosphere until artificially supplied with moisture: to do so judiciously much skill and judgment are necessary (particularly where early forcing is carried on)—and this at all stages of their growth, at none more so than when in flower; and, therefore, this is the period concerning which most controversy has arisen as to supplying the necessary moisture and the amount of it. Some affirm that to secure a good "set" the syringe should be withheld while the trees are in flower; others, with no less certainty, affirm that they should be syringed during that momentous period. Much, very much, depends on the season of the year in which they are in flower, and the character of the weather at the particular season. In midwinter, during short sunless days and cloudy skies, sufficient moisture can generally be supplied by pans placed on the hot-water pipes and occasionally sprinkling the passages and borders with water, so as to secure a moderately moist atmosphere. When the days lengthen and the sun strengthens the syringe may be used occasionally while they are in flower, but I deem it safe in ordinary circumstances only to use it in very bright weather, and then not oftener than once a day, withholding it at all seasons in cloudy, dark weather during the flowering period, because the pollen appears only to act when dry, and best when dry accompanied with less or more sunshine. During the winter months we have often short blinks of sunshine, which can thus be utilised for setting the fruit by keeping the pollen dry. I have observed the young leaves of Peach trees on a back wall in the month of March crumple up and fall off in dark weather when the trees had been syringed twice a day, and recovering their health soon after the syringe was withdrawn. If then, in dull weather the leaves suffer from syringing, how much more the tender blossoms would be likely to do so from the same cause. Most of those who have had much to do with the management of Peach and Nectarine trees must have observed that young trees grow very vigorously after being planted, particularly if placed in fresh soil, as is generally done, and that they do not set fruit freely. This arises principally from the great vigour of their growth, which necessitates a longer season or higher temperature to ripen the wood thoroughly. In cold houses, where artificial heat is not used, at least in North Britain, old trees are often unproductive, because the wood is not ripened. This is a more frequent cause of trees not setting well than is by many supposed; for unless the wood be thoroughly ripened no treatment will secure a good "set." Another frequent cause of failure is to allow the trees to get overrun with thrips or red-spider, destroying the foliage before it has time to perform its necessary functions, thus preventing the flower-buds from being properly developed and the wood from ripening. When borders get exhausted from being long occupied by the same trees, the trees become unhealthy from want of proper food, which no manure can altogether supply. Under these circumstances the trees often exude gum, their growth becomes stunted, they shed their flower-buds, or, if they pass the flowering period, drop their fruit when little larger than peas—a few only maturing, and these inferior in size if not in quality. The remedy is simple: supply fresh soil, if possible a surface spit off a rich old pasture, if not, any good loam taken from near the surface; add a liberal admixture of half-inch bones, renewing the soil on one side of the roots one year and on the other side the next: in this way, unless the tree is the more exhausted, a crop need not be sacrificed. When Peach and Nectarine trees are grown in a suitable soil and the general management is good, they seldom miss a crop; but this is just a reason why they should occasionally have fresh soil supplied, as the constantly recurring heavy crops exhaust the soil, and in course of years requires its renewal to secure their fertility. Attention to this is the key to success; without it no treatment will succeed. *A. Fowler, Castle Kennedy, Stranraer.*

The Almond Tree.—The highly poetic strain in which your talented correspondent, Mr. Leo Grindon, writes of the Almond tree hides or distorts some of the facts connected with that very remarkable subject. In the opening chapter of the book of the Prophet Jeremiah we read in the authorised version (verse 11) "I see a rod of an Almond tree," but turning to the Catholic Bible we read, "I see a rod watching," and in the same Bible, at verse 12, we read "I will watch over my word to perform it;" so that, taking the text and context it has nothing to do with Mr. L. G.'s "promptitude," "leadership," or "supremacy," but signifies that a rod is hanging over the heads of those who have erred, to punish them. In the notes appended to verse 11 we read—Watching, Heb., "of an Almond," Sept. "Nut tree;" and in the same note it is stated that the Almond tree flourishes in January, as said also by Mr. Grindon, and brings fruit in March: Theod., Pliny, xvi. 25. In England, according to London, it flowers in March and April, and from observation the Almond as well as the Peach and Nectarine, its near relative, flower early, and their double flowering varieties outdo the Almond in weight of "bloom on a leafless bough." But how does this modern writer upon "the amenities of living Nature," whatever that may mean, hitch in the sweet little souls, who come into bloom as twelve-year-olds, the leaves to make their appearance by-and-by? Is it the girls that smile and sparkle as blooms, and the boys that are to make their appearance by-and-by? In Numbers xvii. Aaron's rod, though long cut from the tree, is found to have budded and brought forth buds and blossomed blossoms and yielded Almonds. What authority is there for this addition to the sacred text of Aaron's rod being long cut from the tree? I find no mention of it in any of the Bibles to which I have access. In Eccles. xii. 5, "the Almond tree shall flourish." Of this phrase Mr. G. says, "ordinarily this is believed to refer to the blanching of the hair." The figure—he says—rightly regarded, makes no reference whatever to loss of colour in the hair. That which it refers to is man's new life. Death is the completion of a given period of our existence. It is every bit as much a beginning as an ending. The new phase of life which commences upon the close of the first is spring once again,

&c. Mr. G. complains that the analogy between grey hairs and the red colour of the Almond flower is not perfect, but yet methinks I could find him a hundred at least of bald-pated topers whose ruddy skins and snowy locks have all the colour of the Almond flower in high perfection. What is meant by the heart and loving fancy whence all things that have comeliness and immortality receive their life? Surely that which already has immortality has no need of any other kind of life. Talk about superlatives and of beings immortalised. Phyllis writes to her lover one of the most exquisitely tender epistles existing in any language, ancient or modern, and dies of grief, and is changed by the gods into an Almond tree. Query, has your correspondent read all the love ditties of all ages and of all lands? If he has not, it is presumptuous to set she of Thrace before all womankind. I do not know to what school of thought I could refer Mr. L. G.'s ideas about a future state, but surely this is not the place either to broach or discuss such a subject. The lone escutcheon on the front of the mansion tells of departed owners, writing "Resurgam," and there ends the tale. *F.*

Reports of Societies.

Alexandra Palace: *May 5 and 6.*—For a "Great Flower Show" this was one of the poorest displays it has been our misfortune to attend, consequently our report will be a brief one. The largest exhibitors were Mr. B. S. Williams, Holloway, and Messrs. Cutbush & Son, Highgate, and had these firms not been represented we do not care to say what the miscalled "Great Flower Show" would have been like. There are so many two days' shows held in the metropolis now that exhibitors cannot exhibit well at all; and the consequence is that the exhibitions are dwindling down to mere decorative affairs, and not worth a quarter of the money usually charged at the gates to see them. Mr. B. S. Williams contributed most to the exhibition, taking 1st prizes in the classes for twenty exotic Ferns, twenty fine-foliaged and flowering plants, ten fine-foliaged plants, and eight greenhouse Azaleas, and in addition received an extra prize for a group of choice new and rare plants. Messrs. W. Cutbush & Son, Highgate, contributed a nice group of Heaths, Azaleas, Palms, and suchlike useful decorative subjects. Mr. Turner had the 1st prize for twelve show Pelargoniums in the nurserymen's class; and the Misses Christy (gr. Mr. Moorman), Coombe Bank, Kingston, were 1st for twelve Roses in pots, and a very good dozen they were. R. Thornton, Esq., The Hoo, Sydenham (Mr. Ratty, gr.), had the best group of Azaleas amongst amateurs, and Mr. Turner amongst nurserymen. Messrs. William Paul & Son, Waltham Cross, contributed two groups of Roses in pots, together with several boxes of cut blooms. A 1st prize for twelve Roses in pots went to Mr. Turner, and a nice fresh group, not shown in competition, came from Messrs. H. Lane & Son, Great Berkhamps.ead. A few good alpine Auriculas came from Mr. Turner. The rest of the plants shown, that were of any account, were put up by the Alexandra Palace Company.

Obituary.

WE are confident that a very wide-spread feeling of regret will be experienced at the announcement that it is our sad duty to make of the death of LOUIS VAN HOUTTE on the 9th inst. That gentleman has held so prominent a position among horticulturists for so many years, was so successful as a botanical traveller and as an introducer of new plants, so energetic and large-minded in his business operations, so richly endowed by Nature with strong sense and rare humour, that all who came in contact with him felt they were in the presence of no common man. Louis Van Houtte was born at Ypres in 1810, travelled for some time in Brazil, and founded the vast establishment at Ghent, which has been so often described in our columns, and with which for some years the Government School of Horticulture was connected. As the editor and publisher of the *Flore des Serres* he rendered excellent services to horticulture, and in that undertaking alone gave evidence of that comprehensive energy of purpose and power of work which were so characteristic of him. In his enormous undertakings he was fortunate in having the active and most intelligent assistance of Madame Van Houtte and her two daughters, who, with a son, are left to lament the loss of one of the most prominent and remarkable men in the domain of European horticulture. Louis Van Houtte may be said to have died in harness; for, although in ill-health, he acted on the jury at the late Brussels Exhibition, to whose success he contributed not a little. We hope shortly to publish a portrait and a more detailed biographical notice of this remarkable man. In the meantime we take this, the earliest, opportunity of expressing on the part of British horticulturists their profound sympathy with the family of the deceased gentleman in their bereavement, and with Belgian horticulturists in general, by whom this loss will be severely felt.

—— We are sorry to announce the death, on the 4th inst., of Mr. WILLIAM CUTBUSH, of the Barnet Nurseries, which sad event took place very suddenly at Brighton, whither he had gone for the benefit of his health.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, MAY 10, 1876.

MONTH AND DAY.	BAROMETER. Mean Reading Reduced to 32° Fahr.	BAROMETER. Departure from Average of 18 years.	TEMPERATURE OF THE AIR. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity: Sat. = 100.	WIND Average Direction.	RAINFALL.
May	In.	In.	°	°	°	°	°	°			In.
1	30.28	+0.52	60.3	33.0	26.4	46.1	—4.7	38.2	75	E.; E.S.E.	0.00
5	30.15	+0.39	62.1	34.1	27.7	47.1	—4.1	38.4	72	E.; E.S.E.	0.00
6	30.03	+0.28	67.7	35.4	32.3	49.7	—1.9	38.8	65	E.; N.E.	0.00
7	30.16	+0.41	59.2	38.4	20.8	47.2	—4.5	41.2	79	E.N.E.; N.E.	0.00
8	30.19	+0.45	58.3	37.6	20.7	46.9	—4.7	36.5	68	N.E.; E.N.E.	0.00
9	30.13	+0.38	57.9	39.1	18.8	46.6	—4.0	36.8	69	E.	0.00
10	30.04	+0.30	57.3	37.8	19.5	46.6	—4.7	34.7	64	N.E.; E.N.E.	0.00
Mean	30.14	+0.38	60.4	36.7	23.7	47.2	—4.2	37.8	70	E.; N.E.	sum 0.00

May 4.—A fine cloudless day. Cold.
— 5.—Very fine and clear throughout.
— 6.—Fine day. Misty in early morning, and cloudy from 2 to 3 P.M., but clear after.
— 7. Dull and cloudy, with a slight shower of rain at 10 A.M. Fine and bright after.
— 8.—A fine day. Cloudy. A gale of wind at times.
— 9.—Fine and partially cloudy throughout. Gale of wind.
— 10.—A fine day, cloudy at times. Strong wind throughout.

—— During the week ending Saturday, May 6, in the neighbourhood of London, the reading of the barometer at the level of the sea increased from 29.58 inches at the beginning of the week to 30.50 inches by about noon on May 4, decreased to 30.17 inches by the afternoon of the 6th, and was 30.22 inches at the end of the week. The mean reading for the week at sea level was 30.18 inches, being 0.28 inch above that of the preceding week, and 0.23 inch above the average.

The highest temperatures of the air observed by day ranged from 67½° on the 6th of May to 48° on April 30; the mean value for the week was 57. The lowest temperatures of the air observed by night varied from 32° on May 3 to 40½° on April 30; the mean weekly value was 35¼°. The mean daily range of temperature in the week was 21¾°, the greatest range in the day being 32½° on May 6, and the least 7¾° on April 30.

The mean daily temperatures of the air were as follows:—April 30, 42°.6; May 1, 42°.8; 2d, 42°.1; 3d, 43°.3; 4th, 46°.1; 5th, 47°.1; 6th, 49°.7; and the departures in defect of their respective averages were—6°.8, 7°, 8°, 7°.1, 4°.7, 4°.1, 1°.9. The mean temperature of the air for the week was 44°.8, being 5°.7 below the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 122° and 118° on the 5th and 6th of May; on the 30th of April 50½° was the highest reading. The lowest reading of a thermometer on grass, with its bulb exposed to the sky, was 27° on the 6th of May; the mean for the seven low readings was 30½°.

The direction of the wind was N.E., E., and E.S.E., and gentle in motion.

The weather during the week was fine, but cold and unseasonable. Hail fell on May 1, and a little sleet fell on the 2d.

Rain fell on Sunday, April 30; the amount measured was 0.20 inch.

In England the highest temperatures of the air observed by day was 71° at Eccles, 69°.6 at Bristol, 69°.5 at Cambridge, and 69° at several places; at Brighton 57° was the highest temperature in the week, and at Plymouth 58° was the highest; the mean value from all stations was 65½°. The lowest temperatures of the air observed by night was 28° at Newcastle, Sheffield and Eccles, at Plymouth, 36° was the lowest temperature in the week, and it was 35°.6 at Liverpool; the general mean from all stations was 31½°. The range of temperature in the week was the greatest at Eccles, 43°, and the least at Plymouth, 22°, and Brighton, 24°; the mean range of temperature from all stations was 34½°. The mean of the seven high day temperatures was the highest at Bristol and Eccles, both 58½°, and the lowest at Newcastle-on-Tyne, 51½°; the general mean from all stations was 56¼°. The mean of the seven low night temperatures was the lowest at Eccles, 32¾°, and the highest at Liverpool, 40½°; the mean value from all stations was 36½°. The mean daily range of temperature in the week was the greatest at Eccles, 25½°, and the least at Liverpool, 14°; the mean daily range from all stations was 20°.

The mean temperature for the week was 44½°, being 8½° lower than the value for the corresponding week in 1875. The highest was 45¾°, at Liverpool, and the lowest 41½°, at Newcastle-on-Tyne.

Rain fell on five days in the week at Nottingham, the amount measured was 0.42 inch; at Birmingham 0.46 inch was measured on one day only; at Truro, Liverpool, Manchester and Bradford, no rain fell, and the average fall over the country was 0.12 inch.

The weather during the week was fine, but very cold and unseasonable; with great ranges of temperature during the day.

Solar halos were seen at Liverpool on May 4.

In Scotland the highest temperatures of the air ranged from 64° at Dundee to 61½° at Aberdeen; the mean value from all stations was 63°. The lowest temperatures of the air varied from 30° at Paisley to 33½° at Leith. The mean from all stations was 32°. The mean range of temperature from all stations was 31°. The mean temperature of the air for the week was 46°, being 5½° lower than the value for the corresponding week in 1875. The highest, 46½°, occurred at Dundee, and the lowest, 44½°, at Paisley.

Rain fell to the amount of one-tenth of an inch at Glasgow, Aberdeen, and Leith; at Dundee and Paisley five-hundredths of an inch only fell. The fall over the country was one-tenth of an inch.

At Dublin the highest temperature of the air was 64½°, the lowest 24¾°, the range 39½°, the mean 44°, and the rainfall 0.04 inch.

JAMES GLAISHER.

Enquiries.

He that questioneth much shall learn much.—BACON.

116. FOOD FOR SILKWORMS.—Will any correspondent be kind enough to tell me what is the proper food for Quito silkworms? *O.*

Answers to Correspondents.

CATALOGUES. His Excellency Pierre Wolkenstein will feel greatly obliged if nurserymen and seedsmen will kindly send him their catalogues. They should be forwarded (by post) to S. E. Pierre Wolkenstein, Secrétaire de la Société Impériale d'Horticulture de Russie, St. Petersburg.

DOUBLE AURICULAS: *A. R.* Our remarks respecting the cultivation of the double Auriculas naturally applied to their pot culture, as at present, at least it is not probable that any one would care to trust such comparatively rare plants to the tender mercies of the open border. At this time of the year the plants should be growing freely in large 60's, if potted into some good sweet fibrous loam, with an admixture of rotten manure and sand. The best place to house them is a cold frame, facing the north, and shaded during the prevalence of hot sunshine. The frame might be turned to the south with advantage in the winter. If planted out the soil should be deep and rich, and the position shady.

EURYA: *W. C. S.* When well grown Eurya latifolia is a very handsome plant, its golden variegation being very effective, added to which there is a fine flash of orange or flame-colour on the young growths. It is therefore quite admissible in a class for fine-foliage plants.

FANCY POLYANTHUSES: *W. Cudwell.* A bright and effective strain; some of the flowers large, bold, and well-proportioned, but many pin-eyed. The gold-laced varieties are showy also. *R. D.*

GRAPES: *A. J.* The Gros Colman is round-berried, but certainly not Muscat-flavoured. There is nothing important omitted from your list of salad. If for exhibition, white and red Celery might be shown separately. Lettuces would divide into Cos and Cabbage varieties, not white and brown.

IRIS SAARII: *Schott.* Mr. J. G. Baker, The Herbarium, Royal Gardens, Kew, would be much obliged to any of our readers for a specimen of this plant.

MAGNOLIAS: *J. R. H.* M. conspicua, M. purpurea, and other varieties. They are quite hardy. Please inform us in what localities the Wistaria will not grow.

NAMES OF PLANTS: *J. P.* Hollbollia latifolia, sometimes, but erroneously, called Stauntonia latifolia.—*H. T. D.* A small variety of the Paper Narcissus—N. Tazetta and Coccoloba platyclada.—*A. D. Walker*, Fritillaria pyrenaica.—*R. Hives.* Sempervivum Pavie, as near as we can make out from a smashed specimen.

—*V. P. G.* Miltonia flavescens.—*C. L.* The large-flowered species is Masdevallia coriacea, the smaller one M. octhodes.—*C. E. G.* Carex sylvatica.—*Chislehurst.* Kæmpferia rotunda.—*D. M.* Equisetum arvense.—*W. D.* Leucojum pulchellum.

PORTABLE PIPE: *L. J.* India-rubber hose in lengths, with union joints, is generally used for such a purpose as that indicated. Throw it into a tank or tub of water when not in use. We cannot recommend gutta-percha, which soon perishes. If the india-rubber is not durable enough, you might use lengths of inch gas-piping screwed together, and mounted on low wheels, as the French do.

VARIEGATED PHLOX: *Amateur.* Very pretty, and not common, but we think we have seen a similar sport.

VARIOUS: *R. Hayes.* Clematis will strike from cuttings produced in warmth from established plants, keeping the cuttings in heat in the usual way. This should be carried out early in the spring, but our correspondent is much more likely to succeed by layering the young shoots when these are sufficiently matured, about the end of June, July, or later in the autumn, not detaching them from the plants before they are well-rooted. Cyclamens such as our correspondent describes from two to five years old should, after flowering, be placed in cold frames in a shady situation, and the soil kept continually moist, so as to keep the roots in a healthy condition. The old practice of drying them off is fatal to their well-being. Towards the end of summer, when they have begun to grow freely (not before), they should be repotted. Do not give them too much root-room, and pot in good turfy loam and leaf-mould, about three parts of the former to two of the latter, with a liberal addition of sand. All through the autumn and winter, after the weather gets cold, let them be in a little warmth, with plenty of light and a little air. They do not do well generally amongst other plants; the great thing is to keep them free at all times from aphides and red-spider, by dipping in tobacco-water, as required, and continually syringing both the under and upper sides of the leaves all through the summer. To have them in bloom by Christmas they should be kept in the autumn in a night temperature of 50° near the glass, and with sufficient air to prevent their leaves and flowers being drawn up weakly.

WIRING WALL: *N. C.* Wires are not so good as nails and shreds, which keep the shoots close to the wall surface. If used at all, the studs should be driven close home, and the wires got in as close as possible; 6 inches is a convenient distance apart for training purposes.

CATALOGUES RECEIVED.—Messrs. Carter & Co. (237 and 238, High Holborn, London). Illustrated Catalogue of Plants.—Messrs. E. G. Henderson & Son (Wellington Road, St. John's Wood, London, N.W.), Spring Catalogue of Stove, Conservatory, Herbaceous and Bedding Plants, &c.—Messrs. M. C. Alkemade & Son (Zeestraat, Noordwijk-Binnen, near Haarlem, Holland), Catalogue of Dutch Flowering Roots and Bulbs.

COMMUNICATIONS RECEIVED.—M. J. B.—H. K.—R. D.—A Nurseryman.—R. T.—C. A. L. (thanks).—J. Backhouse & Son (thanks).—An Old Subscriber.—H. M.—W. Powell (we have not received the Cinerarias).—R. B.—C. Y. M.—P. G.—W. O.

Markets.

COVENT GARDEN, May 11.

A general improvement has taken place in business, with very little alteration in the supply, there being no diminution in the arrival of all kinds of fruit and vegetables from the Continent. The Cucumber trade is very flat. *Jas. Webber, Wholesale Apple Market.*

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per doz.	24	0–60 0	Fuchsia, per doz.	6	0–18 0
Begonias, per doz.	6	0–12 0	Genista, do.	6	0–18 0
Bouvardias, do.	12	0–18 0	Heaths, in var., doz.	12	0–30 0
Calceolaria, per doz.	9	0–24 0	Lily of Valley, doz.	12	0–30 0
— herbaceous, doz.	9	0–18 0	Mignonette, do.	6	0– 9 0
Cineraria, per doz.	6	0–18 0	Myrtles, do.	3	0– 9 0
Cyclamen, do.	9	0–18 0	Palms in variety, each	3	6–21 0
Cyperus, do.	6	0–12 0	Pelargoniums, scarlet, per doz.	4	0– 9 0
Deutzia, do.	6	0–18 0	— in variety, doz.	18	0–36 0
Dielytra, do.	12	0–24 0	Roses, Fairy, do.	9	0–15 0
Draccæna terminalis	30	0–60 0	— various, do.	18	0–30 0
— viridis, per doz.	18	0–24 0	Spiræa, per doz.	9	0–24 0
Epacris, do.	12	0–18 0	— palmata, each	2	0– 5 0
Ficus elastica	2	6–15 0			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	4	0–12 0	Narcissus, per dozen	0	4– 1 6
Azaleas, 12 sprays	0	6– 2 0	Nemophila, 12 bun.	1	6– 4 0
Camellias, per doz.	1	6–12 0	Pelargoniums, 12 spr.	0	9– 2 0
Carnations, 12 blooms	2	0– 4 0	— Zonal do.	0	6– 1 6
Cineraria, per bunch	1	0– 2 0	Pinks, white, p. doz.	1	0– 2 0
Eucharis, per doz.	6	0–12 0	Primula, dbl., p. bun.	1	0– 1 6
Gardenia, per doz.	2	0– 9 0	Rhododend., 12 hds.	1	6– 6 0
Heliotropes, 12 spr.	0	6– 1 0	Roses, indoor, p. doz.	1	6–10 0
Lily of Valley, 12 spr.	0	6– 3 0	Spiræa, 12 sprays	1	0– 4 0
Mignonette, 12 bun.	6	0– 9 0	Stephanotis, 12 sprays	0	0–15 0

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1	6– 5 6	Lemons, per 100	6	0–10 0
Apricots, per box	2	0– 3 0	Oranges, per 100	6	0–12 0
Cherries, per box	4	0– 6 0	Peaches, per doz.	21	0–36 0
Cobs and Filbts., lb.	0	9– 1 0	Pears, per doz.	3	0–15 0
Gooseberries, gr., qt.	0	9– 1 0	Pine-apples, p. lb.	1	6– 4 0
Grapes, per lb.	4	0–18 0	Strawberries, per oz.	0	3– 1 3

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz.	4	0– ..	Lettuces, per score	2	0– ..
— Jerusalem, p. lb.	0	3– ..	Mint, green, bunch	0	4– ..
Asparagus (English), per bundle	2	0–12 0	Mushrooms, per pott.	1	0– 2 0
— French	2	0– 5 0	Onions, young, bun.	0	4– 0 6
— Giant	1	8– 2 0	Parsley, per bunch	0	4– ..
Beans, French, p. 100	1	3– 2 6	Peas, green, per lb.	1	0– ..
— Longpod, basket	5	0– ..	Potatos (new), baskt.	1	0– ..
Beet, per doz.	1	0– 2 0	— new Jersey, p. lb.	0	6– 1 6
Cabbages, per doz.	1	0– 2 0	— Sweet, per lb.	0	6– ..
Carrots, per bunch	0	6– ..	Radishes, per bunch.	0	1– 0 3
— new, do.	2	0– ..	— Spanish, doz.	1	0– ..
Cauliflowers, p. doz.	2	0– 4 0	— French	0	6– ..
Celery, per bundle	1	6– 2 0	Rhubarb, per bundle	0	6– 1 0
Cucumbers, each	0	6– 2 0	Salsafy, per bundle	0	9– ..
Endive, per doz.	1	0– 2 0	Shallots, per lb.	0	3– ..
— Batavian, p. doz.	2	0– 3 0	Spinach, per bushel	3	0– ..
Herbs, per bunch	0	2– 0 4	Tomatas, per doz.	4	0– 6 0
Horse Radish, p. bun.	3	0– 5 0	Turnips, per bundle	0	4– ..
Leeks, per bunch	0	2– 0 4	— New French, do.	2	0– ..

Potatos — Rocks, 105*s.* to 110*s.*; Regents, 120*s.* to 170*s.*; Flukes, 130*s.* to 160*s.*; Victorias, 120*s.* to 160*s.* per ton. Old stocks nearly exhausted.

SEEDS.

LONDON: *May* 10.—Owing to the lateness of the season, there is still some demand for Clover seeds. As previously noted, this year's unusually high currencies have induced seedsmen to keep their stocks very low, so that the business now doing is quite of a hand-to-mouth character. As holders are naturally anxious to effect a clearance, lower prices are taken for most descriptions. For spring Tares there is less inquiry at declining rates. Canary seed is steady, but the limited consumption precludes the probability of any important advance. In consequence of the unparalleled prices which have lately obtained, there is a large breadth of Canary seed growing this year in this and in other countries. Hemp seed meets a quiet sale at full quotations. For Rape seed there is a better request, and Mustard finds buyers at unchanged values. Blue Peas are scarce. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday for English Wheat, the supply of which was small, offers of less money were not accepted, but a fall of 1*s.* per quarter was quoted in the price of foreign. Malting Barley was nominally unchanged, while secondary and distilling sorts were held for previous rates. Malt was very quiet. Oats were purchased to a fair extent at the quotations of last week. Maize was steady, and no change was reported in Beans or Peas. The flour market was dull, and in the few sales closed prices were somewhat lower.—On Wednesday there was no change quoted in English Wheat, but foreign suffered a further slight reduction in some cases. Barley was held for previous rates, and no actual decline was reported in other classes of spring corn. Flour was very quiet and cheaper to sell.—Average prices for the week ending May 6:—Wheat, 45*s.* 2*d.*; Barley, 34*s.* 4*d.*; Oats, 26*s.* 4*d.* For the corresponding week last year:—Wheat, 42*s.* 8*d.*; Barley, 39*s.*; and Oats, 30*s.*

CATTLE.

At the Metropolitan market on Monday prices for beasts were lower on the average, and a clearance was with difficulty effected. For sheep trade was slow at rather reduced prices. Trade was worse for lambs. Choice calves were scarce and dear. Quotations:—Beasts, 4*s.* 4*d.* to 4*s.* 10*d.*, and 5*s.* 4*d.* to 5*s.* 8*d.*; calves, 5*s.* to 6*s.* 4*d.*; sheep, 5*s.* 4*d.* to 5*s.* 10*d.*, and 6*s.* 2*d.* to 6*s.* 8*d.*; lambs, 8*s.* to 9*s.*; pigs, 4*s.* 4*d.* to 5*s.* 4*d.*—There was but a short supply of beasts, and a small demand for them, on Thursday; consequently Monday's prices were unaltered. Prices were lower for sheep; a good demand existed for choice lambs and calves, but inferior qualities were disposed of with difficulty.

HAY.

At Whitechapel on Tuesday the supply was rather large, trade was slow, and prices were a little easier. Prime Clover, 100*s.* to 147*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 135*s.*; inferior, 55*s.* to 75*s.*; and straw, 35*s.* to 48*s.* per load.—On Thursday trade was quiet. Quotations:—Clover, best, 115*s.* to 147*s.*; inferior, 85*s.* to 95*s.* Hay, best, 112*s.* to 135*s.*; inferior, 55*s.* to 75*s.*; straw, 36*s.* to 48*s.* per load.—Cumberland market quotations:—Superior meadow hay, 138*s.* to 147*s.*; inferior, 95*s.* to 120*s.*; superior Clover, 150*s.* to 160*s.*; inferior, 126*s.* to 135*s.*; and straw, 48*s.* to 52*s.* per load.

POTATOS.

At the Borough and Spitalfields markets on Monday the supply of Potatos was less than usual. Trade remained steady, and prices were as follows:—Kent Regents, 130*s.* to 165*s.* per ton; Essex do., 110*s.* to 155*s.*; Scotch do., 130*s.* to 170*s.*; rocks, 100*s.* to 110*s.*; Victorias, 150*s.* to 180*s.*; flukes, 160*s.* to 180*s.*; and kidneys, 110*s.* to 130*s.*

COALS.

On Monday the market was steady, and last prices were quoted. Wednesday's market was a dull one, and the price for house coals fell 6*d.* per ton. Quotations:—Walls End—Harton, 18*s.* 9*d.*; Elliots, 18*s.* 9*d.*; Hetton, 21*s.*; Hawthorn, 18*s.* 9*d.*; Lambton, 20*s.* 6*d.*; Original Hartlepool, 21*s.*; Tunstall, 18*s.* 9*d.*; Vanes, 18*s.* 9*d.*; Chilton, 20*s.* 3*d.*; East Hartlepool, 20*s.* 9*d.*

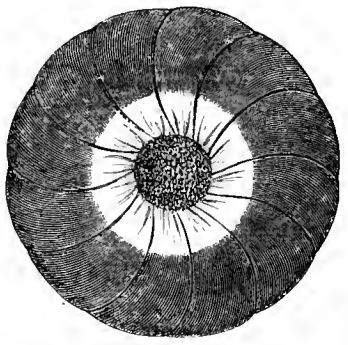
SUTTON'S

SUPERB STRAINS OF

FLORISTS' FLOWERS,

POST FREE.

The Finest Strain of Cineraria.



SUTTON'S SUPERB CINERARIA.

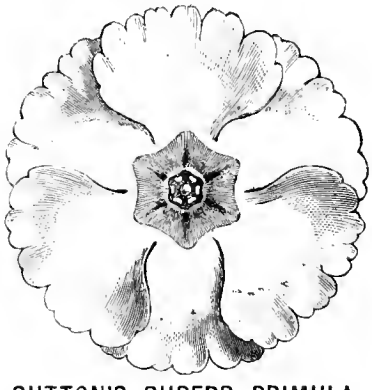
This will be found unequalled by any in cultivation, the seed having been saved from the finest named varieties only.

Price 2*s.* 6*d.* per packet, post-free.

From Mrs. A. ALLERTON, *Prittlewell, May* 8.

"Our Cinerarias this year (from your seed) are splendid; they far surpass any I saw at the Botanical Gardens yesterday."

The Finest Strain of Primula.



SUTTON'S SUPERB PRIMULA.

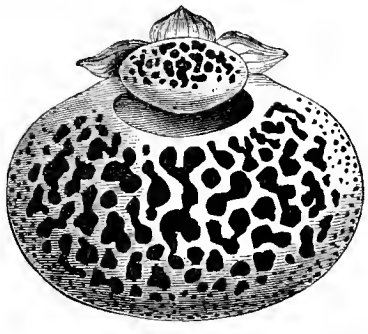
This choice stock has been carefully selected from the largest fringed flowers of good colour. Habit, robust; with bloom thrown well above the foliage.

Red, white, or mixed, 2*s.* 6*d.* per packet, post-free.

From W. EDWARDS, Esq., *Wellington, January* 21.

"I cannot help saying that the Primulas from your seed have always given great satisfaction, but this year more than ever."

The Finest Strain of Calceolaria.



SUTTON'S SUPERB CALCEOLARIA.

This splendid strain has been most carefully selected from the very finest collections in cultivation. The plants are compact in habit, with beautiful green foliage, and a profusion of bloom. The flowers are perfect in form and substance, and of every shade of colour.

Per packet, 2*s.* 6*d.*

From A. E. RUSSELL, Esq., *Dalnabreck, July* 10.

"My Calceolaria plants, from seed purchased of you last year, are particularly fine, of very compact habit, and beautiful in colour."

SUTTON & SONS,

THE QUEEN'S SEEDSMEN, READING.

HORTICULTURAL BUILDINGS.

Those about to erect Conservatories, Hothouses, Greenhouses, &c., are respectfully requested to inspect those already built at my Works, Stanley Bridge, King's Road, Chelsea, S.W.

H. Ormson's Patent Tubular Cornish Boiler, in conjunction with his Patent Divisional Hot-water Apparatus, may be seen at the same time.

This Apparatus is the best and most efficient ever invented. There is no other like it. It gives the Gardener complete command over the Temperature of his Hothouses, which he can increase or diminish as he may find necessary, by bringing more or less pipes into action, the others remaining cold, and this in spite of any acts of carelessness the Stoker may commit. It surpasses all other Hot-water Apparatus in the power it gives of Economising Fuel. This system can be applied to Apparatus already fixed on the old plans.

Hot-water Pipes, Boilers, &c., at Wholesale Prices, and Tenders given for Heating all Descriptions of Buildings.

Plans and Estimates for Horticultural Buildings of every Description, either in Wood or Iron, to suit any Garden, Large or Small,

Designed and Constructed with strict regard to Economy of Price, Good Workmanship, Durability of Material, and Practical Adaptation to their various Purposes.

Cast Iron and Slate Foundations (if preferred to Brickwork), which the Advertiser has been in the habit of using for the last 25 years.

HENRY ORMSON,
HORTICULTURAL BUILDER and HOT-WATER APPARATUS ENGINEER,
STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

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Forwarded a Month on Trial to any Address, and can be sent back if not approved of and

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	£	s.	d.
10-inch Machine	3	3	0
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14-inch Machine	5	5	0
16-inch Machine	6	6	0
18-inch Machine	7	7	0
20-inch Machine	8	8	0
24-inch Machine	9	10	0
30-inch Machine	12	10	0

Grass Boxes, 12-inch, 7*s.* 6*d.*; 14-inch, 16-inch, 18-inch, and 20-inch, 10*s.* each.

Carriage paid to all principal Railway Stations and Shipping Ports in the Kingdom.

MACHINE DISTRIBUTING CUTTINGS.

TESTIMONIALS.

The Gardens, Kennure Castle, New Galloway.

MR. PARKINSON, *April* 25, 1876

SIR,—I enclose Post-office Order for the Lawn Mower you sent me. I can give your machine a hearty recommendation for doing its work well, and one man can do as much, and with more ease, than two could do with the older sorts. Another great advantage is being able to cut the Grass when wet, for it is no easy matter Grass-cutting the hot days in summer.

Yours truly,
THOMAS DUFF, Gr. to the Honble Mrs. B. Gordon.

The Gardens, Kirkhammerton Hall, near York.

SIR, We tried the 20-inch Lawn Mower where the Grass was 5 or 6 inches long, and it did its work well and with much easier draught than any I have seen before. On a level lawn your 20-inch machine can be worked by one man. It will also cut wet Grass better than any machine I ever worked, and I consider it the best machine in use.

Yours respectfully,
ROBERT BUTLAND.

Baldersby Park Gardens, near Thirsk.

SIR,—Your Lawn Mower gives every satisfaction. It cuts long and wet Grass better than any machine with which I am acquainted, requires less draught, and cuts closer to a pedestal or a border.

Yours truly,
W. MEREDITH, Gr. to the Viscountess Downe.

Address—WILLIAM PARKINSON, RIPON, YORKSHIRE.

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RUSSIA MATS.—A large stock of Archangel and Petersburg, for Covering and Packing. Second sized Archangel, 100s.; Petersburg, 60s. and 80s.; superior close Mat, 45s., 50s., and 55s.; packing Mats, 20s., 30s., and 35s. per 100; and every other description of Mat at equally low prices, at

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E. T. ARCHER'S "FRIGI DOMO."—Patronised by Her Majesty the Queen for Windsor Castle and Frogmore Gardens, the late Sir Joseph Paxton, and the late Professor Lindley, &c.

MADE of PREPARED HAIR and WOOL.

A perfect non-conductor of heat or cold, keeping a fixed temperature where it is applied. A good covering for Pits and Forcing Frames.

PROTECTION from COLD WINDS and MORNING FROSTS.

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"FRIGI DOMO" CANVAS.

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ELISHA T. ARCHER, only Maker of "Frigi Domo," Stanstead and Brockley Roads, Forest Hill, London, S.E.; and of all Florists and Seedsmen. All goods carriage paid to London.

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The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."

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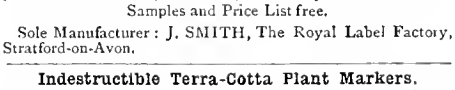
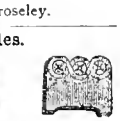


THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.



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ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3s. per square yard upwards. Pattern Sheets, of plain or more elaborate designs, with prices, sent for selection.

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F. ROSHER AND CO., Brick and Tile Merchants.

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A liberal Discount to the Trade.

MR. MECHI'S ADDRESS to his OLD FRIENDS and CUSTOMERS and to the PUBLIC:—

"As it as been erroneously supposed by some that I am no longer interested in my London business, I think it desirable to state that I continue to carry it on as energetically, and, I trust, as satisfactorily to the public as formerly, assisted by my only son, who will in due time succeed me. It is now forty-nine years since I first commenced business in Leadenhall Street, and what changes have taken place! Then everybody shaved, and my razor and razor-strop trade was immense; now moustache and beard are the order of the day, and the razor and strop trade is comparatively defunct. Then there were no railways, so people stayed at home and used wooden dressing-cases; now everybody travels by rail, and we have Dressing Bags to suit the altered conditions. Forty-nine years ago the poor geese supplied our pens, and many a now rich merchant in the City will remember the quality of Mechi's shilling penknives; but steel pens have extinguished the penknife trade and the penmaking machines, and the geese are in peace, except at Michaelmas. In fact, steam has altered, and, I may safely say, improved everything, and has made us a nation of travellers both by land and sea. I wonder how much time is now occupied in reading the steam-worked press, and how much less time is occupied in sipping port wine, as we used to do forty-nine years ago when we could not travel? Steam will make our 4 lb. loaves cheaper some day, just as it has converted calico from 2s. 6d. to 6d. or less per yard. Then, again, a letter which used to cost 6s. 6d. to Cork, is now carried for a penny. Sir Rowland Hill richly deserves a monument. But to return to business. Forty-nine years ago, when I first commenced on a small scale, I made it an axiom that what I sold should be good and useful, and I believe thousands who used the Strop and Paste, which I personally invented, can testify to this; in fact, it was sometimes complained of that I stamped on my razors, 'Exchanged if not approved.' I have never, and shall never, so long as I live, deviate from that principle, because it is the true means to retain and increase one's connection. I devoted my attention especially to the quality and convenience of arrangement in the Dressing Bag and Dressing Case Department, and in the tasteful selection of articles suitable for presentation, as well as in the matter of Despatch Boxes and Writing Cases. Although both razors and penknives have 'gone out,' our sportsmen remain, and 'Sporting Knives' form one of our special departments. I feel firmly convinced that there is no fear of the departure of knives and forks, or dinners, so we make this an important department in quality and price. In conclusion, I ask no favours, but simply desire that my customers should compare the quality and price of my wares with those of other dependable establishments, and form their own conclusions. Most of my worthy assistants and workmen have been nearly forty years in my service, and long ago learned that civility and attention to our customers are as important as good quality in the articles sold. Illustrated Catalogues will be forwarded post-free on application."

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By DRAINAGE, ENCLOSING, CLEARING, and the ERECTION of FARM BUILDINGS and COTTAGES.

The Land, Loan, and Enfranchisement Co.

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1st.—To the OWNERS of SETTLED and OTHER ESTATES, for the Erection of Farm Buildings and Cottages, and for the Drainage, Irrigation, Enclosing, Clearing, and General Improvement of Landed Property in any part of the United Kingdom.

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The amount borrowed, with the expenses, would be charged on the estate benefited, and repaid by a rent-charge, terminating in twenty-five years.

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GARDEN NECESSARIES, consisting of ARCHES, BASKETS, FLOWER STANDS, WIREWORK, &c., at WILLIAM S. BURTON'S.

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To cut 6 inches	.. £1 5 0	To cut 10 inches	.. £3 10 0
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Suitable for a Lady.

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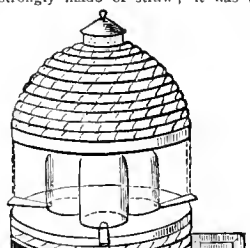

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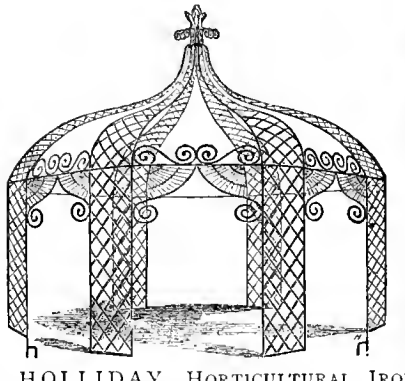

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Manufactures—FLOWER STANDS, BASKETS, TRELLIS for Creepers, ESPALIERS, WALL WIRING for Fruit Trees, ARCHWAYS, COVERED-WAYS, ROSERIES, WIRE FENCING, &c.; FOUNTAINS and WATER CONDUITS for Garden Decoration.

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Forming the most efficient Strained Iron Fencing known for agricultural and general purposes.

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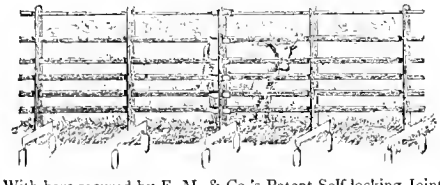

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FOR TRAINING PEAS, INSTEAD OF STICKS.
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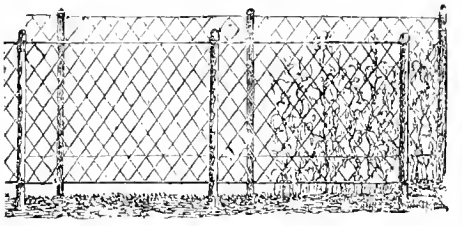

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NEW PATTERN, GALVANISED,
8s. 6d. per dozen, 3 feet lengths.
Five per cent. discount allowed for prompt cash on Orders amounting to 20*s.* and upwards.
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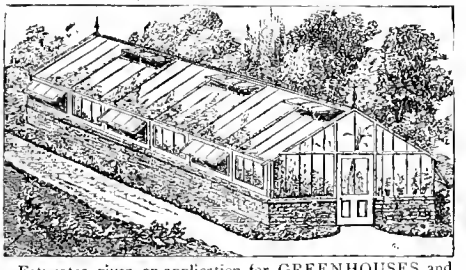

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Portable Box with One Light, 6 feet by 4 feet, glazed good 16-oz. sheet glass, painted four coats, and packed ready for use	35 0
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Metallic Hothouse Builder to Her Majesty.
HENRY HOPE
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HOTHOUSE BUILDER and HOT-WATER APPARATUS ENGINEER.
55, Lionel Street, Birmingham. Established A.D. 1813
BOOKS of DESIGNS, 5*s.* each.
☞ The Extensive Ranges of Metallic Hothouses in the Royal Gardens, Windsor and Osborne, were executed at this Establishment.

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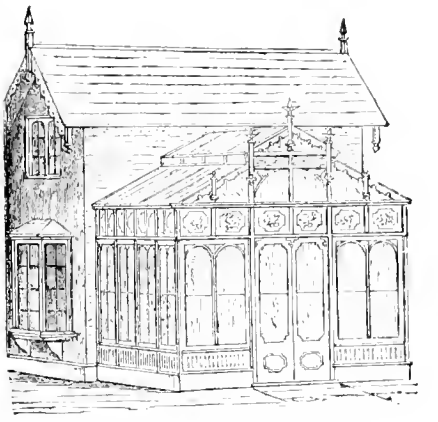
Estimates given to Architects' Plans, or to Rough Sketches, with Sizes, &c.



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A PAMPHLET with Illustrations, Testimonials, &c., and PRICE LISTS of Sir J. Paxton's Hothouses, for 3*d.* post free.
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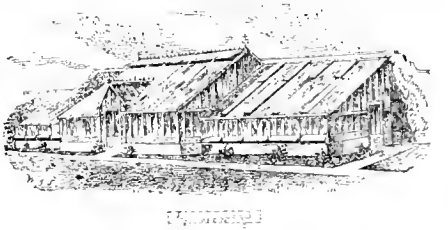

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Hot-Water Apparatus Fixed in any part of the Kingdom, and guaranteed.
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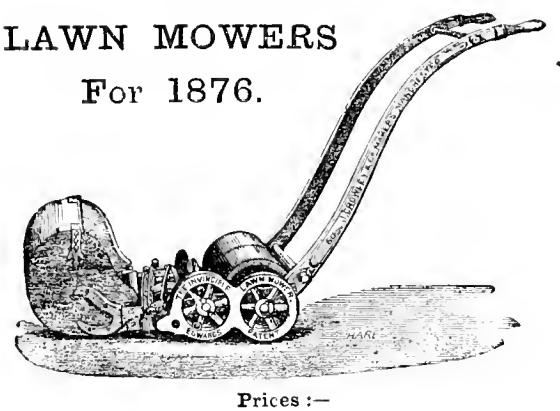
LAWN MOWERS
For 1876.



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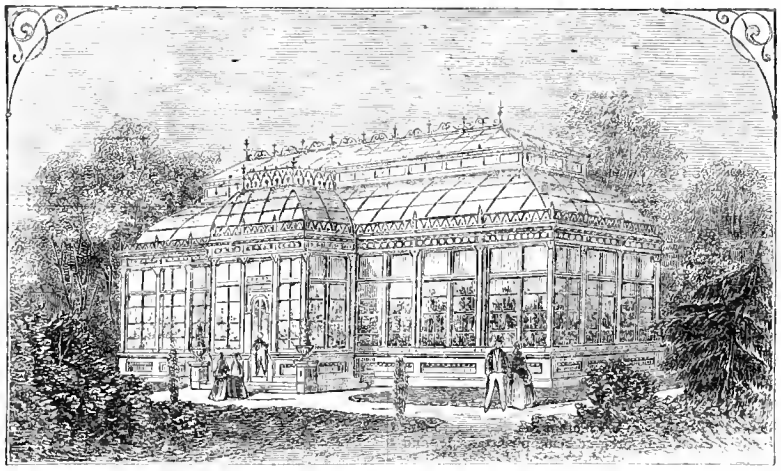

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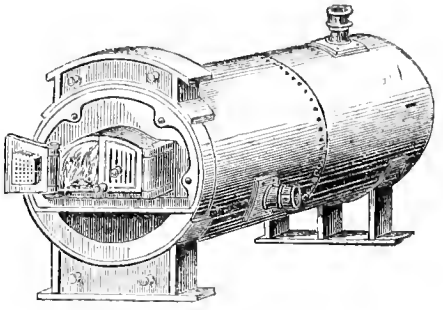

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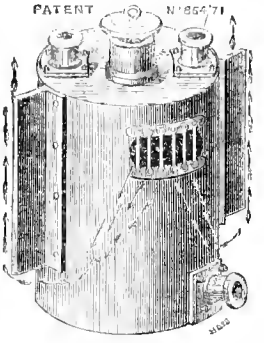

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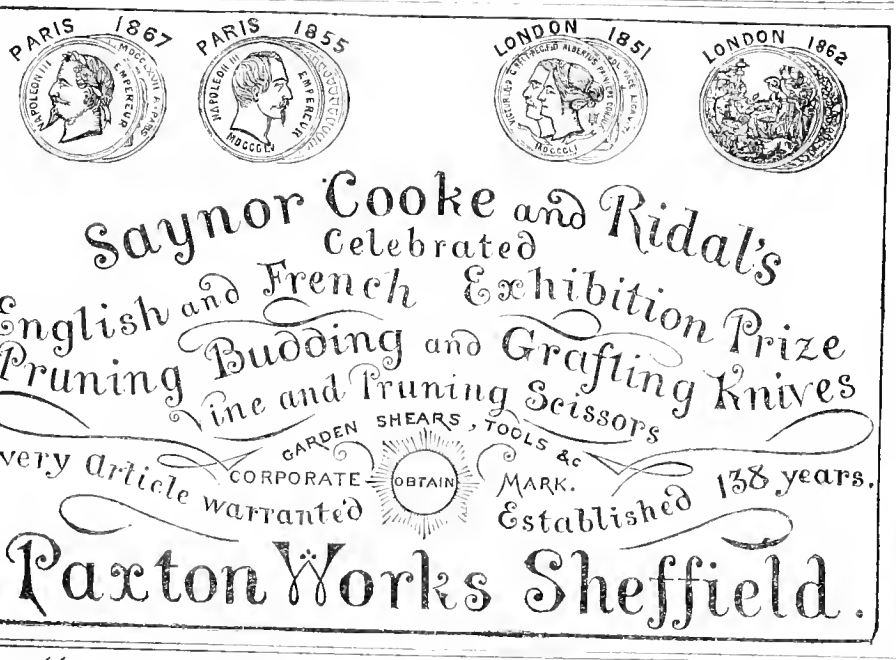

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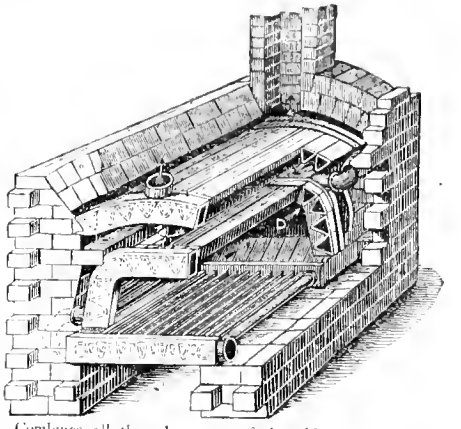

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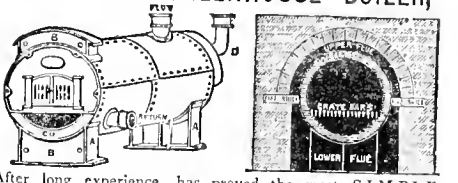

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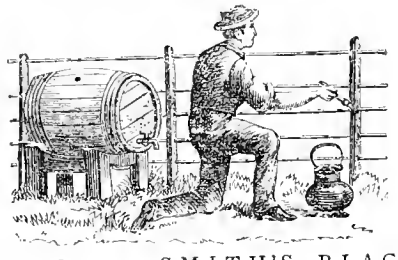

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for MONDAY, May 8.

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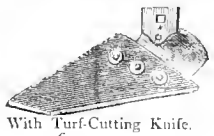

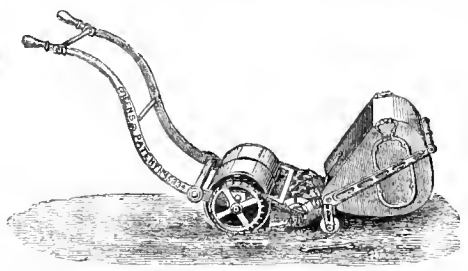

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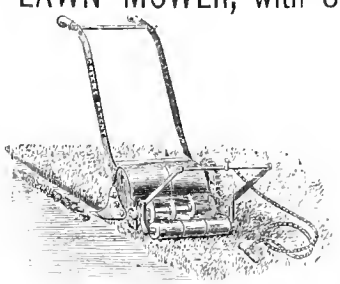

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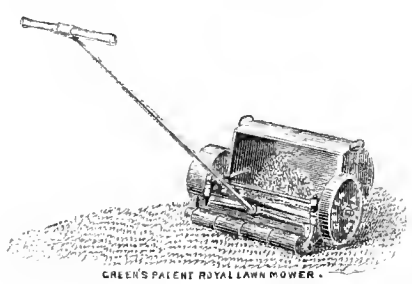

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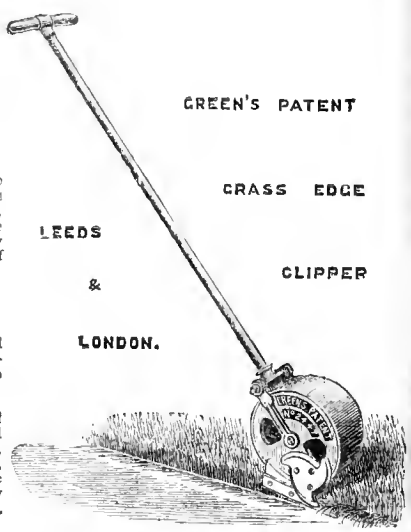

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Subscribers who wish to have "The Gardeners' Chronicle" forwarded DIRECT FROM THE OFFICE are respectfully informed that payment MUST BE MADE IN ADVANCE.

ROYAL BOTANIC SOCIETY, Gardens, Regent's Park, N.W.
SUMMER EXHIBITIONS of PLANTS, FLOWERS, and FRUIT, WEDNESDAYS, May 24, June 21 Tickets to obtained at the Gardens only, by Vouchers from Fellows of the Society, price 5s. each, or on the days of Exhibition, 7s. 6d. each. Gates open at 2 o'Clock.

ROYAL BOTANIC SOCIETY, Gardens, Regent's Park, N.W.
CONSERVATORY FÊTE and EXHIBITION of FLOWER BEDS, THURSDAY, June 1. As the space is limited, it is requested that all entries be made at an early date. SCHEDULES of PRIZES, &c., are now ready, and can be obtained by post or otherwise. W. SOWERBY, Secretary.

Notice.
THE NEXT GRAND FLOWER SHOW will take place at the ROYAL AQUARIUM SUMMER and WINTER GARDEN on MAY 30 and 31, when the grandest display of Orchids ever seen in Europe will be exhibited.
Royal Aquarium, Westminster, May, 18.

LINNEAN SOCIETY, Burlington House, Piccadilly, W.
The ANNIVERSARY MEETING of this Society will be held here, on WEDNESDAY, the 24th of this month, at 3 o'clock precisely, for the Election of a Council and Officers for the ensuing year. FREDERICK CURREY, Sec.

ROYAL MANCHESTER BOTANICAL and HORTICULTURAL SOCIETY.
Patron—Her Majesty the Queen.
The GRAND NATIONAL HORTICULTURAL EXHIBITION of 1876 will open on June 2, in the Society's Gardens, Old Trafford. Entries close on May 24
By order of the Council.
BRUCE FINDLAY, Curator and Secretary.
Royal Botanic Gardens, Old Trafford.

SPALDING HORTICULTURAL and HORSE SHOW, June 21 and 22—PRIZES amounting to £500. Horticultural Entries close June 16, and Cottagers' June 17. Schedules on application to
GEORGE KINGSTON, Secretary.

THE WISBECH GREAT ANNUAL ROSE SHOW and HORTICULTURAL EXHIBITION will be held in the Grounds of Colville House, on THURSDAY, June 29. All Exhibitors compete without entrance fees. Schedules of Prizes and all information on application to
CHARLES PARKER, Hon. Sec.
Wisbech.

TUNBRIDGE WELLS HORTICULTURAL SOCIETY.
The ANNUAL GRAND EXHIBITION of FLOWERS, PLANTS and FRUIT, will be held on FRIDAY, July 7, in the Grounds adjoining the Calverley Hotel. Prizes open to all England. Schedules may be obtained of, and Subscriptions paid to Mr. E. F. LOOF, Parade, Tunbridge Wells.
Arrangements having been made for the exhibition of articles connected with Flowers, Fruit, and Gardening, an early application for space to the Secretary is requested, the amount being limited.

CARTER'S GRASS SEEDS for Lawns and Parks, 20s. per bushel.

CARTER'S GRASS SEEDS for Permanent Pastures, 22s. 6d. to 36s. per acre.

CARTER'S GRASS SEEDS. Carriage Free. To suit all Soils.

CARTER'S GRASS SEEDS for Renovating Meadows and Lawns, 18s. to 20s. per bush.

CARTER'S, THE QUEEN'S SEEDSMEN, 237 and 238, High Holborn, W.C.

CORYPHA AUSTRALIS.—Fresh Seed just arrived in excellent condition. Price per 1000, 5000, 10,000, or 20,000 on application.
WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Lilium auratum.
B. MALLER, Lewisham, S.E., begs to offer the above, started into growth (No. 48 pots), at 12s. and 18s. per dozen.

Tea-scented Roses in Pots.
WILLIAM FLETCHER offers the above, good, strong healthy plants, now coming into bloom; also new varieties of this and last year. Prices on application.
Ottershaw Nursery, Chertsey.

LETTY COLES.—This Rose is now being sent out; plates may be had for eighteen stamps. The finest Tea Rose sent out for years.
JOHN KEYNES, Nurseryman, Salisbury.

TEA-SCENTED ROSES.—Strong plants, of best varieties, for Bedding or General Decoration, at 12s. per dozen, 80s. per 100. Immense Stock of GREENHOUSE and BEDDING PLANTS, which are worth growing. See CATALOGUE, free on application.
WILLIAM KNIGHT, Floral Nursery, Hailsham, Sussex.

60,000 Roses in Pots.
ROSES for BEDDING, at 12s. to 18s. per dozen, and 80s. per 100; splendid plants.
WM. WOOD and SON, The Nurseries, Maresfield, Uckfield, Sussex.

Plant Catalogue.
CHARLES TURNER'S DESCRIPTIVE LIST of PLANTS for the Season, including several new varieties now offered for the first time, is ready, and may be had on application.
The Royal Nurseries, Slough.

Notice.—Seeds, Seeds.
WM. CUTBUSH and SON can confidently recommend their stock of Garden and other Seeds. CATALOGUES now ready, which contain every requisite, at fair prices, post-free on application.
Highgate, London, N.

Carpet Bedding.
G. NUNNS, Nurseryman, Beckenham, Kent, offers fine established plants of ECHEVERIA SECUNDA GLAUCA and E. GLAUCO-METALLICA. Price per 100 on application.

BEDDING PLANTS in Variety.—Good, hardened off, at 12s., 16s., and 20s. per 100. GERANIUMS, Magenta King and Black Prince, 3s. 6d. per dozen; Curiosity and Happy Thought, 1s. each FUCHSIAS in variety, cheap
W. GROVE, Tupsley, Hereford.

Verbenas, Verbenas.
JOHN SOLOMON offers White, Scarlet, Purple, Pink, Crimson, Rose, and other mixed sorts, good strong spring-struck cuttings, well rooted, at 6s. per 100, 50s. per 1000, package included. Cash to accompany all orders.
Islington Nursery, Park Street, Islington, N.

VERBENAS, VERBENAS, VERBENAS.—White, Purple, Scarlet, and Pink; also twelve extra choice named varieties, strong, healthy-rooted cuttings, perfectly free from disease, 6s. per 100, 50s. per 1000, for cash.
H. BLANDFORD, The Dorset Nurseries, Blandford.

VERBENAS: 20,000 clean, healthy-grown plants of all the leading varieties, established in single pots; price, per 100 or 1000, to
GEO. COOPER, Rose Hill Nursery, Derby.

Verbenas, Verbenas, Verbenas.
WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

VERBENAS for the MILLION.—Purple King, Crimson, Scarlet, White, Pink, and other varieties, spring-struck, 6s. per 100. Strong plants of all the above colours, well hardened, 8s. per 100. Package free for cash.
S. BIDE, Alma Nursery, Farnham.

JOSEPH LEIGH can still supply Plants as Advertised in the *Gardeners' Chronicle* of May 6.
Sandy Lane Nursery, Lowton, near Newton-le-Willows.

SUTTON'S GRASS SEEDS for PASTURES, 22s. 6d. to 36s. per Acre. Carriage free.

SUTTON'S GRASS SEEDS for PARK GROUNDS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for GARDEN LAWNS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for CROQUET GROUNDS, 20s. per Bushel. Carriage free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

GARDENIA INTERMEDIA, in 48's, well set with bloom-buds, 18s. to 30s. per dozen.
JOHN REEVES, Nurseryman, Acton, W.

PASSIFLORA CŒRULEA, seedlings 2 to 3 inches high, in seed pans, 2s. per dozen.
OSBORN AND SONS, Fulham Nursery, London, S.W.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

EVERGREEN OAKS.—A few hundreds, 3 to 6 feet, in pots, 50s. to 150s. per 100. May be planted successfully in exposed situations in May. Apply to
CHARLES B. SAUNDERS, Nurseryman, Jersey.

CENTAUREA CANDIDISSIMA, in single pots, nice plants, 20s. per 100, package included. Not less than 25 at the above price. Half to quarter specimens.
KALOSANTHES COCCINEA, well set for flower, 3s. 6d., 5s., to 7s. 6d. each.
JOHN HOUSE, Eastgate Nurseries, Peterborough.

Alternantheras, Alternantheras.
ALTERNANTHERAS—30,000 amabilis, paronychioides, magnifica, paronychioides major, 6s. per 100; amœna spectabilis, 8s. per 100. Package included for cash.
C. ALLEN, Nurseryman and Seedsman, Stone Hills, Heigham, Norwich.

AZALEAS.—For Sale, eight or ten fine specimens, fit for Exhibition, good varieties. Names and sizes of plants on application to
W. GALE, Oakwood, Bath.

Hardy Perennials Illustrated.
THOS. S. WARE'S CATALOGUE of the above for 1876, including New, Rare, and Choice Alpines, Herbaceous Plants, Aquatics, Bog Plants, and a few Bulbs, is now ready, free on application.
Hale Farm Nurseries, Tottenham, London.

Fruiting and Planting Vines.
THE COWAN PATENTS' COMPANY (late Meredith) have still on hand a good selection of the above. Catalogues and prices on application. They can also offer good Fruiting and Succession PINES.
The Vineyard, Garston, near Liverpool.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

ROBINSON'S CHAMPION OX CABBAGE plants, strong, 2s. 6d. per 1000.
THOMAS PERKINS, 42, Drapery, Northampton.

Mangel and Swede.
JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself.
Bardney Manor, Lincoln.

To the Seed Trade.
H. AND F. SHARPE'S special SPRING CATALOGUE of home-grown MANGEL WURZEL, TURNIP, and other AGRICULTURAL and GARDEN SEEDS, is now ready, and will be forwarded on application.
Seed Growing Establishment, Wisbech.

To the Trade.
ASPARAGUS, 1-yr., 2-yr., and 3-yr. TROPÆOLUM CANARIENSE.
JAMES BIRD, American Nurseries, Downham.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS: also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.
Mr. WEBB, Calcot, Reading.

Hothouses, Hot-water Apparatus, &c.
HALLIDAY AND CO., Hothouse Builders and Hot-water Apparatus Manufacturers. Estimates and Plans free. Best Construction! Best Materials! Best Workmanship! Catalogues free,
Offices: 22, Barton Arcade, Manchester.

SALES BY AUCTION.

Hornsey, N

IMPORTANT ANNUAL SALE of about 50,000 unusually well grown GREENHOUSE and BEDDING PLANTS in rich assortment, consisting of Verbenas, Heliotropes, Petunias, Ageratums, Alternantheras, Gazanias; about 25,000 choice Geraniums, the whole of which are wintered plants, comprising Mrs Pollock, Lady Cullum, Vesuvius, Christine, Madame Vaucher, and other well known varieties; 4000 Lobelias of sorts, 3000 Calceolarias of sorts, together with some choice Greenhouse Plants in bloom, comprising Spiræas, Pelargoniums, Fuchsias, Ferns, Stocks, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, the Hornsey Nursery, Hornsey, N., close to the Hornsey Station, Great Northern Railway, on THURSDAY, May 25, at 12 o'Clock precisely.

On view day prior, and Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Upton Nursery, Ilford Road, Upton.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, by order of Mr. Reid, on the Premises as above, on SATURDAY, May 27, at 1 o'Clock precisely, about 25,000 BEDDING PLANTS of the usual assortment.

On view day prior, and Catalogues had on the Premises; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

N.B. The NURSERY to be LET or SOLD. Apply to the Auctioneers as above.

Willesden, N.W.

CLEARANCE SALE.—By order of the Executors of the late Mr. Chapman.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, close to the Chapel as above, on MONDAY, May 29, at 1 o'Clock precisely, about 7000 BEDDING PLANTS of the usual assortment, 3 GREENHOUSES, 13 PITS, 320 feet HOT-WATER PIPING, and other effects.

On view the day prior, and Catalogues had on the Premises; and of the Auctioneers, 98, Gracechurch Street, City, and Leytonstone, E.

SALE this DAY at HALF-PAST TWELVE PRECISELY.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on SATURDAY, May 20, at half-past 12 o'Clock precisely, a COLLECTION of ESTABLISHED ORCHIDS, the Property of a Gentleman giving up their culture; several importations of Orchids, 900 Odontoglossum crispum in fine condition, and some bulbs of Lilium auratum rubro vittatum.

On view the morning of Sale, and Catalogues had.

Imported and Established Orchids, Tree Ferns, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, May 23, at half-past 12 o'Clock precisely, a COLLECTION of ESTABLISHED ORCHIDS, in the best possible condition; importations of Dendrobium linuflarum, Vanda cœrulea, Cattleya superba, Aerides Fieldingii, and other choice sorts; a fine importation of Dicksonia Youngiana, in splendid condition; importations of Orchids from Mexico and India, PALM SEEDS, &c.

On view the morning of Sale, and Catalogues had.

Pine-apple Nursery, Edgware Road, St John's Wood.
UNRESERVED SALE OF PLANTS.

MR. J. C. STEVENS will SELL by AUCTION, on the Premises, Pine-apple Nursery, Edgware Road, W., on WEDNESDAY, May 24, and THREE following days, at 1 o'Clock precisely each day, the Second Portion of the valuable Collection of STOVE and GREENHOUSE PLANTS, and a large quantity of BEDDING PLANTS, &c.

On view two days prior and mornings of Sale, and Catalogues had on the Premises, and of Mr. J. C. Stevens, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, May 26, at half-past twelve o'Clock precisely, a SMALL COLLECTION of ESTABLISHED ORCHIDS, including some of the choicest Cattleyas, Sacculabiums, Aerides, Odontoglossums, Masdevallias, Dendrobiums, Cypripediums, &c.

On view the morning of Sale, and Catalogues had.

Disas.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, May 26, at half-past 12 o'Clock precisely, a quantity of DISA GRANDIFLORA and DISA HERSCHELLII, just imported from Table Mountain

On view the morning of Sale, and Catalogues had.

Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, May 26, at half-past 12 o'Clock precisely, VARIOUS IMPORTED ORCHIDS, including Odontoglossum vexillarium, Trichopilia rostrata, Odontoglossum cirrhosum, Oncidium Weltonii, the rare and handsome Cœlogyne barbata, Stenia fimbriata, Uropedium Lindeni, the Violet-scented Dendrobium aureum, and various other choice species.

On view the morning of Sale, and Catalogues had.

Stapleford, Cambridgeshire.

MESSRS. MANN AND RAVEN have received instructions from the Executrix of the late Mr. Richard Headly, to offer for SALE by AUCTION, on TUESDAY, May 23, at 2 o'Clock in the afternoon, the entire valuable and justly celebrated Collection of TULIPS, RANUNCULI, &c., together with Stages, Shading, Show Boxes, Boards, Cabinets, and other requisites for the Garden and Show room.

Catalogues may be had of the Auctioneers, Cambridge.

Stapleford is within five minutes' walk of the Shelford Station on the Great Eastern Railway.

Valuable Stove and other Plants and Orchids.

MESSRS. HARD, VAUGHAN AND JENKINSON will SELL by AUCTION on THURSDAY next, May 25, at 3 o'Clock, on the Premises, "Lynton House," Clapham Common (east side), a small COLLECTION of Valuable and Rare ORCHIDS, STOVE, and other PLANTS.

On view by Cards, and Catalogues of the Auctioneers, 62, Moorgate Street, E.C., and Greenwich, Kent, S.E.

Highly Important Sale of Specimen Plants, Orchids, and AMARYLLIS at MEADOWBANK.

MR. DAVID MITCHELL, AUCTIONEER and VALUER, has been instructed by Mr James Anderson to SELL, on THURSDAY and FRIDAY, May 25 and 26 next, a portion of the highly important Collection of ORCHIDS, AMARYLLIS, NERINES, extraordinary fine specimen AZALEAS and HEATHS, as well as ORNAMENTAL FOLIAGE PLANTS in great variety, all of which are in the finest possible health, and many of them blooming or coming into bloom. The Amaryllis are beyond question the finest breed in the kingdom, and, as many of them will be in flower, it will be a rare opportunity for purchasers. Descriptive Catalogues are now ready, and may be had either from

Mr. DAVID MITCHELL, Auctioneer, Hamilton; or from Mr. ANDERSON, at the Nurseries, Meadowbank. Nurseries within three minutes' walk of the Uddingston Station, Caledonian line.

Hamilton, May 5, 1876.

TO BE SOLD, by PRIVATE CONTRACT, the GOLDEN CROSS NURSERIES, with extensive Glasshouses, Dwelling-house, &c., situate near Stroud, Gloucestershire. Apply to

RESTALL AND FORD, Auctioneers, Stroud.

TO BE SOLD, a FLORIST'S BUSINESS. Lease eighteen years. Six Greenhouses, well stocked. Price £150 if taken at once.

E. WRIGHT, Estate Agent, Franklin Road, Brighton, Sussex.

Winter Gardens, Southport

THE GRAND HORTICULTURAL EXHIBITION will open JULY 3. ENTRIES close JUNE 27.

Special PRIZES for 24 CUT ROSES, to Nurserymen only. First prize, by the Mayor of Southport, £5 5s.; 2d prize, by Mr. Brabham, Horticultural and Floral Wireworker, Liverpool, £3 3s.

A CAMPBELL, Horticultural Superintendent.

SANDOWN PARK CLUB. GRAND FLOWER and FRUIT SHOW.

A GRAND FLOWER and FRUIT SHOW, under distinguished Patronage, will be held in Sandown Park, Esher, Surrey, on FRIDAY and SATURDAY, July 7 and 8, when upwards of £350 will be given in Prizes. Schedules are now ready, and may be had on application to

JOHN WILLS, Royal Exotic Nursery, Onslow Crescent, South Kensington, S.W.

J. WHITTAKER BUSHE, General Manager.

Wellingborough.

GRAND SHOW of FLOWERS, FRUITS, VEGETABLES, &c., under distinguished Patronage.

A Grand Flower, Fruit, &c. Exhibition (open to all England) will be held in Mr. Banks' Fields, on FRIDAY and SATURDAY, July 7 and 8, when Prizes amounting to £180 will be offered for competition. The Band of the Coldstream Guards is engaged for Friday. Schedules and other information may be obtained of the Hon. Sec.,

W. B. PARKE.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION, for the relief of decayed Farmers, their Widows and Orphans.

Patron—HER MAJESTY THE QUEEN.

President—His Grace the Duke of RICHMOND AND GORDON.

Allowances to Pensioners:—

Married	£40 per annum.
Male	26 "
Widows and unmarried Orphan Daughters	20 "

Every information to be had of the SECRETARY, by whom Subscriptions and Donations will be thankfully received.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.—The SIXTEENTH ANNIVERSARY FESTIVAL, in aid of the Funds of the Institution, will take place at Willis's Rooms, on WEDNESDAY, May 24, at 6 o'Clock,

The RIGHT HON. LORD CHESHAM in the Chair.

Dinner Tickets 21s., application for which should be made to the SECRETARY, not later than May 22.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.—The ANNUAL GENERAL MEETING will be held at Willis's Room, St. James's, on WEDNESDAY, June 21, at 11 o'Clock precisely; and the ELECTION of PENSIONERS will take place on the same day at 11.30 o'Clock.

All Subscriptions shall be deemed payable on January 1 in each year; and no Contributor shall vote in respect of an Annual Subscription while the same is in arrear.

Offices of the Institution—

No. 26, Charles Street, St. James's, London, S.W.

BATH and WEST of ENGLAND SOCIETY (Established 1777) and SOUTHERN COUNTIES ASSOCIATION.

Patron H.R.H. the PRINCE of WALES, K.G.

President The Earl of DUCIE.

HEREFORD MEETING, 1876.

GREAT EXHIBITION of LIVE STOCK, POULTRY, MACHINERY, IMPLEMENTS, WORKS of ART, and HORTICULTURAL SPECIMENS, June 5, 6, 7, 8 and 9.

JOSIAH GOODWIN, Sec. 4, Terrace Walk, Bath.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 98, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

To the Trade.

TEA-SCENTED ROSES, in Pots.—Magnificent Plants, of best varieties only, at 9s. per dozen, or 60s. per 100. An immense Stock of all other plants worth growing. Catalogue free.

WILLIAM KNIGHT, Floral Nursery, Hailsham, Sussex.

Double Pyrethrums.

THOMAS S. WARE recommends the immediate planting of the above and other Hardy Florists' Flowers, including DELPHINIUMS, PHLOXES, DIANTHUS, PENTSTEMONS, &c. For descriptions and prices see New Spring CATALOGUE, free on application.

Hale Farm Nurseries, Tottenham, London.

Pelargoniums, Pelargoniums.

JAMES HOLDER'S unrivalled Collection—strong healthy Plants, Show, French, and Fancy varieties, at 35s. per 100, cash, hamper and packing included. Extra strong plants, in 48's and 32's, at 9s. and 12s. per dozen, basket and packing extra.

Crown Nursery, Reading.

Ferns.

W. AND J. BIRKENHEAD devote almost the whole of their attention to the Cultivation of BRITISH and EXOTIC FERNS. Their Collection consisting of many thousands, they are enabled to offer them by the dozen or hundred, at most reasonable Prices. CATALOGUES sent on application.

Fern Nursery, Sale, near Manchester.

Bedding Plants.

F. AND A. SMITH offer the above in strong, hardened Plants, for immediate effect, in all the best varieties. Priced LIST upon application.

The Nurseries, West Dulwich, S.E.

N.B.—Their General Plant CATALOGUE is Now Ready.

Cinerarias.

MESSRS. JOHN STANDISH AND CO.'S strain of Cinerarias is now acknowledged to be the finest in the Kingdom. Carefully saved Seed may now be had post-free at 2s. 6d., 3s. 6d. and 5s. per packet. Wholesale price to the Trade on application.

Royal Nurseries, Ascot, Berks.

CATALOGUE (1876) of DUTCH FLOWER-ROOTS and BULBS Cultivated and Sold by M. C. ALKEMADE AND SON, FLORISTS, Zeestraat, at Noordwijk-Binnen, near Haarlem, Holland, may be had free by post on application.

FOR SALE.—Large SPECIMEN PLANTS, established in large tubs and pots, Gardenias, Stephanotis floribunda, Eucharis amazonica, Azaleas, Camellias, Marechal Niel and other Roses, &c.

The NURSERY, with nineteen years' unexpired Lease, to be DISPOSED OF, with or without the stock of Plants. For further information apply to

Mr. FARRAND'S Paper Mills, Ilford, Essex.

1876—New Roses—1876.

A SELECTION of the very FINEST NEW VARIETIES for this year, 24s. to 30s. per dozen. Exceedingly strong, robust plants in pots; can be planted out at any time.

JAMES DICKSON AND SONS, Newton Nurseries, Chester.

GIANT ASPARAGUS PLANTS, the best that money can procure, all certain to grow, 2s. 6d. per 100. This delicious vegetable does not require half the expense usually incurred in planting it. See RICHARD SMITH'S SEED LIST for 1876.

Extra strong SEAKALE, 2s. per dozen

RICHARD SMITH, Nurseryman, Worcester.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000; and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.

Wonersh Nursery, Guildford, Surrey.

E. G. HENDERSON AND SON. SEEDS—EXTRA QUALITY.

PRIMULA SINENSIS FIMBRIATA, 2s. 6d. and 5s. per packet

" " FLORE PLENA, 2s. 6d and 5s per packet.

CINERARIA and CALCEOLARIA, 2s. 6d. and 5s. per packet.

CYCLAMEN PERSICUM, choice quality, 1s. and 2s. 6d. per packet.

" " double-flowered, 2s. 6d. and 5s. per packet.

Wellington Nursery, St. John's Wood, N.W.

NEW STRIPED ROSE—BEAUTY OF GLAZENWOOD.—"A Rose of golden-yellow, striped and flaked with scarlet or vermilion, sounds like a dream or a fairy tale. It is nevertheless a reality." H. CURTIS, in the *Garden*. Full particulars free by post.

LEWIS WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

To the Trade.—New Cineraria Seed Crop, 1876.

F. AND A. SMITH can supply the above (saved from their unrivalled strain) by weight, or in 1s., 2s. 6d., and 5s. packets. Terms on application.

The Nurseries, West Dulwich, S.E.

N.B.—Their New General CATALOGUE is Now Ready.

NEW PLANTS of 1875.—CUTTINGS, safe and free per post.—Twelve new Dahlias, 4s.; 12 new Fuchsias, 2s.; twelve new double Petunias, 3s.; 12 new Verbenas, 2s.; 12 new Show Pansies, 3s.; 12 new fancy do., 3s.; 12 new large-flowered Pelargoniums, 4s.; 12 new Fancy do., 4s.; 12 best new Zonals, 3s. All true to name.

J. JACKSON, Nursery, Kidderminster.

New Zealand Native Shrub and Tree Seed.

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ROYAL AQUARIUM

AND SUMMER AND WINTER GARDEN.

SECOND GREAT FLOWER SHOW,

TUESDAY and WEDNESDAY, MAY 16 and 17.

AWARDS OF THE JUDGES.

CLASS 1.—12 ROSES, in Pots, distinct. (Open)
1st Prize, Mr. C. Turner, Royal Nursery, Slough, £25.
2d, Messrs. Paul & Son, Old Nurseries, Cheshunt, N., £20.
3d, Mr. E. Ellis, Gr. to J. Galsworthy, Esq., Coombe Leigh, Kingston Hill, Surrey, £15.

CLASS 2.—6 ROSES, in Pots, distinct. (Amateurs.)
1st, Mr E. Ellis, Gr. to J. Galsworthy, Esq., Coombe Leigh, Kingston Hill, Surrey, £10.
2d, Mr. J. W. Moorman, Gr. to the Misses Christy, Coombe Bank, Kingston, £6.
3d, Mr. J. James, Gr. to W. F. Watson, Esq., Redlees, Isleworth, £4.
4th, Mr. T. N. Penfold, Gr. to the Rev. A. H. Bridges, Beddington House, Croydon, £3.

CLASS 3.—20 ROSES, distinct, in Pots not exceeding 8 inches in diameter. (Open)
1st, Messrs. Paul & Son, Old Nurseries, Cheshunt, £18.
2d, Mr. C. Turner, Royal Nursery, Slough, £12.
3d, Messrs. H. Lane & Son, The Nurseries, Great Berkhampstead, £8.
Extra Prize, Mr. J. W. Moorman, Gr. to the Misses Christy, Coombe Bank, Kingston.

CLASS 4.—24 ROSES, Cut Blooms, distinct. (Open.)
1st, Messrs. Paul & Son, Old Nurseries, Cheshunt, £2 10s.
2d, Mr. C. Turner, Royal Nursery, Slough, £2.
3d, Mr. J. W. Moorman, Gr. to the Misses Christy, Coombe Bank, Kingston, £1 10s.

CLASS 5.—12 ROSES, Cut Blooms, distinct. (Amateurs.)
1st, Mr. E. Ellis, Gr. to J. Galsworthy, Esq., Coombe Leigh, Kingston Hill, Surrey, £1.
2d, Mr. J. W. Moorman, Gr. to the Misses Christy, Coombe Bank, Kingston, 15s.

CLASS 6.—12 CLEMATIS, distinct. (Open)
1st, Messrs. G. Jackman & Son, Woking Nursery, Surrey, £8.

CLASS 7.—9 GREENHOUSE AZALEAS, distinct, in Pots not exceeding 16 inches in diameter. (Open.)
1st, Mr. A. Ratty, Gr. to R. Thornton, Esq., The Hoo, Sydenham Hill, S.E., £3.
2d, Messrs. W. Cutbush & Son, The Nurseries, Highgate, N., £4.

CLASS 8.—6 GREENHOUSE AZALEAS, distinct, in Pots not exceeding 16 inches in diameter. (Amateurs.)
1st, Mr. G. Wheeler, Gr. to Sir F. H. Goldsmid, Bart., M.P., St. John's Lodge, Regent's Park, W. £6.
2d, Mr. A. Ratty, Gr. to R. Thornton, Esq., The Hoo, Sydenham Hill, S.E., £3.
3d, Mr. W. Smith, Gr. to A. Cooper, Esq., Park Road, Twickenham, £2.

CLASS 9.—6 GREENHOUSE AZALEAS, Standards, distinct. (Open.)
1st, Mr. C. Turner, Royal Nursery, Slough, £5.
2d, Mr. A. Ratty, Gr. to R. Thornton, Esq., The Hoo, Sydenham Hill, S.E., £3.
3d, Messrs. W. Cutbush & Son, The Nurseries, Highgate, N., £2.

CLASS 10.—12 CALCEOLARIAS, distinct. (Open.)
1st, Mr. J. James, Gr. to W. T. Watson, Esq., Redlees, Isleworth, £3.

CLASS 11.—18 HARDY PERENNIALS, in Flower, distinct, in Pots not exceeding 12 inches in diameter. (Open.)
1st, Mr. R. Parker, Exotic Nursery, Tooting, £5.
2d, Mr. W. P. Roberts, Gr. to W. Terry, Esq., Peterborough House, Fulham, £4.
3d, Mr. W. Elliott, Gr. to L. Clark, Esq., Hitherwood, Sydenham Hill, S.E., £3.
Extra Prize, Mr. R. Dean, Ranelagh Road, Ealing.

CLASS 12.—8 GOLD and SILVER TRICOLOR PELARGONIUMS, distinct. (Nurserymen.)
1st, Mr. H. Coppin, Nurseryman, Shirley, Croydon, Surrey, £10.
2d, Mr. W. Meadmore, The Nursery, Romford, £6.
3d, Mr. T. Pestridge, Boston Park Road Nursery, Brentford, £4.

CLASS 13.—6 GOLD and SILVER TRICOLOR PELARGONIUMS, distinct. (Amateurs.)
1st, Mr. W. North, Gr. to T. Hill, Esq., Cornwalls, Brentwood, £6.
2d, Mr. J. H. Hinnell, Gr. to T. A. Davis, Esq., Anglesea House, Surbiton, £4.
3d, Mr. R. Watson, Gr. to T. H. Bryant, Esq., Glencairn, Surbiton Hill, £2.

CLASS 14.—12 PLANTS, suitable for the Dinner-table, in Pots not exceeding 6 inches in diameter. (Open)
1st, Mr. W. Bull, King's Road, Chelsea, S.W., £6.
2d, Messrs. Rollisson & Sons, Tooting, Surrey, £4.
3d, Messrs. H. & G. Wright, The Nurseries, Lee, Kent, £2.
Extra Prize, Mr. T. Lambert, Gr. to H. W. Segelcke, Esq., Herne Hill, S.E.

CLASS 15.—12 NEW and RARE PLANTS, in or out of Flower. (Open)
1st, Mr. W. Bull, King's Road, Chelsea, S.W., £12.
2d, Mr. B. S. Williams, The Nurseries, Upper Holloway, N., £8.
3d, Messrs. Rollisson & Sons, Tooting, Surrey, £5.

CLASS 16.—6 NEW and RARE PLANTS, including ORCHIDS, never before exhibited in Europe. (Open)
1st, Mr. W. Bull, King's Road, Chelsea, S.W., £9.

CLASS 17.—6 DRACÆNAS, distinct. (Amateurs.)
1st, Mr. G. Legg, Gr. to S. Ralli, Esq., Cleveland House, Clapham Park, S.W., £5.
2d, Mr. S. Strahan, Gr. to P. Crowley, Esq., Waddon House, Croydon, £4.

CLASS 18.—12 DRACÆNAS, distinct. (Nurserymen.)
1st, Mr. W. Bull, King's Road, Chelsea, S.W., £12.
2d, Mr. B. S. Williams, The Nurseries, Upper Holloway, N., £8.
3d, Messrs. Rollisson & Sons, Tooting, Surrey, £6.
Extra Prize, Messrs. H. & G. Wright, The Nurseries, Lee, Kent.

CLASS 19.—12 STOVE and GREENHOUSE FERNS, in Pots not exceeding 10 inches in diameter. (Open.)
1st, Mr. B. S. Williams, The Nurseries, Upper Holloway, N., £8.
2d, Mr. W. Smith, Gr. to A. Cooper, Esq., Park Road, Twickenham, S.W., £5.
3d, Mr. G. Wheeler, Gr. to Sir F. H. Goldsmid, Bart., M.P., St. John's Lodge, Regent's Park, N.W., £3.

CLASS 20.—12 BUNCHES of HARDY HERBACEOUS CUT BLOOMS.
1st, Mr. R. Parker, Exotic Nursery, Tooting, £1.
2d, Mr. W. P. Roberts, Gr. to W. Terry, Esq., Peterborough House, Fulham, 10s.

CLASS 21.—6 SHOW AURICULAS, distinct. (Open.)
1st, Mr. C. Turner, Royal Nursery, Slough, 30s.
2d, Rev. H. H. Dombrain, Westwell Vicarage, Ashford, £1.
3d, Mr. J. James, Gr. to W. F. Watson, Esq., Redlees, Isleworth, 15s.

CLASS 22.—6 ALPINE PLANTS, distinct. (Open).
1st, Mr. C. Turner, Royal Nursery, Slough, £1.
2d, Mr. R. Dean, Ranelagh Road, Ealing, 15s.
3d, Mr. J. James, Gr. to W. F. Watson, Esq., Redlees, Isleworth, 10s.

CLASS 23.—6 ORCHIDS, distinct. (Amateurs.
1st, Mr. J. Ward, Gr. to F. G. Wilkins, Esq., Leyton, E., £5.
2d, Mr. J. James, Gr. to W. F. Watson, Redlees, Isleworth, £3.
3d, Mr. G. Wheeler, Gr. to Sir F. H. Goldsmid, Bart., M.P., St. John's Lodge, Fulham, N.W. £2.

CLASS 24.—6 ORCHIDS, distinct. (Nurserymen.
1st, Mr. B. S. Williams, The Nurseries, Upper Holloway, N., £5.
2d, Messrs. Rollisson & Sons, Tooting, Surrey, £3.

MISCELLANEOUS CLASS.—EXTRA PRIZES.

Messrs. W. Cutbush & Son, The Nurseries, Highgate, N.
Messrs. Osborn & Sons.
Mr. T. Pestridge, Boston Park Road, Nursery, Brentford.
Messrs. W. Rollisson & Sons, The Nurseries, Tooting.
Mr. G. Tonis, Gr. to H. T. Wetenhall, Esq., The Poplars, Seven Sisters Road, N.
Mr. J. Ward, Gr. to F. G. Wilkins, Esq., Leyton, E.
Mr. B. S. Williams, The Nurseries, Upper Holloway, E.
Messrs. H. Lane & Son, The Nurseries, Great Berkhampstead.
Messrs. Paul & Son, Old Nurseries, Cheshunt.
Messrs. W. Paul & Son, Paul's Nurseries, Waltham Cross.
Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, N.E.
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MR. SHIRLEY HIBBERD, Editor *Gardener's Magazine*.
„ 6 to 13. MR. JOHN T. GIBSON, Superintendent, Hyde Park.
Classes 6 to 13. MR. A. MCINTYRE, Superintendent, Victoria Park.
„ 14 to 24. MR. THOMAS MOORE, Botanic Gardens, Chelsea.
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Choice Bedding Plants.

All strong Plants, established in single pots, except those marked ( ).

ISAAC BRUNNING AND CO. beg to offer—

PELARGONIUMS, strong blooming Plants, in 5-inch pots, good named show and fancy varieties, 6s. per dozen
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,, Pink Christine, &c., 2s. 6d. per dozen, 18s. per 100
,, White Madam Vaucher, 3s. per dozen
,, Nosegay (as Stella, &c.), 2s. 6d. per dozen, 18s. per 100
,, Choice Zonal, leading varieties, 3s. to 4s. 6d. per dozen
,, ,, ,, in 5-inch pots, 6s. to 9s. per dozen
,, Silver Variegated—Bijou, Flower of the Day, &c., 2s. per dozen
,, Tricolor (as Mrs. Pollock), 3s. 6d. per dozen
,, Gold and Bronze, many varieties, 3s. to 4s. 6d. per dozen
,, Double Flowering, best sorts, 3s. to 4s. 6d. per dozen
,, ,, ,, in 5-inch pots, 6s. to 9s. per dozen
CARNATIONS, finest named varieties, 18s. to 24s. p. doz. pairs
CALCEOLARIA, aurea multiflora, 2s. 6d. p. doz., 18s. p. 100
COLEUS, many varieties, 3s. per dozen
DAHLIAS, in variety, 3s. to 6s. per dozen
GAZANIA SPLENDENS, 2s. per dozen, 14s. per 100
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PETUNIAS, a splendid assortment, 3s. to 6s. per dozen
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PICOTEES, finest named varieties, 15s. to 21s. per dozen pairs
PINKS, choice mixed Border, 3s. per dozen, 20s. per 100
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24 Geraniums, in sorts	12 Pyrethrum aureum
12 Calceolarias, yellow	6 Dahlias
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12 Ageratums	20 Stocks
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Forwarded package and packing free (turned out of pots) on receipt of post-office order or cheque.

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ISAAC BRUNNING AND CO., Great Yarmouth Nurseries.

Cheap Plants.—Cheap Plants.

WILLIAM BADMAN offers the following cheap plants for present potting :—

VERBENAS, Purple, White, Scarlet, Rose, Crimson, &c., rooted cuttings, 6s. per 100, 50s. per 1000 ; good plants from single pots, 1s. 6d. per dozen, 10s. per 100 ; twenty named sorts, 8s. per 100.
CALCEOLARIA, Golden Gem and Kayii Improved, 5s. per 100, 40s. per 1000 ; or strong established plants, 1s. 6d. per dozen, 10s. per 100.
LOBELIA SPECIOSA (true), from cuttings, 3s. per 100, 20s. per 1000 ; good plants, from single pots, 1s. 6d. per dozen, 10s. per 100.
HELIOTROPIUM, finest dark, 6s. per 100 ; or large plants, 1s. 6d per dozen, 10s. per 100.
PELARGONIUMS, Vesuvius and Jean Sisley, scarlet ; Madame Vaucher, fine white ; Mrs. W. Paul and Blue Bell, pink ; Waltham Seedling, fine bedding crimson ; all good plants, from single pots, 1s. 6d. per dozen, 10s. per 100 ; Master Christine, finest pink, 2s. per dozen, 15s. per 100.
,, Gold-leaf : Crystal Palace Gem, good plants, 2s. per dozen, 15s. per 100.
,, Silver-leaf ; Flower of Spring, Bijou, Prince Silverwings (fine), 2s. per dozen, 15s. per 100.
,, Tricolor : Mrs. Pollock, 2s. 6d. per dozen, 18s. per 100.
ALTERNANTHERA, magnifica and paronychioides, 6s. per 100, 50s. per 1000 ; amœna spectabile (finest), 8s. per 100, 1s. 6d. per dozen.
AGERATUM, Imperial Dwarf, blue, makes a fine bed, 1s. per 100 ; from single pots, 1s. 6d. per dozen, 10s. per 100.
IRESINE, Lindeni, crimson leaf, fine thing, 6s. per 100, 1s. per dozen.
COLEUS, Verschaffeltii, from store pots, 6s. per 100 ; or larger, 1s. 6d. per dozen, 10s. per 100.
STELLARIA AUREA, new golden edging plant, 4s. per 100, 1s. per dozen.
CENTAUREA CANDIDISSIMA, silver-leaf, 3s. per dozen, 20s. per 100.

Package included. Terms cash.

Cemetery Nursery, Gravesend, S.E.

BEDDING PANSIES, &c.

PANSY, Queen of the Yellows. This flowers freely during the summer, is of a rich bright yellow, of a compact neat habit ; will make a capital substitute for the yellow Calceolaria : 12s. per 100, £5 per 1000.
,, Blue Perfection, Magnificens, Blue King, and Clevedon Blue, 2s. per dozen.
PYRETHRUM, Golden Gem, in single pots, 4s. per dozen.
PRIMULA JAPONICA, in 3-inch pots, most of them showing flower, 40s. per 100, 6s. per dozen ; smaller, in store pots, 25s. per 100.
GERANIUMS, Mrs. Pottle, lovely pink, dwarf, free bloomer, good bedder, 6s. per dozen.
POLYANTHUS, fine, gold-laced (Wiggins' strain), strong, 21s. per 100, 3s. per dozen.
,, ,, seed, 1s. per packet, or ½ oz., 3s.

Terms cash with order.

H. McMILLAN, Nurseryman, St. James' Road, Kingston-on-Thames.

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CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.

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BEDDING PLANTS, &c.

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THE QUEEN'S SEEDSMEN,

CARLISLE,

SOLICIT EARLY ORDERS FOR

DAHLIAS, HOLLYHOCKS, LOBELIAS, VERBENAS, FUCHSIAS, PELARGONIUMS, PANSIES,

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An extensive Assortment of Plants suitable for Beds and Borders,

INCLUDING THE

Best Varieties of Dwarf Variegated Plants and Succulents for Edgings, &c.

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HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,

KNAP HILL NURSERY, WOKING, SURREY.

NEW AND CHOICE PLANTS

FOR 1876.

Carter's

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OF THE ABOVE IS NOW READY,

And will be sent, gratis and post-free, to Purchasers.

THE QUEEN'S SEEDSMEN,

237 and 238, HIGH HOLBORN, LONDON, W.C.

New Double Zonal Pelargoniums

For 1876.

W. & J. BROWN

Will let out this month the following new and distinct varieties, raised by Mr. LAXTON (the raiser of Jewel, Emily Laxton, Guiding Star, and others), all of which are striking novelties, having the dwarf habit of the single Zonals :—

THE GHOST.—Flower pure ivory-white, finely formed, petals waxy and of great substance—a decided acquisition in double whites, and especially adapted for bouquets, 10s. 6d.

SOPHIA CLAPTON.—The plant has the remarkably dwarf and shrubby habit and pale green foliage of "Guiding Star." Flower very full, pretty Hepatica shaped, bright purplish scarlet, 10s. 6d.

WILFRID.—A beautiful pearl-white flower, fuller and more perfect in form than "Aline Sisley," very pretty and remarkably distinct—decidedly the best of its class yet sent out, 15s.

First-class Certificate Royal Horticultural Society.

The set for £1 12s. 6d. Trade terms as usual.

W. AND J. BROWN, Florists, Stamford.

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TEA-SCENTED ROSES.—20,000 strong, well hardened plants, in 5½-inch pots.

April and May are the best months for Bedding or Planting-out the Tea-scented, China, Noisette, and all Roses on their own roots. Selections, left to us, from 12s. to 15s. per dozen.

Descriptive Priced LISTS on application to

CRANSTON AND MAYOS, Hereford.

NEW VERBENAS (ECKFORD'S).

The finest ever yet offered. See JOHN KEYNES' CATALOGUE, 1876.

NEW ROSES, 1876.

Selected varieties. See JOHN KEYNES' CATALOGUE, 1876.

LETTY COLES (KEYNES')—the ROSE of the season—

is now being sent into commerce. All particulars, consult JOHN KEYNES' CATALOGUE.

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Keynes' grand flowers. See JOHN KEYNES' CATALOGUE for 1876

Castle Street Nursery, Salisbury.

Pelargoniums, Fuchsias, Bedding and other Plants.

All established in single pots.

WOOD AND INGRAM beg to offer :—

PELARGONIUMS, Show, Spotted, and Fancy, fine flowering plants in 5-inch pots, good named sorts, 50s. per 100 ; 8s. per dozen.
CALCEOLARIA, Herbaceous (finest exhibition strain), extra fine plants in 5-inch pots, 9s. per dozen, 1s. each.
FUCHSIAS, in great variety, to name, in 5-inch pots, splendid plants, 40s. per 100 ; 5s. per dozen.
PELARGONIUMS, Golden Tricolor, J. D. Bassett, Macbeth, Miss Batters, 6s. per dozen ; Peter Grieve, 9s. per dozen ; Louisa Smith, Mrs. Dix, Pre-eminent, 4s. per dozen ; Queen Victoria, Sir R. Napier, Countess of Craven, Sunset, 4s. per dozen ; Sophia Dumaresque, 3s. 6d. per dozen.
,, Silver Tricolor, Prince Silverwings, 3s. per dozen.
,, Bronze and Gold, The Dragon, 3s. per dozen ; Perilla, 3s. per dozen ; Prima Donna, 4s. per dozen.
,, Crystal Palace Gem, 20s. per 100 ; Vesuvius, 18s. per 100 Master Christine, 20s. per 100.
DAHLIAS, Show, Fancy, and Bedding, 4s. per dozen.
AGERATUM, Imperial Dwarf, 2s. per dozen, 14s. per 100.
ALTERNANTHERA, sorts, 2s. per dozen, 14s. per 100.
CINERARIA MARITIMA, 2s. per dozen, 14s. per 100.
,, ,, CANDIDISSIMA, 2s. per dozen, 14s. per 100.
GNAPHALIUM LANATUM, 2s. per dozen, 14s. per 100.
IRESINE HERBSTII, 2s. per dozen, 14s. per 100.
LOBELIAS, best varieties, 2s. per dozen, 14s. per 100.
MESEMBRYANTHEMUM CORDIFOLIUM, 2s. per doz., 14s. per 100.
CALCEOLARIA AUREA FLORIBUNDA, and other varieties, 2s. 6d. per dozen, 18s. per 100.
HELIOTROPES, of sorts, 2s. 6d. per dozen, 18s. per 100.
PETUNIAS, of sorts, 2s. 6d. per dozen, 18s. per 100.
SALVIAS, of sorts, 2s. 6d. per dozen, 18s. per 100.
COLEUS VERSCHAFFELTII, 2s. 6d. per doz., 18s. per 100
LILIUM AURATUM, 1s. 6d. to 5s. each.
ADIANTUM CAPILLUS-VENERIS, 8s. per dozen.
ASPLENIUM MARINUM, 9s. per dozen.

W. & J.'s new descriptive Spring CATALOGUE is now ready, and will be sent free on application.

The Nurseries, Huntingdon.

New Bedding Calceolaria.

INVINCIBLE, fine canary-yellow colour, individual blooms very large, rather more so than amplexicaulis, and rounder than those of that variety, while the trusses are of immense size and produced in great profusion. It has proved itself to be a fortnight earlier than the best varieties at present in cultivation, and continues the admiration of all throughout the entire season, dwarf, compact, yet free growing habit. The following quotation from the *Gardener* for October, 1875, p. 472, from the pen of Mr. Sutherland, manager of the Aigburth Nurseries, Grassendale, near Liverpool, and also from the *Garden* for October 2, 1875, p 294, from the pen of Mr. Morrison, Gardener to the Earl of Minto, both of whom are of course disinterested, and whose authority on such matters is beyond question, is a sufficient guarantee that this is a novelty of first-class sterling merit, and a great acquisition :—

"This is a very distinct variety of bedding Calceolaria, which I noticed in the nursery of Mr. John Forbes, Dove Mount, Hawick, the other day, and which, I think, will prove an acquisition. It is a dwarf compact-growing sort, yet very vigorous and free in habit ; and though not taller than plants of the well-known aurea floribunda growing beside it, yet it covered more ground, owing to its spreading and more freely branching habit. The leaves are quite distinct from those of any other bedding Calceolaria with which I am acquainted, being larger, deeper green, and having more substance, while the margins are pinnate or waved, as in some of the herbaceous kinds. The flowers are in form and substance and colour the same as those of the well-known C. amplexicaulis—a fine canary-yellow being the tone ; and they are thrown clear above the foliage, but do not exceed 1 foot or 15 inches in height. When Mr. Forbes sends the plant out I venture to think he will find it will be appreciated, especially if it prove (as he informed me it is with him) not liable to canker off.—W. SUTHERLAND."

"I saw, the other day, in Mr. Forbes' nursery, at Hawick, a new bedding Calceolaria of great merit. This variety, to which the name Invincible has been given, is a perfect gem. It grows about 10 inches in height, is of a stiff, erect habit, and in every way splendidly adapted for bedding purposes. In colour it is exactly the same as C. amplexicaulis, but the individual blooms are larger than those of that variety. But it has other good properties besides that of fine colour. Mr. Forbes grew it alongside of Golden Gem and Princess Louise, and found that it was in flower a fortnight before these varieties ; while at the time of my visit (September 25), after the heavy rains of the previous days, I saw it one mass of flower. I have no doubt that this variety, when properly known, will take a leading position amongst our bedding Calceolarias.—JOHN MORRISON, Minto Gardens."

Such novelties are never offered for less than 5s. each, but, owing to its free-growing properties, I have been enabled to accumulate a large stock of it, of which I wish to give my friends and the public the advantage, and so offer it at a price unusually low and within the reach of all—1s. 6d. each, or 15s. per dozen.

CATALOGUES on application.

JOHN FORBES, Dove Mount Nurseries, Hawick, N.B.

Choice Tricolor and Bronze Geraniums.

THOMAS PESTRIDGE can now supply, in good plants, at per dozen for cash—Mr. Headly, 6s.; Peter Grieve, 4s.; Sophia Cusack, 3s.; Salamander, 6s.; Mysterious Night, 3s.; Lass o' Gowrie, 6s.; Mrs. Colonel Wilkinson, 4s.; Miss Pond, 10s.; Marshal MacMahon, 4s.; Black Douglas, 3s.; Earl of Rosslyn, 4s.; Prince Arthur, 6s. Package free. Priced List of other varieties.

THOMAS PESTRIDGE, Park Road Nursery, Brentford.

Special Offer.—Vesuvius, Crystal Palace Gem.

WILLIAM BADMAN offers good plants of VESUVIUS from single pots, 10s. per 100, 85s. per 1000. CRYSTAL PALACE GEM, 15s. per 100. MADAME VAUCHER, finest White Pelargonium, 10s. per 100. Package included. Terms cash.

Cemetery Nursery, Gravesend, S.E.

Roses in Pots by the Dozen, Hundred, or Thousand.

WM. WOOD AND SON solicit attention to their enormous and splendidly grown stock of the above. Inspection invited.

Woodlands Nursery, Maresfield, Uckfield, Sussex.

Flowering and Foliage Plants.

F. AND A. SMITH can supply Flowering PELARGONIUMS and ERICAS for Windows and Conservatories; DRACÆNAS, and other Foliage Plants, for Table Decoration; FERNS, strong and well grown, for Cases, in great variety and at reasonable prices. Priced List upon application.

The Nurseries, West Dulwich, S.E.

CUTTINGS of GERANIUMS, &c.—One Hundred GERANIUMS, in 40 choice varieties, including Tricolor, Gold and Bronze, Variegated, Zonal, Nosegay, and Ivy-leaf, for 10s.; 50, 5s. 6d.; 25, 3s.
24 Fancy PELARGONIUMS, 3s. 6d.; 12, 2s.
24 CHRYSANTHEMUMS, 2s. 6d.; 12, 1s. 6d
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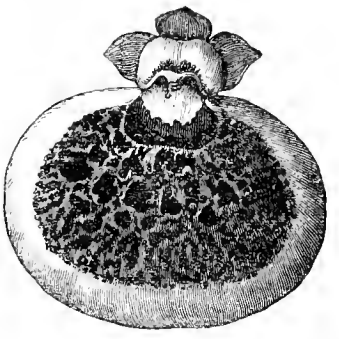

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Ageratums	2 0	0 12
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,, pairs	11 0	3 15
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Calceolarias	1 0	0 8
Coleus	3 0	1 1
Carpet Bedding Plants	1 6	0 10
Daisies, various colours	1 0	0 5
Fuchsias	3 0	1 0
Geraniums, Tricolor	3 6	1 5
,, Bicolor	3 0	1 5
,, Zonal and Nosegay, in sorts for pots	3 0	1 1
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Heliotropes	2 6	0 18
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Pansies, show	3 6	1 5
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Pinks	3 6	1 5
Peonies	12 0	4 10
Pentstemons	3 6	1 5
Pyrethrums	10 0	
Salvias	3 0	1 1
Sedums	3 0	1 1
Saxifrages	3 0	1 1
Violas	1 6	0 10
Violets	2 6	0 18
Roses in Pots, H.P.'s	12 0	4 10
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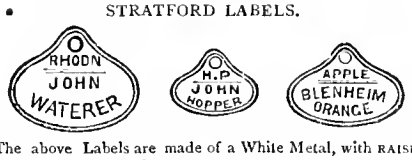

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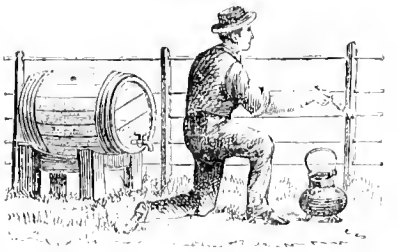

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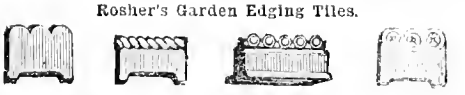

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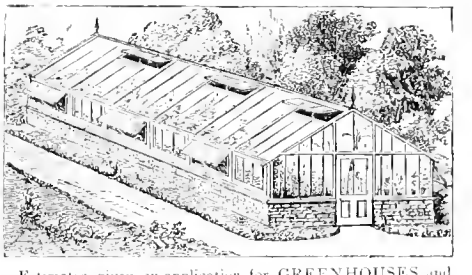

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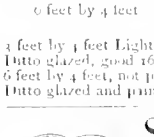
Ditto glazed and painted four coats	16 6



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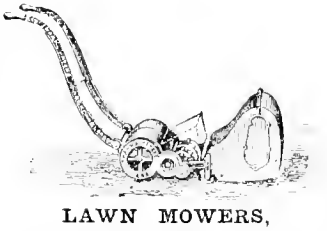

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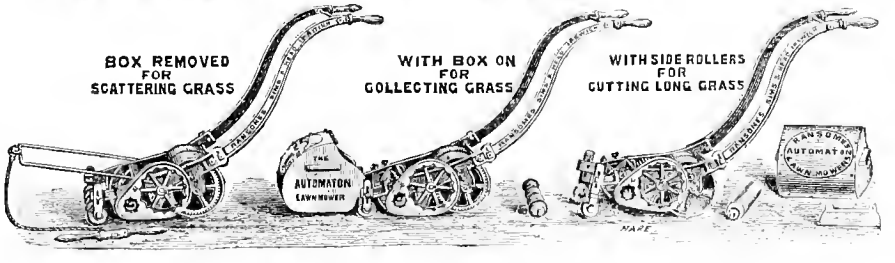

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Sizes, 8 to 20 inches. Prices from 55s.

RANSOME'S "LITTLE GEM" LAWN MOWERS,

For small gardens. These perfect "Little Gems" have a grass-collecting box, and the height of cut can be varied. They have an adjustable ledger blade, and the height of the handle can be adjusted to suit any person. The cutters can be reversed when blunt by driving the Machine in the opposite direction.

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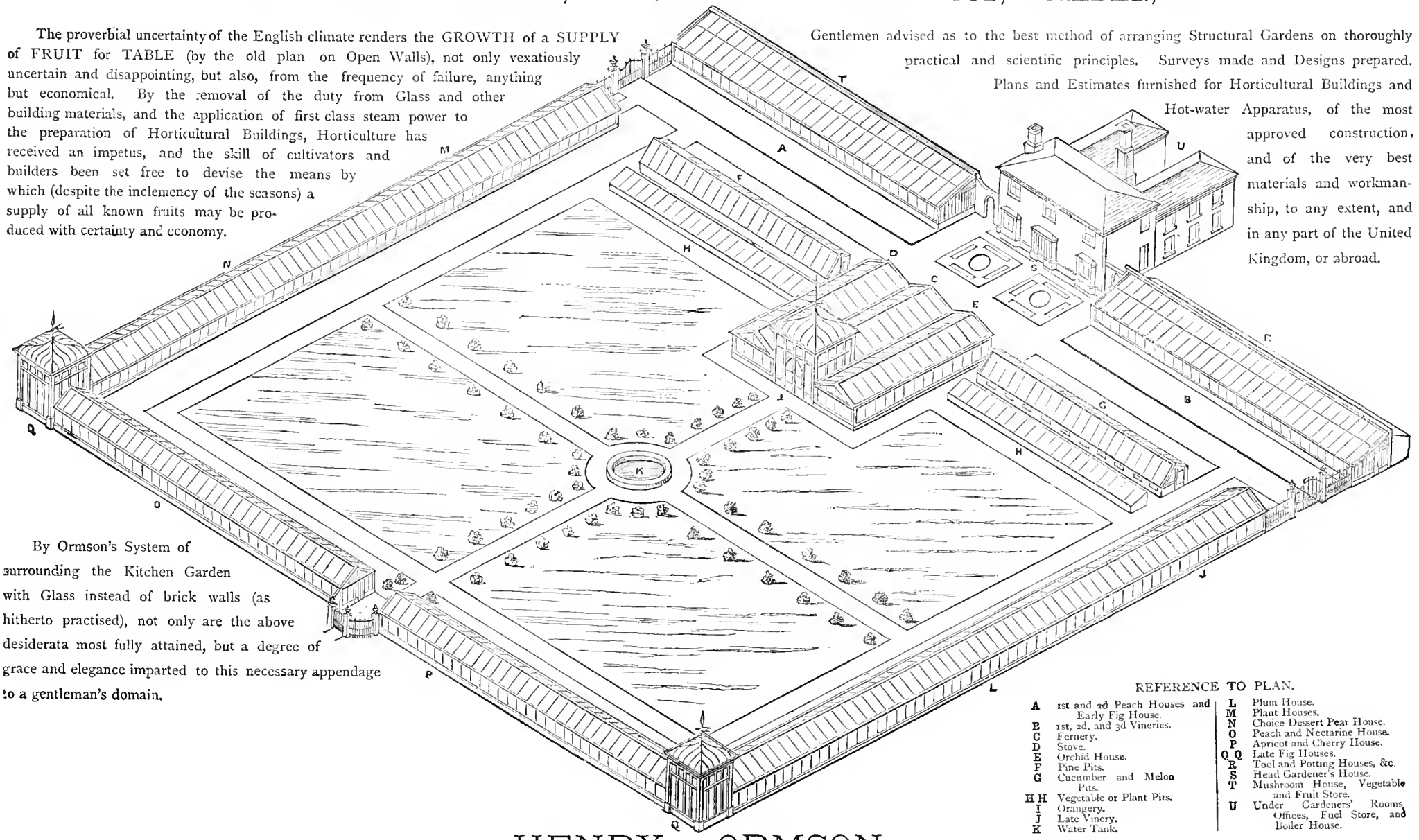

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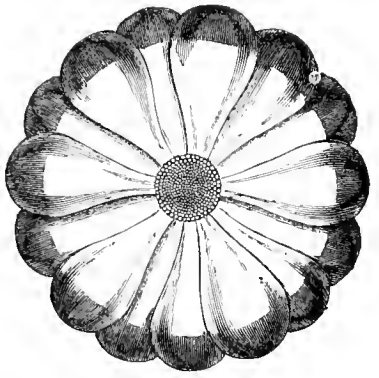

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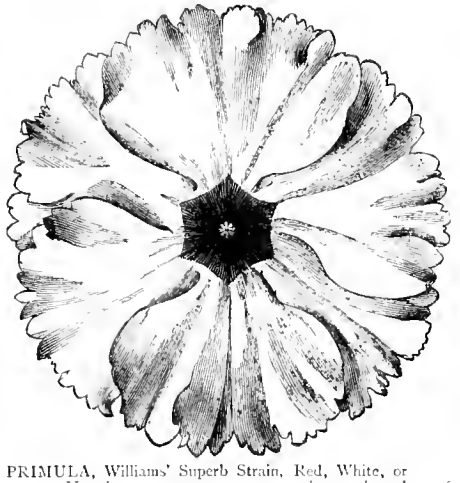

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Mr. WILLIAM BULL having received a large importation of this beautiful Orchid from his Collector in the United States of Colombia, can offer nice plants at

Three Guineas each.

NEW PLANTS for 1876.

Mr. WM. BULL'S Illustrated CATALOGUE is now ready, and can be had on application, price 1s. It contains Names, Descriptions and Prices of a quantity of New Plants, now being sent out for the first time.

Establishment for New and Rare Plants,
KING'S ROAD, CHELSEA, LONDON, S.W.

SATURDAY, MAY 20, 1876.

POPULAR MARKET FRUITS.

THE vicissitudes attendant upon the cultivation of large crops of fruit for market purposes are constantly being illustrated in a climate where the weather is ever treacherous, but never more so than in the critical months of April and May—months that constitute the blooming period of the chief market fruits, and yet months in which the variability of our climate is yearly demonstrated, often to the destruction of a crop, and the consequent heavy loss of the grower. All kinds and forms of cultivation find their illustrations in the metropolitan market grounds—all are contingent upon the weather or upon blight, but the weather is the most dangerous element, and until the month of May has passed it is difficult to feel entire security.

The present spring, although remarkably changeable, has not, so far, been marked by any specially disastrous results to the fruit crops; but recent frosts have been of sufficient severity to materially affect the Gooseberry, which, usually regarded as a safe and almost certain crop, will probably this year be considerably below the average, especially as regards the earlier kinds, the bushes having been considerably denuded of the once promised heavy produce. The later sorts, however, such as were in bloom at the time of writing, seem, so far, not to be materially affected; but these form but a small portion of the general crop, as growers prefer early and large kinds to meet the demand for Gooseberries certain to come at Whitsuntide. There are few kinds of fruit that might not be classed as marketable, but a certain few sorts are specially so, not only because they admit of moderately simple modes of cultivation, but also because their firm portable character enables them to be widely distributed amongst the great masses of the people in large towns through the agency of numerous dealers of all kinds and degrees.

The Gooseberry is probably the earliest of these, because it is even more in request in its green unripe state than it is when thoroughly matured. To the fondness of the English people for unripe fruit in a cooked state, may be attributed largely the enormous consumption of sugar in this country, but whether the practice be a wholesome one or not, no doubt several large industries are by it materially influenced. If the Gooseberry crop, therefore, be short this season, a probable effect might be eventually observable upon the imports of sugar in the earlier summer months; but looking at the promise of other fruit crops, the consumption later on may be even more than the average, and if more of our preserving fruit were utilised by the working classes the increase in the consumption of sugar would be great. To the Gooseberry succeeds the Currant, the black kind especially being a popular favourite. Black Currants fortunately are only available when ripe, and thus matured have the reputation of being one of the most wholesome of fruits. So far the Currant seems to have escaped injury, and the promise is great; in fact, an immense crop may be looked for, "weather permitting." Judging by the size of the flowers, fine fruit may be expected, and the bushes have a fine robust clean leafage, that denotes health and strength.

The Black Currant is one of the best and most profitable under orchard crops, and if the bushes be kept properly thinned and liberally dressed with manure, will continue to produce heavy crops for many years; the pliability of the wood also renders it less liable to damage from ladders and careless work-people, and for these reasons, and because of its great adaptability for marketing, it is one of the most largely grown of bush fruits.

The Cherry next claims notice as a popular fruit, none other being more generally consumed in an uncooked state, none so eaten more wholesome, and few more portable, although it is needful that it should be consumed as soon as possible after picking, to ensure its entire enjoyment. The Cherry, fortunately, needs little pruning, as because of its annual productiveness, it is self-pruning in the truest sense; it thrives well under the simplest cultivation, and in the case of large orchard trees needs much patience until sufficiently mature to produce crops; when once this period is reached a failure of fruit is rare, and one of blossom even more seldom. Cherries this year are wonderfully floriferous, the trees being literally a sheet of white blossom, and, unless severer late frosts than any hitherto experienced this spring result, a heavy crop of fruit may be looked for. It is somewhat to be deplored that such a serviceable kind as the Morello is not more commonly grown as a standard tree for market production, as in that form and in good holding soil, it not only fruits earlier than the sweet kinds, but from the pendent nature of the branches seems to escape the frost more commonly. We have seen standard trees producing, year after year, immense crops, and fetching a good price when other kinds were a glut. The fruit is most valuable for tarts, for preserves, and for bottling; in this latter way the fruit is well preserved, and in time most delicious eating.

Plums have been so long associated with cholera and diarrhœa that a "Plum year" has usually been looked upon with apprehension, but, fortunately for the reputation of this grand and most useful fruit, the enormous crop of last season left behind it no unpleasant results. Whether the poorer classes, to whom this immense crop was, from the lowness of the price, so accessible, reaped its full value to them is doubtful. Eaten to repletion during the short period that the bulk of the crop is available it is productive of more harm than good; but if foresight and thriftiness—virtues, alas! too seldom seen in our metropolitan working classes—had been exercised, thousands of families might now have still in hand a nice little store of delicious Plum preserve, certainly one of the most useful and cheap of all household jams. The present year's crop promises to be as large as the Plum crop of last year. The fruit are set firmly on the trees in immense quantities, and looking over a large plantation recently we took a twig covered with fruit at random, and counted upwards of sixty fruits half the size of Peas within a length of 12 inches. Looking to this and the probable scarcity of Gooseberries, housekeepers will do well to bear the Plum crop in mind when the annual preserving is done. The fruit is best if not quite ripe, should be thoroughly boiled, and not be stinted of clean loaf-sugar; with these and a few other essentials that all good housekeepers will see to, Plum jam may be kept sound and sweet until Plums come again. However, in the face of two successive heavy crops, it is not probable that another will immediately follow, and it will be wise when the opportunity offers to look even further ahead.

Hardly less popular than the "pound of Cherries," to the hard-working fruit consumer is the pennyworth of Pears, and the purchaser is not troubled with doubts as to the sort, provided they be but "meller." Pears, therefore, take a first rank amongst popular fruits, and for a time are almost universally consumed; but the day of the "Williams," the "Windsors," and the "Hazels" is comparatively a short one; and as these and a few other early kinds constitute the bulk of sorts grown for market, the Pear soon becomes select, and available only to the moneyed classes. A few market growers, such as Mr. Dancer, of Chiswick, and others, have boldly gone in for the cultivation in quantity of some of the finest kinds of Pears—a few sorts being late, but such kinds, because of their high quality and necessity for storing, must always be costly, and it is far from probable that the ordinary grower will forsake old favourites that have the merit of producing pretty safe and quick returns although the profits may be small. It is too early yet to gauge the Pear crop of the present season, but although there has been a large bloom the season has not been favourable to its setting, and the produce will probably be rather below the average. A sharp frost or two may yet play sad havoc.

Last, and certainly not least, is the very best of all popular fruits—the Apple. Naturally hardy and usually productive, latest, and, therefore, generally the safest to flower, it is this season almost a mass of beautiful bloom, and a fair if not a heavy crop can hardly fail us. All other common fruits find their floral beauties pale before the rich tints of the Apple blossom, and just now where Apple trees mostly do congregate the orchards are a garland of floral beauty. Best and, therefore, most useful of all keeping fruits, it is also so cheap as to be within reach of all classes; and there is not a home, be it ever so poor, that might not have in winter its little Apple store. As a pudding fruit it is second to none; and whilst the Christmas plum-pudding is but naturalised, the "Apple dumpling" is a glorious native institution that will live as long as Englishmen and Apples exist. We may, therefore, look with hope, although yet not without anxiety, for a great fruit year; and may it prove a blessing to all who grow and to all who consume.

New Garden Plants.

COROKIA COTONEASTER.*

This plant has much of the general habit of Muhlenbeckia complexa, or of that peculiar form of Rubus australis known as R. cissoides. C. Cotoneaster, forms, in the words of Dr. Hooker's *Handbook of the New Zealand Flora*, "a low, rigid, spreading, much branched bush, with woody black tortuous branches. Leaves alternate or fascicled, ½—1 inch long, orbicular, obcordate, oblong-ovate or obovate, suddenly contracted into a flat linear petiole, margins recurved; tip rounded or emarginate, shining above, white beneath." In the cultivated plant the peduncles are solitary and axillary, and bear yellow sweet-scented flowers, about ¼ of an inch in length. The petals are downy on the outer surface, glabrous within, double the length of the sepals; each petal has in front of it at the base a curious little fringed scale. These scales bend over and partially conceal the thick yellow disc which surmounts the ovary, and appear to be designed to protect that organ, or more especially to delay and obstruct insects in their passage to the nectar-secreting disc, and so to ensure that they shall be the better covered with pollen. The stamens are five in number, anteposed to the sepals; pollen elliptic; the ovary is inseparate from the tube of the calyx, 1- or rarely 2-celled, with a solitary pendulous ovule in each cell, the bundles of vessels in the coat of the ovule being unusually conspicuous.

For further botanical details we may refer to the work below cited, merely adding that the plant, though not of the first order of merit as a showy plant, is nevertheless not to be despised when covered with its deliciously scented yellow flowers, while its peculiar habit and structure will always prove interesting to the plant lover. It is very probable that the plant would be hardy in the south or south-west, and in southern Ireland. If so it would form a desirable rockwork plant. It should be as hardy as its near ally, Griselinia. We saw the plant lately in the Temperate-house at Kew, where it was very effective. We have to thank the Curator for specimens for examination.

* *Corokia Cotoneaster*, Raoul, Choix, 22, t. 20; Hook. fil., Handbook of the New Zealand Flora, p. 106. *C. buddleioides*, A. Cunn; Hook. fil. l. c.

COROKIA BUDDLEIOIDES.

This was, so say the catalogues, introduced in 1835, though it is very rarely seen in cultivation. It is an upright growing greenhouse shrub, with the younger branches, lower surface of the leaves, as well as the calyx, covered with white appressed hairs. The leaves are shortly stalked, linear-lanceolate, about 4 inches long by ½ inch wide. The flowers are similar to those of C. Cotoneaster, but are borne in terminal panicles. Both species are natives of New Zealand, and form a genus of Cornaceæ closely allied to Griselinia. *M. T. M.*

PHALÆNOPSIS AMABILIS, *Lindl.* (*nec. Bl.*)

I have before me a flower, no doubt of Mr. Low's last importation, showing the base of petals with some spots. The lip is rather peculiar. It has three lines confluent at the base and each bifid at upper end on the base of the side laciniæ. The callus is quite regular, yet rather pallid. It is John T. Barber, Esq., of Spondon, who discovered those features, and sent me one flower, stating that the four others presented the same appearance. *H. G. Rchb. f.*

DENDROBIUM DEVONIANUM (*Paxt.*) CANDIDULUM.

A very interesting variety, having the two yellow eye-spots, and only those purplish spots which stand near the base of the lip. The usual purplish marking on the tips of petals and lip are totally wanting. "The other one without any colour, except in the throat and the two yellow discs, did not come out of the lots of D. Devonianum of Mr. Low's sale, and appears to have been a very tiny seedling on one of the lots of D. Wardianum. I did not notice it last spring when putting the Wardianum in the basket, and it is not now large—pseudobulbs 3½ inches high, with two blooms; there is nothing peculiar in its appearance from any other Devonianum, and the two young growths now starting have leaves of that dark purple colour so frequently seen in finely tipped varieties: it is certainly a very pretty addition, and I intend to take great care of it for increase of stock." These are the *ipsissima verba* of the lucky possessor, John T. Barber, Esq., from the Old Hall, Spondon, Derby. *H. G. Rchb. f.*

ON PACKING FLOWERS.

THERE are few persons who have been accustomed to receive cut flowers by post who have not experienced the mortification, on opening the box, of finding them all fallen to pieces, crushed, or otherwise injured. We therefore propose to give a few directions on the subject, and believe that, if they are attended to, both the sender and receiver will be spared the mortification alluded to.

Always *cut the flowers early, in the cool of the morning*, and when in their prime. Take a piece of cotton-wool, wet it, and wring it out, then twist it about the stalk. If tin boxes are used, they must not have sharp corners, or they will be rejected at the post-office, but, when properly made, they excel all others for the purpose in question. At the bottom of one of these place a piece of stout brown paper (if thin, double it); let this be well damped, then lay the flowers carefully in, placing a piece of silver or tissue-paper between each, to prevent their bruising each other. Over all place a piece of the same paper, and on this a little cotton-wool. Cover the box with paper, and the flowers will reach the extremities of the kingdom in good condition.

Let us add the modes of faulty packing, to warn our friends against their adoption:—1. Placing the flowers in contact with dry cotton-wool, which clings to them, and abstracts their moisture. 2. Putting them in thin boxes, such as have contained lucifers, &c., which invariably get crushed in passing through the post-office. 3. Putting the cotton-wool about them too wet, the moisture from which gets shaken over the flowers, and spoils their colours. 4. Cutting the flowers after exposure to the sun, which ensures their falling to pieces on the journey; this also occurs if the blooms are stale.

Some persons, sending seedling flowers for an opinion, think it best to cut them when not fully open, knowing that they will expand in water; but

they should learn they do not show their true character, either in shape or colour, under such circumstances. A better plan is to cut off the pistil directly it can be done; this will ensure the flower lasting a considerable time. *Florist and Pomologist.*

LOUIS VAN HOUTTE.

The funeral of this eminent horticulturist, whose death we announced in our last issue, took place at Gendbrugge on Friday, May 12, in the presence of a very large gathering of friends, among whom were the notabilities of the district, Count Kerchove, the Burgomaster of Ghent; Prof. Morren; M. Crépin, the director of the Botanic Garden at Brussels; M. Oswald de Kerchove, Prof. Kicks, director of the School of Horticulture; M. Rodigas, MM. Ambrose and Jean Verschaffelt, M. Charles Van Geert, M. E. Pynaert, and 200 *employés* of the establishment. The band of Gendbrugge, a detachment of infantry, and the local clergy preceded the hearse, on which were placed the Burgomaster's uniform and the decorations of the deceased gentleman; the workmen of the establishment placed on the coffin a magnificent wreath, and some members of other establishments testified their respect in a similar manner. The pall was borne by MM. Morren, Ambroise Verschaffelt, Seymortier, *échevin* of Gendbrugge, and Guilmot, one of the most intelligent and devoted assistants of the deceased. The ceremony was performed in the church of Gendbrugge, which was much too small to contain the number of persons present, who may be estimated at 1500 at least. At the grave, addresses were delivered by Count Kerchove, Burgomaster of Ghent, E. Pynaert, Prof. Morren, A. Van Geert, in French; and by M. de Guchteneere, *échevin* of Gendbrugge, in Flemish. Count Kerchove, as President of the Royal Society of Agriculture and Botany of Ghent, paid homage on the part of the Society to him who had been one of the foremost in promoting the grandeur of its exhibitions and the greatness of its reputation—to one who by his energetic will and great knowledge had created one of the finest horticultural establishments in the whole world. Sketching briefly the career of Van Houtte, the Burgomaster pointed out how in his youth having a strong love for plants he accepted with eagerness the offer which was made to him to go to Brazil to collect the plants of that rich country. He visited the vast forests of the Amazon, and subsequently the luxuriant regions of Western Africa. On his return to Belgium he was appointed director of the Botanic Garden at Brussels, but his love of plants did not find sufficient scope within the necessarily restricted limits of that establishment. He conceived the idea of founding an establishment for the introduction, cultivation, and distribution of the marvels of the vegetable world. He was supported in his endeavours by the late Alexander Verschaffelt, and by his immense energy and perseverance was enabled to found the gigantic establishment which has attained so wide a reputation. Not content with this, he initiated and carried on an illustrated botanical journal, the *Flore des Serres*, which rapidly took its place among the leading horticultural periodicals; and he acted as director for many years of the National School of Horticulture, which, annexed to his establishment, became one of the most celebrated schools in Europe, and was frequented by gardeners from all countries.

M. Pynaert, one of the Professors of the School of Horticulture, also alluded to the large part which Van Houtte took in organising horticultural instruction in Belgium; he bore witness to the extreme activity and energy of his character, which made light of all obstacles—of the spirit of perseverance which characterised all his undertakings, and to his absolute devotion to horticulture as a national industry.

The Sheriff of Gendbrugge, M. de Guchteneere, naturally dwelt upon the career of M. Van Houtte as Burgomaster of the Commune, and showed how the energies of the deceased gentleman were devoted to the welfare of the town and population.

Professor Morren alluded to the efforts made by M. Van Houtte in promoting the supremacy of the city of Ghent in horticultural matters, and spoke of him as one among many others who, in their several spheres of activity, contributed to found the Belgian nationality.

M. Auguste Van Geert also spoke, as a brother nurseryman, of the efforts made by M. Van Houtte in extending and promoting the interests of horticulture. The most recent account in our columns of the extensive nursery presided over by the deceased gentleman is that at p. 486 of our vol. iv., 1875.

SPRING GARDENING AT BELVOIR.

If the spring gardening at Belvoir Castle, as seen towards the end of April, can be taken as representing what can be done with simple spring flowering plants in the face of the most antagonistic conditions of weather, then it commends itself to the attention of gardeners with fourfold value. Consider what had occurred the previous week. A snow-storm, terrible in its fury, and unusual in its duration, had dashed itself, avalanche-like, over a considerable tract of country, and especially across the vale and on the slopes of Belvoir, tearing up huge trees by the roots, and scattering the branches of others in all directions. The pretty spring flowers, radiant with vernal beauty, were for a considerable time covered with a dense coating of snow—such an one as is looked for in January rather than April; and just as if winter were desirous of quenching with its dense showers of frozen vapour the floral evidences of the advent of gentle spring. But they would not be crushed; a bright day or two removed the traces of suffering, and, almost as if by the touch of a wizard's rod, all was smiling and happy again. The glory of spring flowers is their great wealth of floriferous production, as if too much floral wealth could not be lavished at the awakening spring-time.

There is something nearly akin to the master touches of genius in the arrangements of the spring gardens at Belvoir. An educated taste, aided by a great knowledge of the character and habits of the plants employed, directs these arrangements, and gives a high character to the whole. It is spring gardening, for the first lines of beauty appear as early as January; and it is in the full flush of its wealth of colouring early in April. In ordinary spring gardens, where later flowering plants are employed, the beds are at their best at the middle and end of May, just when there arises the necessity for rooting up the whole.

Probably the warm sheltered slopes of Belvoir materially encourage precocity in spring flowers; at the same time Mr. William Ingram has for years past turned his attention to the development of this property in flowers; and by judicious and persistent selection he has attained positive, and to him valuable results. This is true of Honesty, of which plant he has quite a rich rosy purple, of dwarf growth, and blooming very freely, while the common purple and white forms bloom earlier than they do round London. The same holds good of Primroses, Wallflowers, Aubrietias, Arabis, and others. Of Daisies the earliest and most attractive is a large deep crimson variety, which makes a bold show; and the pretty aucubæfolia takes on a charming dress of variegation here. Saxifraga cordifolia is a grand subject in stone vases, flowering with great freedom from among its massive leaves. S. hirsuta, allied to S. crassifolia, is very early to flower, and is of great service. Mr. Ingram has just obtained a form of S. cordifolia, of a very bright colour, which he will propagate both for its hue of colour and its earliness. That is an excellent idea of Mr. Ingram's, which has led him to set down at the very entrance to the Castle garden a charming bed of the Czar Violet on a warm, sunny slope, with which to regale his visitors at the outset. Fragrant Violets abound on every hand; they are quite naturalised, and blossom early, and with a prodigal plenteousness. How charming the early-flowering Heaths are at Belvoir! and there are a few varieties of them employed to the best advantage. There was a bed of Erica carnea literally striped with the pretty blue Myosotis dissitiflora, and carpeted throughout with the golden Sedum acre. It had such a soft, delicate beauty of expression. Another bed had the blue Scilla sibirica flowering amid the free-blooming Arabis albida, with the blue Myosotis in bands, as one would see them thrown across a naval banner, and an edging jointly composed of Trentham Blue Pansy and Bellis aucubæfolia. Here is another bed, just to show how these Belvoir arrangements differ from those usually seen in the spring-time:—Arabis blepharophylla, with its rosy purple flowers, having the Golden Thyme dotted about it, and amid it a setting of a pink Aubrietia raised at Belvoir, and edged with Pyrethrum Golden Feather. Each of these beds had its duplicate, the whole being arranged as a circle round a raised piece of rockwork.

In some of the larger beds were chains of Aubrietias, the links affording oblong spaces in which to plant choice things for trial. Thus, in one, was Primula vulgaris auriculeflora, which will be much used at Belvoir in the future; Primrose Golden Gem, a white hose-in-hose Polyanthus, &c. Other specialities were Veronica glauca, a pretty little free flowering plant, very free and charming in appearance; Iris pumila bicolor, very dwarf and early; Cardamine rotundifolia, a very early single white form, blooming in February; Arabis arenosa, pale lilac, very early; a Pulmonaria specially selected for the beauty of its foliage, which is handsomely blotched with white; Sanguinaria canadensis, pure white; a very fine double white Anemone nemorosa; the vermilion Anemone fulgens, and Aubrietias with decided pink shades, which have been raised by Mr. Ingram from seed, and which will be very useful, for the Aubrietias are largely used for masses of colour at Belvoir; and masses of seedlings showing tints varying from purple to pink had an excellent effect.

From the Castle garden the visitor gets a bird's-eye view of the statue garden, lying in a sheltered hollow below him; and one of the charms of Belvoir is that these beautiful arrangements which are met with can all be viewed from above and below, and are without that monotonous appearance peculiar to floral arrangements set down on a deal level.

To those who can appreciate the delicious *abandon* of semi-wild beauty, what is known as the Duchess's Garden will afford them much to call out their warmest admiration. Every section of this garden witnesses to the happy union between Art and Nature. Mr. Ingram has considerably extended this garden during the past three years, and he has prosecuted his work *con amore*. The sloping banks are aglow with floral life—one might add, in almost infinite variety, such a large number of subjects being found here in company. Aubrietias, Arabis, and Myosotis form the leading groups and masses; they are the groundwork of beds, and they fall down over rocky ledges like a natural fringe, yielding soft beauty in abundance. Some new pieces of rockery are among the fresh features: and how unlike in design and execution they are to some arrangements we have seen, which are both exaggerated and unnatural. One can fancy they are the result of a wild waste of water, which at some time or the other came rushing over the crown of the heights above, revealing to view as it carried the yielding earth before it the stones buried beneath its surface. Mr. Ingram is a practical geologist, and his attainments in this science have governed the work of his hands. Charming little novelties in rock plants nestle under the sunny sides of rocks, serving their time of probation, and giving proof of their probable usefulness, while bold masses of older plants fall into their proper places above and on either side. There are Aubrietias, Arabis albida, Erica carnea, Saxifrages, Doronicum austriacum, one of the most useful of early spring plants; the double Anemone nemorosa, Omphalodes verna, growing and blooming with great freedom, and as one rarely sees it in the South; Primroses, Violets, &c. Gentiana acaulis, and the still more attractive G. verna, are found here, and so is the yellow Alyssum montanum and the pretty snow-white Cardamine trifoliata, growing in effective clumps, in company with the lovely blue Omphalodes. How seldom one meets with such groups of Epimediums as are found here, in large patches of several varieties, growing luxuriantly and flowering gloriously. The cool shade of the sloping rockwork suits them exactly. There are alpinum, macranthum, pinnatum, purpureum, and violaceum. In another place we see a bold-growing Cerastium from Vienna, with white flowers, which appears to be quite distinct and a fine late variety; Alyssum argenteum (?), yellow—a shrubby perennial, in flower in June and July: thus, with A. saxatile and A. Weirbecki, forming quite a succession; and Arabis lucida, a very early type, flowering in the middle of April, and which Mr. Ingram is endeavouring to improve by obtaining a strain with large white flowers. How loth one is to leave this charming garden, and how inadequately can the best written description translate to prose its many lovely features. About these slopes, which are being extended year by year, Mr. Ingram is planting Palms, Camellias, groups of flowering and foliaged plants of many kinds, and on other aspects of an equally interesting character.

In Mr. Ingram's reserve garden were some promis-

ing specialities newly introduced to Belvoir. Among these there are Pulmonaria azurea, a very early-flowering form, with deep clear blue flowers, very good in every respect; Corydalis cava, large white flowers, very fine and vigorous; and C. nobilis, with large pale yellow blossoms; Anemone Robinsoniana, which appeared to be a noble form of A. apennina; Ranunculus montanus, which Mr. Ingram brought from Norway last autumn, very early and free; and a very floriferous Cowslip, also from Vienna, which Mr. Ingram hopes will prove the progenitor of a new race.

Those who would see spring gardening in perfection should visit Belvoir in the early part of April, when the awakening of the spring-time flushes the trees with a leafy growth, and Nature clothes herself with the first dawning of the coming summer glory. *R. D.*

PYTHIUM EQUISETI.

GREAT interest is just now attached to this curious parasite, and hitherto it has not been recorded as British. Dr. Sadebeck, of Berlin, described the

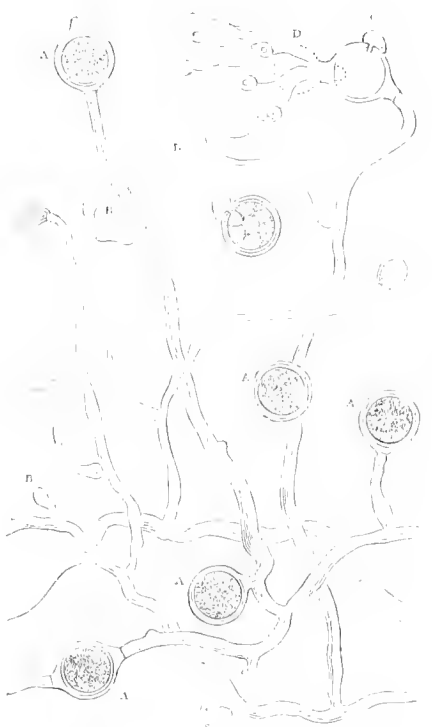

FIG. 117.—PYTHIUM EQUISETI, AS GROWN ARTIFICIALLY IN LONDON. Enlarged 400 diam.

plant last year as a new species of Pythium, parasitic upon Equisetum arvense. It bears a considerable resemblance to the bodies discovered last year, and referred by me to the secondary condition of the Potato fungus. It ultimately appeared that Dr. Sadebeck also last year found a similar parasite infesting and destroying living Potato plants near Coblenz, and at the time he referred the Equisetum and Potato parasites to the same fungus, and on seeing my microphotographs he doubtfully threw out the suggestion that all three fungi might possibly prove to be the same with each other.

On these insufficient grounds a report was spread in this country that the organisms described by me were the same with Dr. Sadebeck's Pythium Equiseti, and the *Journal of Botany* for March last stated, in reference to Pythium Equiseti, that it had "lately been attempted to connect this fungus with the oospores of Peronospora infestans." Dr. Sadebeck can hardly be said to have made such an attempt, for in a very kind letter that he wrote me on March 23 last he said the presumed identity was a mere "supposition," thrown out in a preliminary paper, that he was without experiments from which to form a definite conclusion, and that he had not been able to infect the Potato plant artificially with the Pythium.

Dr. Sadebeck's excellent paper, and the evident strong external resemblance of his newly discovered plant to mine, made me extremely desirous of seeing the Berlin plant, but on writing to Dr. Sadebeck to this effect he replied that he had no specimens. It therefore only remained to look out for the parasite here, and I was fortunate enough to enlist the good services of Mr. B. D. Jackson, F.L.S., who sent me some capital specimens of Equisetum arvense from Snodland, Kent, on April 25. The first piece of Equisetum I examined under the microscope displayed the presence of fungus spawn ramifying amongst the tissues; so, from experience gained of the habits of some of the lower fungi, I half submerged the specimens of Equisetum and kept them covered up in a dark place. In ten days the Equisetum plants were dotted inside and out with gelatinous patches, and every patch was a mass of Pythium Equiseti. Though bearing a strong resemblance to the early condition of the bodies found by me in the Chiswick Potatos, yet Pythium Equiseti is clearly not the same. Mr. Berkeley, who has seen both plants, writes me that he considers them "decidedly different." I have been unable to infect the Potato plant with the Pythium or the Equisetum with my Potato oospores. My experiments, therefore, agree with the results obtained by Dr. Sadebeck, and the two parasites may be considered different.

It is a singular fact in connection with this subject that Mr. Renny met with a Pythium last year attached to Cuphea leaves. This plant had non-septate threads, produced no true resting-spore, and was wholly without male organs (antheridia). Yet Mr. Renny, at a meeting of the Linnean Society, is reported (in reference to my organisms) to have "expressed his own opinion in favour of their being the same Pythium as he had himself noticed," and named provisionally P. incertum (*Journal of Botany*, 1876, p. 156). At the same meeting Mr. Carruthers suggested that my organisms might be the same with De Bary's P. vexans, another supposed new species. These diverse opinions show either that at one stage of growth many different plants are very much alike, or the opinions indicate a want of appreciation of minute details amongst different observers. Professor Dyer gave the *coup de grâce* when he suggested "clearing the field of discussion by eliminating the obscure Artotrogus altogether, its structure with oospores intercalated in the threads being clearly different from the Peronosporeæ" (*Journal of Botany*, 1876, p. 156). The intercalated oospores, of course, are really characteristic of the Peronosporeæ.

A few lines should here be given regarding the parasite found by Dr. Sadebeck on Potatos. First of all it may be said that De Bary, who also, it seems, met with a new parasite on Potatos, could not make it artificially take possession of the living Potato plant, and principally for this reason he refers the parasite, not to Peronospora, but to Pythium. Dr. Sadebeck, however, found his fungus in possession of the living plant, for he says that "in the first days of July, 1875, he saw at Metternich, not far from Coblenz, a Potato field which, to all appearance, was affected with the murrain; a closer examination, however, showed that the signs of disease were traceable almost entirely to Pythium Equiseti. The anticipated Peronospora was not found in any of the plants examined; on the contrary, the Pythium was discovered in a great number of plants, and in all parts of the plants." It would seem not improbable, therefore, that Dr. Sadebeck really met with the oospores of Peronospora infestans, if one may judge from the effects and habit of the parasite, no specimens being preserved or experiments carried out.

The accompanying illustration (fig. 117) explains the nature of Pythium. It is a camera-lucida representation (enlarged 400 diameters) of Dr. Sadebeck's Pythium Equiseti as grown artificially by me. The plant grows in water, and consists of, 1. Threads without septa (Dr. Sadebeck, however, saw septa); 2. Female organs (oogonia), A, which are either sessile, intercalated, or terminal, as in Artotrogus and Peronospora; 3. Male organs (antheridia), B, carried as shown in the illustration. The male organs at a certain period of growth attach themselves to the female, C, and thrust a beak through the cell wall of the latter into the contained protoplasm, and fertilisation is the result. When the oogonium is mature it bursts, and the contents stream out in the form of a thin secondary bladder, D. In its turn the contained material of this bladder rapidly becomes differentiated into zoospores, the secondary bladder breaks up or dissolves, and the zoospores swim about by the aid of their two tails (cilia) in the water. At length these swimming spores come to rest, their cilia dissolve, and, bursting, they throw out a fine tube, which tube is the first thread of a new plant. *W. G. Smith.*

FUSISPORIUM SOLANI AND ITS RESTING-SPORES.

FUSISPORIUM SOLANI is a fungus which very commonly occurs on diseased Potatos in company with Peronospora infestans. One is as destructive to the Potato as the other, and Mr. Berkeley, writing of the former in 1857, describes it as a second enemy of the Potato, "equally destructive with the Peronospora, and, according as the two are separate or combined, different appearances arise. In some cases," continues Mr. Berkeley, "it produces an extreme degree of hardness, inducing a condition like that of the mummified silkworms. Sometimes, on the contrary, it causes rapid and loathsome decay, especially when in company with the Peronospora." Like the latter, it suddenly appears on the Potato plant, carries on its work of destruction, and vanishes.

Till now I believe the resting condition of Fusisporium Solani has never been described. In my attempt to work out the life history of Peronospora

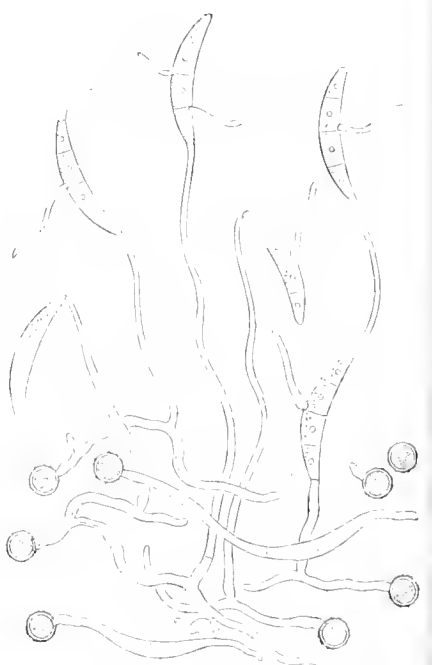

FIG. 118.—FUSISPORIUM SOLANI, FROM THE RESTING-SPORES. Enlarged 400 diam.

infestans, the undoubted resting-spores of the Fusisporium came to light in the following manner:—A quantity of badly infected Potato leaves were selected and isolated last July with the view of watching the Peronospora. As the presumed oospores of the latter gradually appeared, there also appeared much smaller bodies, which also went to rest; these were so similar in size and appearance to antheridia or dead zoospores, that they were thought to belong to one or the other. When I recently placed some of the presumed oospores of Peronospora in pure water to promote germination, all the smaller bodies at once burst, and in the short space of six hours developed into perfect plants of Fusisporium Solani, just as shown in the illustration (fig. 118). In size the spores measure about the $\frac{1}{2500}$ of an inch in diameter; they are palish brown in colour, with a very finely muricated outer coat, and a light central nucleus. The Fusisporium is frequently produced close to the resting-spore, and I have observed the direct germination and production of the Fusisporium in innumerable instances. How these resting-spores arose last year I am not certain, but it is not improbable that they may be a different condition of the aerial fruit broken up into four parts. On reference to the figure, the aërial spores will be seen each divided into four parts, and each part having a transparent nucleus; but I think I can remember formerly seeing these globular bodies as buds on the old Fusisporium threads. *W. G. Smith.*

BRITISH GARDENERS.

XXXVIII.

ALEXANDER INGRAM.

THE name of Mr. Alexander Ingram, whose portrait we publish to-day, is by no means unfamiliar in the records of our metropolitan exhibitions, inasmuch as some years since, when living at Reading with the late J. J. Blandy, Esq., he was known as a clever cultivator and successful exhibitor of choice plants.

"I was born," he writes, "in the parish of Chaple of Garioch, Aberdeenshire, on December 10, 1821. At an early age I took a great fancy for gardening, but having no friends or relatives connected with the profession I had to pave the way for myself. About the age of 16 I got into the gardens of Hugh Lumsden, Esq., Pitcaple Castle, as garden boy, and continued there and in other small gardens for some few years. For some time I had been most anxious to serve an apprenticeship under some first-class gardener, and at last an opportunity turned up, and I went to serve a three years' apprenticeship under Mr. Dallachy, head gardener at Haddo House, the seat of the Earl of Aberdeen, entering on my duties in November, 1843.

"At that time Haddo House was said to be one of the finest and best kept places in the kingdom, Mr. Dallachy was an excellent gardener and botanist, also a good and kind master. The old Earl took a great interest in his gardens, and the welfare of all employed in them. At that time there were never less than a dozen under-gardeners, all comfortably lodged in the garden, besides a staff of labouring men and boys. Through the kindness and liberality of the Earl we had a very useful collection of books placed for our use in the garden rooms, on condition that we paid a nominal sum of a few pence monthly, for the use of the books and papers. At the end of the year the subscriptions were collected, and went to buy some new work on horticulture. If the money in hand was not sufficient to purchase the selected book, I believe the Earl made it up, which I suspect he often had to do. During the winter months we had evening classes in the garden rooms; botany, drawing, and other branches of education were taught, and I have ever found the information I then gained of most essential service. It has justly been said that Haddo House was a good school for learning the art of gardening. Work was always plentiful, and it had to be well done. It mattered not whether it was mowing from four to seven in the morning, which were the hours then, or any other sort of work—all had to be done in a neat and orderly manner. The herbaceous ground was amongst the first objects that attracted my attention—the collection of herbaceous plants being the largest I have ever seen in any private garden, and all correctly numbered. Many a pleasant hour I spent in collecting, naming, and drying specimens, a great many of which I retain to this day. The pleasure-grounds being extensive and well wooded, the art of forestry was taught in the same precise manner as gardening. The planting, pruning, thinning, and felling, had all to be done by the gardeners. Conifers being a favourite class of plants with his lordship, they were well represented, and at that time there were some nice specimens, but I regret to say the memorable winter of 1860-61 destroyed the greater part of them. From that time coniferous plants have been favourites with me.

"During the greater part of my time at Haddo alterations and improvements were going on, and such indeed has been the case in every situation I have held since. A very elaborate conservatory was built, divided into three compartments, viz., for stove, greenhouse, and flowering plants. Four vineries were remodelled, and hot water substituted for the brick flues. The Vine borders were all remade and young Vines planted. In all these operations I felt deeply interested, so that my apprenticeship passed away very pleasantly.

"I was then advanced to be foreman in the flower-garden and pleasure-ground. In that capacity I only remained a few months: Mr. Dallachy had been applied to for a foreman to go to Newby Hall, Yorkshire, the seat of Lady Mary Vynir, and I was sent to fill the place. After a very rough sea passage of some days, I landed at Newby Hall on February 19, 1847. I found it to be a fine old place, with a large kitchen garden, well stocked with fruit trees, and a fine range of glass. Fruit growing was the principal feature of the place, and at that time was well done—Grapes, in particular. Mr. Smart, who was then head gardener, had the charge of the woods and plantations, so that he was but seldom in the garden, and owing to his absence the management of the work fell almost entirely to my lot. As there was nothing going on beyond the usual routine, I made up my mind that one year would be quite long enough to remain. But an incident occurred which induced me to stop another year. Lady Mary was about making a new flower garden in the Italian style in front of the Hall; her ladyship brought the plans to me, and asked if I could lay it out. I at once undertook to do it, and by the end of the second year the new garden was finished, as well as several other minor alterations, which I believe were all satisfactory to her ladyship, from whom I always received great kindness.

"My next engagement was at Moorpark, Hertfordshire, the seat of Lord Ebury (February 3, 1849), as foreman, under the late Mr. Sparrow, in whom I found a thorough practical gardener and a very indulgent master. Moorpark is known to be one of the finest places in the neighbourhood of London, and amongst the largest forcing establishments, fruit, flowers, and vegetables being in demand at all seasons. Strawberries were forced by the thousand: the first crop was always ripe early in March. I never knew a man more successful in Strawberry forcing than Mr. Sparrow. Grapes, Peaches, and Pine-apples were extensively grown; the culture of these three fruits has always received much of my attention, but the king of fruits perhaps rather more than his share. The collection of plants were in no ways neglected, and Mr. Sparrow added many rare things to it, in the way of Anæctochilus and other Orchids, Pitcher-plants and tropical aquatics; of the latter the Euryale ferox, a plant but very little known, was grown and flowered in perfection. This proved to be a good school for improvement, as the greater part of the place was under renovation during my sojourn there of four years, which passed away very pleasantly.

"My next start was to the Royal Exotic Nursery, Chelsea, February 7, 1853. The nursery was then in the possession of Messrs. Knight & Perry. This was, indeed, a change from Moorpark; for everything seemed to be at a standstill, and had they not taken a change for the better my stay would have been of short duration, but the late Mr. James Veitch shortly after became its proprietor, and through his great ability and energy the Royal Exotic was brought to the high state of perfection it still retains. I believe I gained the confidence and friendship of Mr. Veitch, which lasted until the day of his death. During my stay in the nursery, which was about sixteen months, I gained much useful information, which proved to be of great service to me. I may here be allowed to state that I think it would be to the advantage of every young gardener to get twelve months in a London nursery before he undertakes the management of a place for himself. Mr. Veitch sent me to Highgrove, Reading, June 3, 1854, as head gardener to the late John Jackson Blandy, Esq., in whom I found a kind and liberal master. He was a man of great taste, fond of horticulture and the improvement of his place. Alterations and improvements commenced as soon as I entered his service, and kept on until a few months previous to his lamented death. Several acres of ground were added to the gardens, and additions were made to the glasshouses from time to time, as the collections of plants and the growth of fruit kept increasing. Plant-growing and exhibiting were hobbies of Mr. Blandy's; at the same time that the other branches of gardening were not neglected. For many years we had ripe Grapes all the year round. The first dish was always cut on March 11, that being Mr. Blandy's birthday, and many are the friends who must have a kindly remembrance of the liberality with which Mr. Blandy distributed the products of his forcing-houses.

"Of the success I had in plant and fruit-growing the gardening public are the better judges; suffice it to say that, during my time at Highgrove, which was thirteen years, we took 400 prizes at the London and local shows, mostly for plants and fruits. During the latter part of my time my sphere of labour was extended further than the gardens, and in consequence of this and other incidents, I had several agreements with Mr. Blandy; the last, which I shall never forget, being an agreement to stop with him as long as he lived. But alas! I had only the pleasure of serving him and his amiable lady a few years after that. The place was sold soon after his death, and part of it is now built over.

"From Highgrove I came to Alnwick Castle, October 16, 1867, as gardener to His Grace the Duke of Northumberland. This place being so well known, I need say but little about it. The Duke and Duchess take much interest in their garden and in the improvement of the place, which has been going on from the time I entered their service.

"The gardens are, to a certain extent, being re-made. In the grounds, Conifers and other choice trees and shrubs are being planted to a large extent. All these improvements have been carried out under the personal direction of the Duke and Duchess, from whom I have at all times received the greatest kindness and encouragement."

ORCHIDS IN BELGIUM.

DURING my recent visit to the International Horticultural Exhibition at Brussels, I was told that Orchids were not well grown in Belgium, and I, with Mr. Harry Veitch, had special invitations to visit several collections, which we accepted, and were surprised to find them different to what we anticipated, for they were well grown, clean, and robust—in fact I have never seen Orchids more promising. We visited several collections: the first I will describe is that of M. FERDINAND MASSANGE. This place is situated in a very romantic spot a short distance from Liége, and from which you can obtain a fine view of the town as well as the surrounding country, it being upon a high hill. You enter this place through a grove of trees; there is a fine open space which seems to be in preparation for making more extensive premises. There are houses of Palms, Ferns, Azaleas, and other flowering plants, in the best of health; but our principal object was to see the Orchids. They are grown in a round house, with a division in the centre. It is a most singular-looking house, and I have no doubt many Orchid growers would object to it, as not

being advantageous to the growth of the plants, but such is not the case, for all were in good condition, and they are a very select collection, not a bad variety among them. The house is low, and you enter by a few steps below the level of the ground. I noticed in bloom Lælia Schilleriana, Vanda tricolor insignis, V. suavis—these were strong plants and blooming well; Masdevallia Harryana, in fine colour; M. ignea, also bright in colour; Odontoglossum Pescatorei, and the lovely Trichopilia crispa, well-flowered; Cattleya citrina, with its bright lemon-coloured blossoms. There were also some fine plants, growing strong, of the rare Vanda Lowii and V. Cathcartii; Odontoglossum vexillarium, a good plant; Lælia elegans, and some fine-grown plants of Cattleya Warneri and C. Mossiæ, with very large sheaths: when in bloom they will produce a fine effect. Odontoglossum brevifolium was a wonderfully well-grown specimen; Dendrobium Wardianum was producing fine bulbs; Barkeria Skinneri was well-cultivated, as also the rare Huntleya meleagris, which latter is a plant seldom seen grown well; there were also many other Orchids which are well worthy of notice. I was glad to see M. Massange exhibit such a good collection of fifteen Orchids in bloom at the Brussels show, for which he obtained a gold medal, also some smaller collections. If these had been in the two houses above mentioned, they would have been a mass of bloom. I also noticed a span-roofed house for growing foliage and decorative plants. There were Cocos Weddelliana, Adiantum farleyense, Kentias of different kinds, some fine specimens of Marantas, Draccena Baptistii, Croton Weismanni, the beautiful Bertolonia Van Houtteana, and also Tillandsia Lindeni, which is a lovely coloured blue when in bloom. There was a fine collection of trained Pear trees on the borders, and a grand plant of Magnolia in full bloom. We can ascribe great credit to both employer and gardener in visiting this collection of plants.

M. Oscar Lamarche. — The garden of this gentleman is situated in the town of Liège, near the Botanic Gardens. It is small, but prettily laid out, with lawn, and at this season of the year good beds of Tulips and other suitable bulbs. At one end of the garden are three houses for Orchids and one for Palms and Ferns. In the Orchid-houses are some well-grown and creditable specimens, so much so that Mr. Veitch and myself would have been delighted could we have brought them and added them to our own collections, for they were surpassingly beautiful. A plant of Odontoglossum vexillarium was especially fine, but to describe all minutely would occupy too much space in your valuable columns, so I will refer to my note-book. The collection is not so large as many that one may see in England, but, much to their credit, it is well selected, and kept clean and healthy. The proprietor of this place also had fifteen Orchids for exhibition at the Brussels show, for which he obtained a large gold medal, and other prizes for Orchids. If these plants had been in the houses instead of at the exhibition the effect for my description would have been grander; but as my time was comparatively short I will commence with the first Orchid-house. The plant that absorbed my attention on entering was Anguloa Clowesiana. It had nine flower-buds from one bulb, and a larger growth than I have ever seen. Odontoglossum Alexandræ was finely in bloom; there were also some good flowers of Sobralia macrantha, which, as a rule, add much to the contrast of colour in a collection; Zygopetalum crinitum was well bloomed, also Cattleya Skinneri, with its rich-coloured flowers. Barkeria Skinneri was good; and in the same house was a fine specimen of Lælia superbiens, promising well for bloom in the winter. Masdevallias are also well grown, and there are also fine masses of Pleione lagenaria, Luddemannia Pescatorei showing bloom; Odontoglossum cristatum was well in bloom, also O. caudatum and Oncidium leucochilum. There were flowers of Cattleya Mossiæ from 7 to 8 inches in diameter, and of a good colour; there were also many other good plants in this house. In the next house were some fine Cattleyas—C. Warneri, splendid plants, showing well for bloom: I have never seen it better than at Liège. All seem to grow and flower it well, also C. tigrina, a charming specimen, and the one named aurea, which I believe to be the same as Dowiana, but with a freer growth. Lælia elegans was fine, purpurata showing well for bloom; Cattleya amethystoglossa was quite at home, also Eldorado splendens; there was a grand specimen of a species of Brassia, with a number of spikes of its curious flowers. In this house the most extraordinary plant is Odontoglossum vexillarium, which was 3 inches across the bulbs. It will be a wonderful sight when in bloom, should it produce flowers in proportion to its growth. Anthurium Scherzerianum, also, with its ever-enlivening scarlet flower-spathes, was finely in bloom. We now entered the conservatory, in which are fine Palms and Ferns, a good plant of Corypha australis, Cyathea princeps, a noble Fern; also Masdevallia magnifica, well in bloom, and other good Orchids. In this house was a fine plant of Todea superba. The next is the East India house, which is span-roofed. On the centre table I noticed some good specimens of Vanda Lowii, V. tricolor in profuse bloom; Vanda Batemanni, a good specimen; also Angræcum sesquipedale. There was a strong plant of Dendrobium taurinum, one that we seldom see doing so well as here; a splendid specimen of Cypripedium Sedeni, which is also rarely seen so good; Cypripedium nævium was also finely in bloom; Phalænopsis Schilleriana and amabilis were thriving well; Aerides virens and odoratum made a good display; Nepenthes were very fine, and also a splendid plant of Adiantum farleyense, which always forms a pretty contrast with Orchids. There were many other fine plants, but they are too numerous to mention now. These two places are well worthy of a visit from any one fond of this class of plants, and I am sure they will receive a cordial reception from their proprietors. I hope to report further in your next issue on some other places well worthy of notice. *B. S. Williams.*

SCHIZANTHUS PINNATUS.

As a bright coloured decorative greenhouse plant of the most simple cultivation this Schizanthus stands perhaps unrivalled. Like many other good old things it is well nigh forgotten, through the rage for new things, some of which have little else than a name to recommend them. The only difficulty I find in growing these plants is to be careful in modifying their rapidity of growth. Like the Balsam, they soon bolt off at an amazing pace, and if kept in anything like a confined atmosphere at an early stage of growth they are spoiled for ever afterwards. In a growing state the young shoots can be twisted and turned into almost any shape that will please the cultivator's taste, but I, for one, do not admire distorted Nature; there is something characteristic in the growth of every plant which should be some guide to the cultivator in training, and depend upon it that any innovation in training which is contrary to the natural growth of a plant will sooner or later die a natural death. The general mode of treatment is even more simple than that of a Zonal Geranium. To have plants in flowers now, the seed should have been sown in the August previously, and when the young plants are potted off they should be kept near the glass in a cool house all winter. After the turn of the year growth takes place rapidly, and then is the time to determine the future size and shape of the plants. It will be found a much simpler process to grow very large plants than to grow small ones; and, as I have pointed out, they can be trained to any imaginable shape, but it is only in their natural form that their true beauty can be seen. In old-fashioned conservatories, with their beautiful heads towering gracefully over smaller growing objects, or arranged promiscuously amongst other plants, they appear to advantage; or what, to my mind, is better still, if they are trained as pillar plants, or against a wall, not formally, the sight is as pretty as any I can possibly imagine. I cannot but think that, if many of our striving amateurs only knew how simple it is to grow these and many other kindred plants, they would make greater efforts to imitate in some degree those who can afford to employ professional skill to carry out their ideas on a large scale. *W. Hinds, Otterspool, Liverpool.*

Forestry.

Active operations must now be carried on with peeling or tan flaying Oak, Larch, Alder, Birch, and other wood, for the sake of the bark for tanning and other manufacturing and chemical purposes. Before, however, commencing to peel wood or timber upon an extensive scale, the trees are usually marked, numbered, and valued by an experienced competent forester on behalf of the proprietor or disposer, and the wood after being bought is cut, peeled, and manufactured by the purchaser at his own expense. The first and most important matter, at least as regards the proprietor's interest, is to see that the proper trees and no others are marked to be cut. The experienced forester knows at a glance whether the tree has attained maturity and reached its highest state of perfection, whether it is sound or diseased, and withal whether under the circumstances it is better to cut and dispose of the tree, or crop of trees, or allow them to stand some years longer.

Oak and other trees are frequently cut and sold for other reasons than that of having attained full growth and perfection. Such, for example, as overshading hedges and farm crops, the roots penetrating and choking drains and water-runs, obstructing the traffic upon public or private roads, or from coming in contact with and injuring the growth of other trees, shrubs, &c. Trees, too, are not unfrequently cut down and disposed of for another and different reason, namely, to realise money. Without further indicating reasons for cutting down, it must be assumed that only such and no other trees are marked for cutting as should be cut, and that to cut and convert them into money is the best and most warrantable thing to do under the circumstances.

Having gone carefully and judiciously to work in marking all the trees to be sold, the next thing to do is to put the true and proper money value upon the lot. There are many methods adopted in doing this, each probably having something in it specially to recommend it. The following is my own, which I have practised with considerable success for many years. Having marked all the trees to be sold with a small axe, initialed on the head with letters for stamping them (as the initials cannot easily be counterfeited, unqualified persons are prevented from marking other than those trees intended to be cut), I next divide the whole into classes according to size, each class numbered separately, under a special letter of the alphabet, in the following manner:—Under letter A smallest size, averaging 10 cubic feet each; under letter B second size, averaging 20 cubic feet; under letter C third size, averaging 50 cubic feet; and when the timber is well-grown and of large dimensions, a fourth class, averaging 60 cubic feet, is added. The smallest class trees are valued at 1*s.* per cubic foot, or 50*s.* per load of 50 feet. The second size is valued at 1*s.* 6*d.* per cubic foot, or £3 15*s.* per load. The third size is valued at 2*s.* per foot, or £5 per load; and the fourth class, when such there is, is valued at 2*s.* 6*d.* per cubic foot, or £6 5*s.* per load. The timber thus marked and classed is either advertised and sold by auction, or private offers are received for it. In either case the disposer's interests are fully secured, since he knows accurately the quantity and value of the timber he is disposing of, and can, since the timber is not cut down or injured in its growth, allow it to stand till a suitable and satisfactory offer is made for it. The purchaser in buying the wood incurs all risks and liabilities connected with the cutting, peeling, harvesting the bark, manufacturing the timber, &c.; and the proprietor having received an offer knows what he is receiving or is to receive, seeing there are no abatements or deductions to be made from the selling price.

One serious risk to the wood-merchant arises from the state of the weather during the bark harvesting, and which no provision can be made to meet. And another, but of a different and controllable nature, arises from injuries the trees sustain in falling. Trees growing in an upright position may be cut without risk in falling, or splitting at the base. With reclining trees, however, the case is widely different. I have seen trees inclining so much to one side that their own weight made them give way before the saw was half way through, and in such cases almost invariably rending the lower and best part of the tree. Various means have been devised to prevent leaning trees from splitting in the process of cutting down, but the simplest and best I have tried is to grub the trees. This is usually very easily accomplished by cutting a few of the strongest roots on that side from which it is reeling. By doing this the tree gives way gently, and if the fall is clear and open for it, there is neither difficulty nor danger in thus falling any such tree.

One great advantage arises from classifying the trees as indicated; it allows the intending purchaser to form a more satisfactory opinion of what he is offering for at the least possible labour and time. It is also a check upon the forester's own figures, as he is thereby enabled to compare the contents and value of the separate classes with the running consecutive

money and timber columns in his marking book. In making up the various averages it is done in the following manner:—Tree class A: No. 1 contains, say, 9 cubic feet ; No. 2, 8 feet ; No. 3 7 feet ; No. 4, 6 feet ; No. 5, 5 feet, and so on—making altogether 35 cubic feet, or an average of 7 feet each. In order therefore to bring up the average to the desired standard (10 feet), there must be as many trees added containing over 10 feet as there are those containing less than that quantity ; and so on with all the other classes. *C. Y. Michie, Forester, Cullen House, May 9.*

Garden Operations.

PLANT HOUSES.

Plant Stove.—Few flowers are more generally esteemed for cutting than Stephanotis. A large plant trained on the roof of a stove will afford an immense quantity of flowers for a few weeks, with a few bunches occasionally for a considerable time. But where cut flowers, especially for bouquets, are continuously in demand, it is better to grow a number of smaller plants, that need not collectively occupy more space than one large specimen. Stephanotis differs from many things in its ability to maintain a healthy flowering condition for years grown under restrictions as to size of pot that will prevent its growing to anything approaching what it will do with more root-room ; but where this is practised the temperature of the house or pit it occupies through the growing season must be considerably lower than would be required for the hottest stove plants, like Ixoras, Dipladenias, and similar heat-loving subjects. During the growing season a night temperature of 56° to 60° is enough, with 10° or 15° rise in the day, according to the weather, and much more air, and consequently a drier condition of the atmosphere, than the generality of stove plants now receive. So managed the growth will not be more than a tenth of that which the plant will make under the treatment it usually receives. It will be very short and compact, and show a bunch of flowers at every joint. During the time growth is being made the plants should have manure-water twice-a-week to sustain them, otherwise the soil will get quite exhausted, for it will be almost as full of roots as in the case of an Agapanthus. As a matter of course the shoots would be trained close to the glass through the growing season, but so that a portion of the plants can be moved in succession to a warmer place in the spring to bring them into flower, and others as the weather gets warm enough put in an ordinary greenhouse temperature to retard them. In this way some may be had to flower late in the summer. The less shade used the better so that the leaves do not get scorched. To bloom Stephanotis in the freest manner possible the wood requires to be made under conditions that will give it more solidity than is necessary with most stove or intermediate house plants. Whatever pruning is required—but under this treatment little will be needed—should be done as soon as the plants have finished flowering. Grown in this cool slow way they will stand without injury, provided the soil is kept dry, a much lower temperature during the winter than when the growth is made in strong heat. Even in private establishments, where large quantities of flowers for cutting are constantly wanted, a small house or pit may with advantage be devoted principally to the growth of this plant, the flowers of which for cutting have no superiors, and but few equals. Many other things will conform to the same treatment, and can be grown in the same house, being in no way injured by the shade afforded by the Stephanotis.

The beautiful and highly fragrant Jasminum, Duchesse d'Orleans, is not yet so well known as it deserves to be ; it can be had in bloom through the autumn and winter, during which season it is an excellent substitute for Stephanotis, although it will never have so many flowers open at the same time. Several plants of this should also be grown ; it is not a very fast grower, but succeeds well in fibrous peat, as it is not an over strong-rooted subject ; the soil should contain a good amount of sand. Plants grown on from this time through the summer, stopped once or twice to induce them to break, and freely syringed to keep down red-spider, will bloom well in the autumn ; the flowers are creamy white, as double as a Carnation, individually the size of a small Daisy. Where old plants of this exist they should be well supplied with weak manure-water through the growing season ; there need be no doubt of its getting too strong. The drainage must always be kept quite efficient, or the plants will make no progress.

The arrangements of cut flowers that in times past would suffice where every imaginable form, colour, and shade were used, will not do now. At the present day a few distinct colours, mostly of a subdued shade, are indispensable. The most chaste and effective arrangements in either vase or bouquet are produced by comparatively few kinds of flowers. The barbarous harlequin-like combinations of an unlimited number of colours will never again be tolerated, although the fashion for individual flowers will no doubt change. But in all cases it is indispensable that they should be of a character to stand for a time when cut ; and, for whatever purpose required, a portion should always be sweet-scented, failing which they lack one of the first and principal essentials. With a sufficient number of plants and means such as above indicated for bringing them into flower in succession, these above-named subjects can be made to fill an important part. Plants of Eucharis amazonica that have done flowering, and are deficient in pot-room, should at once be moved. This plant will bear a larger shift than most things if well managed, in other respects the quantity of flowers it produces will generally be proportionate to the liberal pot-room it receives. Large masses may, where required, now be divided, putting them immediately after into brisk heat. The less known E. candida is a most desirable plant, its flowers individually are smaller than those of E. amazonica; the segments are much recurved, giving it an elegant appearance. Crinums that have finished growing some time ago and have had a rest will shortly require more water and a warm situation to start them into more active growth ; they must not be confined to small pots, or their flowering capabilities will thereby be diminished. If they have not been potted for some time, see that the drainage is sufficient ; for, although they require a liberal supply of water when growing, they cannot bear stagnant moisture. Do not give them too much heat, but allow them plenty of light, otherwise the leaves get drawn, and so long as to be unsightly. *T. Baines.*

FRUIT HOUSES.

Figs.—When the first crop of Figs is gathered, which will soon be the case with very early started trees, resume the treatment as indicated for these in the Calendar for Figs immediately preceding the ripening period ; the conditions which are suitable to perfect Figs properly are likewise identical. With respect to the red-spider at this time that pest will speedily increase and effect a footing on the trees, and to dislodge them will require copious and forcible applications with the syringe, or garden engine where it can be employed, twice every day. An occasional slight admixture of sulphur with the water will promote its extirpation. As the second crop of Figs, under ordinary good management, can safely be depended on, these should be thinned out with a liberal hand at an early stage of development. This matter is highly necessary to secure fair-sized fruits. Healthy trees, particularly those which were planted out, will grow vigorously at this season. Attention to stopping and regulating will be necessary at least once-a-week. Stop the terminal growths when they reach the limit of the trellis or wall, and the laterals which have already been pinched at the fourth or fifth leaf, should be pinched again at the first leaf.

Continue, as before advised, the treatment as suggested for ripening crops, and in gathering the ripe fruit its condition must mainly depend on the purpose for which it is intended ; if for home consumption let it be perfectly matured before doing so, otherwise it will be necessary to effect it at an earlier stage. *G. T. Miles, Wycombe Abbey.*

Vines.—The continuance of unusually cold weather so late in the season will have necessarily caused a large consumption of fuel to keep up the temperature required for the production of early Grapes, and, as a natural consequence of the application of so much artificial heat, that pest of Grape growers, red-spider, may be expected to put in an appearance. Where this is the case, maintain as moist an atmosphere as is consistent with the ripening of the fruit, and give the pipes or flues a wash over with sulphur well mixed up in water previous to using, and applied with a soft brush over the whole of the surface heated. In using this great care is requisite both in applying it in moderation, and also in not allowing the pipes or flues to become overheated, as in this case the remedy may become worse than the disease, from the destruction of the foliage by the fumes of the sulphur. A safe guide is, that the heating surface should not be warmer than that the hand can remain upon it without inconvenience ; and when flues are brought into the house near the fire, the sulphur should not be used on the more heated portions. Close early, and give air sufficiently early to prevent any condensation of vapour. With proper attention, three or four days are sufficient to effectually destroy the insects, when the sulphur should be washed off, and entirely cleaned away. Thrips also are occasionally very troublesome if allowed to spread, as not only the foliage but the footstalks of the fruit, and even the latter are much disfigured. If observed on its first appearance one good fumigating with tobacco-paper may be sufficient, but to ensure success it is better to fumigate the house three alternate evenings in succession, so as to ensure the destruction of the larvæ as it attains life. The general instructions given in last Calendar still hold good, as to general management. Late started Vines should continue to have the assistance of fire-heat while the nights continue so cold : the temperature of the house in early morning should not be lower than 60°, and as the bloom gets near to expanding, raise the temperature by night to 65°. In the case of Muscat or other late ripening kinds a few degrees more may be desirable—a brisk heat and a somewhat drier atmosphere during the blooming process being essential to produce well developed bunches with the berries properly set. To aid the latter process it is also well to give the Vines a gentle shake each morning, so as to cause the pollen to disperse itself freely through the house. Even with this some kinds do not always set freely, and such should be fertilised by hand, as previously recommended. *W. Cox, Madresfield.*

HARDY FRUIT GARDEN.

The Pear trees generally will now be sufficiently advanced in growth to require attention to stopping. It is far better to stop the breastwood shoots now at a few joints than to follow the old plan of leaving them till midsummer. This is applicable alike to wall trees, and also to pyramid, bush, and espalier trees in the open quarters ; and during the operation the thinning of the fruit should be carefully attended to, removing first all misshapen and imperfect fruits, and thinning the remainder, so as to leave a crop fairly proportioned to the strength of the tree. It is a great mistake to permit overcropping in any fruit trees ; it entirely militates against the attainment of a fairly regular crop every year, and reduces the chances to alternate years, and sometimes longer, according as the exhaustive process has been greater or less, besides very greatly influencing the quality of the fruit itself. In the process of the manipulations necessary for Peach and Nectarine trees at this time, it will be seen that some of the shoots, particularly the terminal ones, or those farthest from the centre, show a decided tendency to very strong growth. This must be checked at once by pinching back to about three leaves, which will tend to equalise the vigour of the tree, and, as the shoots thus stopped will break again, the succeeding shoot should be trained on as a bearing shoot, stopping again, however, if too gross in growth. Apricots may now be thoroughly disbudded and regulated, and the fruit thinned for tarts if too thick. Remove entirely all gross and misplaced shoots ; pinch back the side shoots to three or four leaves, and train out the leaders at full length. Also lay in some side shoots where there is room, but avoid overcrowding with too much wood. Vines on the walls will now require attention by removing all superfluous shoots from the spurs, leaving only one good shoot to each spur. As soon as these have advanced two joints beyond the fruit stop them at once. Keep the garden engine at work as often as possible on fruit trees of all kinds, as the oftener this is done the less opportunity will there be for insect depredators to obtain a lodgment, besides which the water will be of great service ; indeed, water is a most powerful element of success in the cultivation of all stone fruits, and must be liberally supplied in all the earlier stages of growth. Continue the process of hand-picking for the destruction of the Gooseberry caterpillar, which, if left unchecked, will soon denude a tree of all its foliage. *John Cox, Redleaf.*

Orchard-houses.—Although cold easterly winds have prevailed for some time the days have been bright and sunny, and suitable for colouring and ripening Peaches, Nectarines, and Apricots in the earliest forced houses. If the fruit is at this stage, see that there is a free access of sunlight and air amongst the trees by shifting the pots to the best position for this purpose. With me the Early Louise, Hale's Early, and Early York Peaches have ripened some nice-flavoured fruit where grown in pots. Hunt's Tawny Nectarine has likewise ripened good fruit, and will be succeeded by Rivers' Lord Napier and others. The trees about ripening their fruit will not want watering at the roots so often until the fruit is gathered, and a drier state of the air of the house will be requisite for the perfection of the quality of flavour. The trees in the unheated houses will now have developed their young wood, as well as have set their fruit, which had better not be thinned too much until the stoning period commences. During the time these cold easterly winds last, the ventilation in the daytime will require attention, so as to prevent cold draughts from the exposed aspects as much as possible. Still keep pinching-in and regulating the shoots where growing vigorously, so that the fruit-bearing wood for next year may be properly balanced. Cherries are sometimes attacked with the black aphis, which may be easily destroyed by dipping the shoots affected in a weak tobacco-water mixture ; and when grubs are seen on the Apricots or Plums, by their rolling the foliage up, they must be crushed by the finger and thumb, as no mixture will reach them. *William Tillery.*

THE

Gardeners' Chronicle.

SATURDAY, MAY 20, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, May 23 { Sale of Orchids, Tree Ferns, Palm Seeds, &c., at Stevens' Rooms.
Royal Botanic Society: Summer Exhibition at Regent's Park.

WEDNESDAY, May 24 { Tiverton Horticultural Society's Grand Show (two days).
Sale of the Pine-apple Nursery Company's Stock at Maida Vale (four days).

THE most definite step that has yet been taken with regard to the promotion of an INTERNATIONAL HORTICULTURAL EXHIBITION and BOTANICAL CONGRESS in LONDON similar to that of 1866 was taken on Wednesday last, when the Executive Committee of the 1866 Exhibition met together and decided unanimously, on the proposition of Professor BENTLEY, seconded by Mr. HARRY VEITCH, that "it is desirable to hold an International Horticultural Exhibition and Botanical Congress in London in the year 1879, provided a suitable site can be found."

Subsequent resolutions provided for the formation of a provisional committee for the purpose of giving effect to the foregoing proposition, the committee to consist of the members of the former body, with power to add to their numbers. Of this provisional committee Dr. MASTERS was requested to act as Chairman, and Mr. THOMAS MOORE, Botanic Garden, Chelsea, as Secretary.

After considerable discussion as to time place, and means, the meeting was adjourned with the understanding that in a few weeks a general meeting of the horticultural body would be convened for the purpose of eliciting the opinions of the promoters.

At the meeting of the Horticultural Club, 3, Adelphi Terrace, the same evening, the committee decided to place their meeting-room at the disposal of the committee for carrying out the proposed International Exhibition.

So far then the ground is cleared, public acknowledgment has been made that it is desirable to hold such a gathering, and this not only in the interests of horticulture and of those associated with it, but also as a means of showing that we are not insensible to the profuse hospitality and courtesy shown to British horticulturists in Russia, Italy, Austria, France, Holland, Germany, and, last not least, not once but repeatedly in Belgium. In all those countries British horticulturists and botanists have been received not only with cordiality but with hospitality and marks of attention which have produced a profound impression. Emperors and kings have not thought it beneath their dignity to receive their foreign guests, to accord them the hospitality of their palaces, to mix with them and confer on them various marks of honour and consideration. Their subjects have followed suit. It is useless to expect that we can rival foreign nations in that particular, but we can do a great deal towards returning the hospitality shown us, and it is our duty to do it. We believe this to be felt universally by the leading exhibitors of the country.

Then comes the question of time. Next year, 1877, Amsterdam for the second time proposes to receive the horticulturists and botanists of the world. In 1878 the Ghent Quinquennial Exhibition will be held, and our French neighbours propose to hold a general international exhibition on a gigantic scale. It was, therefore, thought by the provisional committee above referred to, that it would be better to fix on the year 1879, at present not proposed to be occupied by any similar undertaking. The delay will also give ample time for growers to prepare their plants, and for the organising committee to mature their plans. Still we think it is an open point whether 1878 should not have been selected, as a feeling of enthusiasm had been growing with reference to the matter, which will be damped by delay. Moreover the Ghent quinquennial is held early in the spring, and would probably not materially interfere with the prospects of an exhibition held in this country six weeks later, while as to the Paris exhibition, presuming that the arrangements in that city would be somewhat similar to those in 1867, the difference between the two Exhibitions would be so complete that nothing like interference or antagonism need be feared.

As to the site great discussion took place, and, as we think, somewhat prematurely, especially if the exhibition is to be held at so remote a period as 1879. Some suitable site can surely be found in due time, and places not available now, may present themselves hereafter. We are by no means insensible to the importance of this question, but deem it one for future rather than present consideration. As to the ways and means, it was considered that a sum of £15,000 or £16,000 would be needed, and little doubt was expressed that this sum would be forthcoming. But if the year 1879 be definitively adopted, there is plenty of time to consider this and other matters.

THE splendid collections of SCIENTIFIC APPARATUS now on view at South Kensington may not have any great interest or attraction for the general public, for whose taste the display is too technical and unintelligible. To the more thoughtful visitor, and especially to the student, the collection is rich in interest and suggestiveness. Here, for instance, are many of the very instruments by which the world has been quietly revolutionised—here is the apparatus to which we owe, in a degree, the necessities, the comforts, the luxuries of life in the nineteenth century. Here are GALILEO'S own instruments. Here is "Puffing Billy," and its brother, the "Rocket," the earliest of locomotive engines. Here are some of the earliest forms of microscopes and telescopes side by side with the apparatus used by such men as ROBERT BROWN and Sir W. HOOKER.

Foreign countries have vied with our own in sending the instruments and apparatus made use of in their schools and laboratories for purposes of research and instruction. We have not yet been enabled to do more than glance at this splendid collection, but we may say that the departments most interesting to scientific horticulturists are those of chemistry and biology. In the latter group the principal classes of objects are microscopes of all kinds, including some of great historical interest; physiological apparatus for investigating the growth and mechanical movements, the chemical and electrical phenomena of living organisms, apparatus for collecting and preserving objects of natural history, appliances for teaching biology, and many others. The whole thing has been organised and got together so quietly that even among scientific men little or nothing was known about the proceedings till the last moment, and the extent and value of the collections has come upon them as a surprise.

Among objects most worthy of the attention of scientific cultivators are the balances and other apparatus made use of by Messrs. LAWES and GILBERT in their famous researches on the amount of water evaporated from plants, and on the question whether plants assimilate free or uncombined nitrogen. The same exhibitors also show a large case, showing the enormous differences existing in the proportionate quantities of the same plants in grass plots treated with different manures. Statistical and other maps relating to the Hop growing districts of Central Europe ought to interest our Hop growers, and the splendid series of geological maps should be looked at with interest by both farmers and gardeners.

Large as is the collection, we have no doubt that its interest and value might have been enhanced had greater publicity been given to the scheme. As it is some departments, especially in the case of vegetable physiology, appear to us to be but meagrely represented. This, however, is a mere passing impression, which may be removed by more careful examination. We propose to revert to the subject on another occasion.

FROM Ghent we learn that a committee has been formed, under the presidency of Count KERCHOVE, to raise a monument to the late LOUIS VAN HOUTTE. On the occasion of the meeting of the Royal Horticultural Society on Wednesday last the propriety of inaugurating a similar movement in this country was unanimously affirmed, but no formal steps were taken, it being considered preferable to await further information from Belgium as to the precise form which the Belgian memorial is to take. There is, however, no doubt that our horticulturists will gladly embrace any opportunity of showing their respect for so remarkable a member of the fraternity, and that they are prepared to act either independently or in co-operation with their Belgian friends, as may hereafter be considered best. In the meantime we shall be pleased to receive any suggestions on the subject, which shall be duly laid before the committee which it is proposed to form.

—— IN the current number of the *Journal of Botany* Dr. SPRUCE alludes to a NEW GENUS OF LIVERWORT, which he calls Anomoclada, from the forests of the Uaupes River. The plant is remarkable for a mucous exudation from the surface of the stipules, and which serves to detain insects that alight upon it. Elaphoglossum glutinosum has the same property, as also many Nyctagineæ. Dr. SPRUCE was unable to detect any digestive property in the Hepatic above mentioned, though he admits the probable existence of such a faculty in South American Droseras and Pinguiculas.

—— The following summary of the best MODE of POTTING, which we take from the *Villa Gardener*, may be useful to amateurs and beginners: Use only and always clean pots and clean crocks, dispose them so as to allow free egress to the water; regulate the quantity by the size of the pots and the purposes or plants for which they are used, and use either rough pieces of soil, cocoa-fibre refuse, or clean moss or sphagnum, to cover the crocks, and hinder the fine soil from blocking them up.

—— According to some remarks of M. MARTINS, of Montpellier, cited in the *Belgique Horticole*, the intensity of cold at night diminishes up to a certain height, or, in other words, that in clear nights there is an elevation of temperature in proportion to the height. This phenomenon, well known alike to scientific observers and to cultivators, was tested by M. MARTINS by placing thermometers in the botanical garden and at various heights on the cathedral tower—that is to say, from 0.05 m. to 49.4 m. above the level of the ground. In clear nights the increased warmth at a higher elevation is the most perceptible, in dull nights there is little or no difference. The reason of the greater injury inflicted on the lower branches of shrubs, &c., is thus accounted for. Another communication in the same journal refers to the lighting of conservatories by petroleum gas, which is found to be destitute of the injurious properties of coal gas.

—— The *Planters' Gazette* draws attention to a NOVEL USE OF PAPER. "The genius of the American inventor," it says, "has found out this new use. Wine long stored in the wood was discovered to have suffered from the contact; so American growers availed themselves of the idea of abolishing wooden casks, and using those made of paper. It was done, and is pronounced an entire success. The new fabric answers the purpose so well that its use for storing liquids, &c., promises to become general.

It is made by some peculiar process, the principal material employed being Rye or Barley straw. It is water or wine proof, so that none of the contents can be lost by leakage, absorption, or evaporation; nor are these casks liable to become charged with the gases liberated in course of fermentation. It was at first doubtful whether this new wine 'pipe' could withstand the pressure produced during the process of fermentation, but that question was definitely settled by one of them resisting an experimental strain of 4000 lb. Another point in their favour is that the new casks occupy much less space in storage than the wooden ones, their shape being cylindrical, which allows of an economy in stowage computed at 15 per cent."

—— We understand that Messrs. Veitch & Sons have sent to the great International Exhibition at Philadelphia a collection of about 150 specimen Hollies, Conifers, and Rhododendrons, which have generally arrived in a good state, notwithstanding the length of time they were enclosed in packing-cases, and are likely to prove a very interesting feature in the show, if they can be got into their places within a reasonable time. The arrangements are, however, in a very backward state. Mr. Williams' consignment of plants has also arrived (see p. 666), for the most part in a satisfactory state. Some of the American nurserymen, as Mr. Such, of South Amboy, are making preparations for a good display of choice plants.

—— Our horticultural exhibitions of the past few years have to some extent familiarised us with the fine forms of the Japanese Flag Iris, I. Kempferi, and its varieties. These appear to increase with rapidity, and all are very beautiful. Their large flat Clematis-like flowers, generally rich in colour and very beautiful, makes them very attractive, and it is no wonder they are being sought after by lovers of flowers. They are without exception the most exquisite forms of the Iris in cultivation, but they do not flower freely in all soils, and they need careful treatment to bring about this desired result. A sandy peat is recommended, for it has been found they make a vigorous growth in it, and when the plants are established bloom with great freedom. Complaints are often made of the loss during the autumn and winter of the roots of the bulbous Iris, and this is caused by planting them in tenacious soil in which the water lies after heavy or continuous rains. If the soil is naturally light the bulbs can be planted and allowed to establish themselves, but if heavy it must be made light. Mr. W. Sutherland has remarked that "there are very few places indeed where naturally the conditions of soil and climate which are indispensable to the bulbous Irises exist; the first year is the best in many places, and in many others they never rise the second year at all." Hence the necessity of so preparing the soil as to ensure well-being in the present, and longevity in the future.

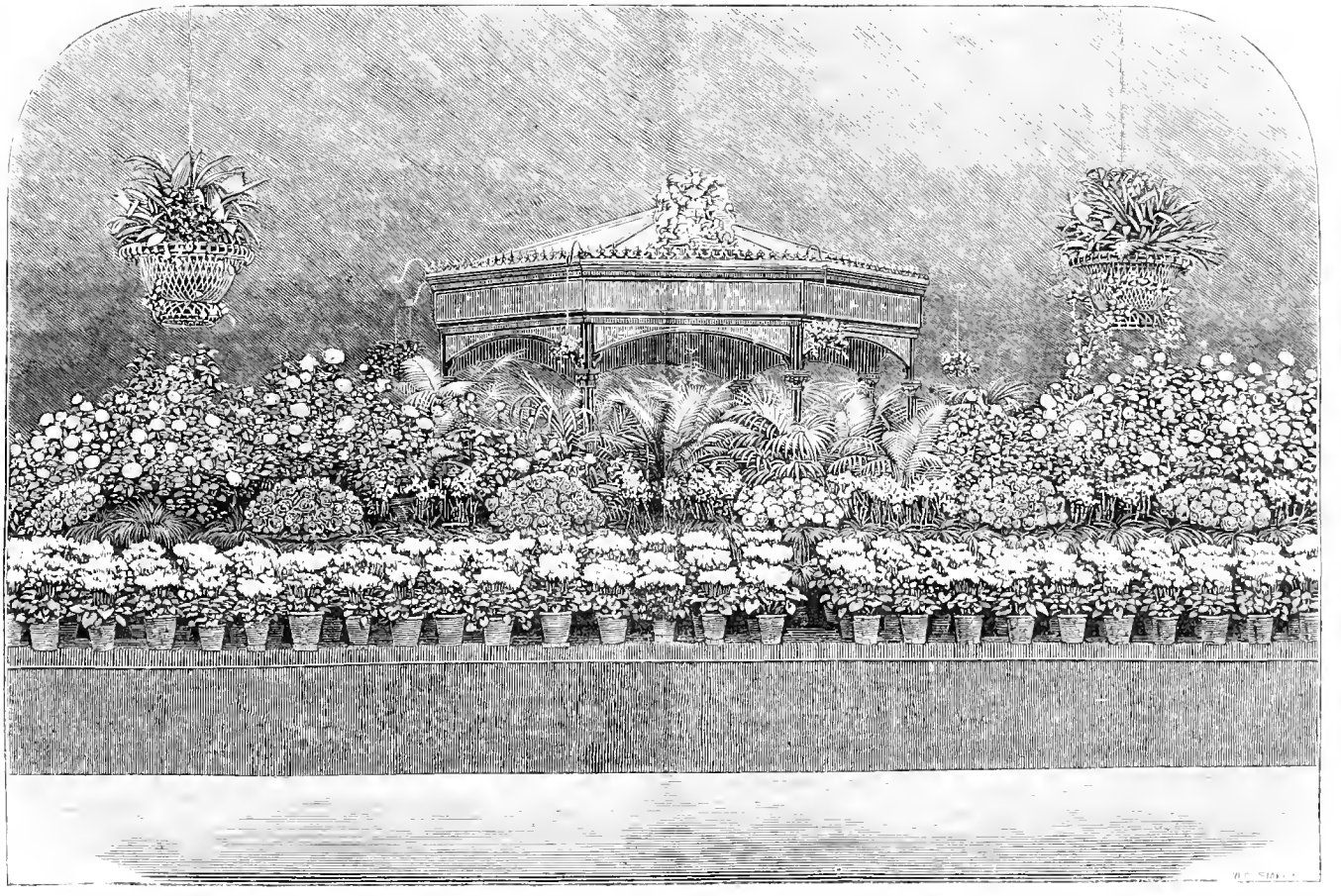

Fig. 120.—Group of Roses at the Royal Aquarium Exhibition (from a photograph).

—— The continuation of Professor De Bary's Paper on the Potato Fungus is given in the current number of the *Journal of Botany*. Referring our readers to p. 506 for an abstract of the former part of this communication we may now refer briefly to the remainder. As regards the existence of the Potato fungus on other plants than the Potato, De Bary notifies its presence on Schizanthus Grahami. The Professor then alludes to the circumstance that the spawn of the Potato fungus may live throughout the winter in the tubers of the Potato; hence in such a case the disease might sometimes be propagated by means of diseased tubers, and of tubers healthy at the time of planting, but destined soon to become diseased from the attack of the fungus which had hibernated in other tubers. There are thus two ways in which the living fungus that has survived the winter, may in the spring find its way to the fields with the seed. In both cases the fungus is placed in the earth along with the tuber, and cannot there leave it; the fungus must die, and become corrupt in and with the tuber. It may, however, find its way to the foliage, and attack it. The facts observed prove that there are two methods by which the conidia (bud-spores) may pass from the tuber to the haulm:—1, The bud-spores may be formed in the tuber, and be carried up to the foliage in course of growth, or by other means; 2, the mycelium spawn may grow from the tubers up through the haulm and foliage, and there produce bud-spores. M. de Bary then goes on to detail the results of several experiments that he made in inoculating Potatos with the fungus—experiments of a very interesting character, but for which we are compelled by exigencies of space to refer to the *Journal of the Royal Agricultural Society*, or to the *Journal of Botany*. The general result is that, according to De Bary, resting-spores have not been found in the district round Strasburg, but that the perennial spawn hibernates and grows again in spring, and thus fulfils the office of the resting-spore itself. So long as conidia (bud-spores) are not formed, Prof. de Bary (if we understand him rightly) speaks of the fungus as harmless. We presume he means harmless with reference to extension of the pest. In conclusion, attention should be directed, says De Bary, to the possibility of there being a connection between the phenomena observed in the appearance of the Potato disease, and the fact that the plant in its various stages of development supplies a varying nidus for the fungus. From large experience he concludes that the Phytophthora—(the new genus made by De Bary to include the Potato fungus, and which he says presents technical characters different from those of Peronospora)—grows more easily on plants at the height of their development than on young stalks and leaves.

—— Mr. Albert Müller has sent us a number of cuttings from the *Basler Nachrichten*, from which we extract the following scraps of news. The 1875 vintage of the circuit or district of Laufenburg was a very successful one, the produce being large, and of excellent quality. The total value of the wine made is estimated at about £40,000. The circuit of Baden produced wine to the value of upwards of £30,000.

The storms that prevailed about the middle of last winter caused a vast amount of damage in different parts of Switzerland. In the forests of the small commune of Zofing alone it is reported that 5700 trees were prostrated; and in Treyvaux the amount of damage caused by the wind was estimated at £1200. A sudden change in the appearance of the country is recorded from Saignotte. Ripe Strawberries were plucked at the end of October, and about a week later the whole country around was enveloped in a mantle of snow. A few lovers of gardening in Lausanne intend organising a horticultural exhibition on the occasion of the forthcoming rifle competition of the Confederation. The *Bauernverein* of the canton of Luzerne have engaged a qualified person to give a course of lectures on kitchen-gardening to the daughters of the small farmers, with a view to their being better qualified to meet the requirements of their households, and to raise garden produce for the markets. Hence it would appear that it is not simply as an accomplishment that the sturdy Swiss girls are to be instructed in practical gardening, or perhaps to amuse themselves in the flower garden, but for the purpose of enabling them to cultivate a better quality and greater variety of vegetables for their own tables, and to send to market to increase the family income.

—— At a recent meeting of the French Acclimatisation Society there was an interesting discussion on the value and prospects of the American Varieties of Grapes which have been largely planted in some of the districts where the ravages of the Phylloxera have been greatest. In the Herault alone some fifteen million American Vines have been planted, and great hopes of success are entertained. The variety called the Clinton has been extensively planted, and, whilst some members stated their experience of it as a shy bearer, it was stated that as many as 180 bunches had been gathered from one cane. The wine produced by it is said to be highly coloured, and without the unpleasant flavour commonly attributed to it, and almost as rich in alcohol as Roussillon. The unaminous opinion was that the American varieties suffer less from the Phylloxera than the French ones, and, if not so valuable for their fruit, they are at least of great use as stocks.

—— A great Exhibition of Roses and other plants will be held at Spa, on June 25, 26, and 27 next. The exhibition, which bids fair to be of some importance, is open to foreign exhibitors. Application should be made to M. le Maire de Warzée, Casino, Spa.

—— The Society of Rose Growers of Lyons propose to hold a special Exhibition of Roses on June 2, 3, 4, and 5, at Lyons, in the Place Bellecour. M. Jean Sisley is the secretary.

—— The Weston-super-Mare and East Somerset Horticultural Society will hold its fourth annual exhibition on August 15 and 16. Amongst the prizes offered we notice the liberal amounts of £20, £12, and £6 for twelve distinct varieties of stove and greenhouse plants, in or out of bloom, Orchids excepted.

—— We find that the Universal Translation Institute, Mark Lane, is now under the direction of M. Ernest Bergman, a son of M. Bergman, the well-known superintendent of the gardens of Baron Rothschild, at Ferrières. We can speak from experience of the fidelity with which translations from the German of a somewhat technical character have been made by this Institute; and as horticultural commercial enterprise is now so widely spread the value of such an Institute becomes proportionately great.

—— Mr. Robson has retired from the management of the gardens at Linton Park, the seat of Viscount Holmesdale, and is succeeded by Mr. Albert McLean, late gardener to the Earl of Wemyss at Gosford. Mr. Robson's retirement, we regret to say, has been brought about by ill-health, but we are glad to hear that his salary will be continued as usual.

—— We understand that the Amaryllids in particular, at Meadow Bank, offered for sale on May 25 and 26, are now in fine flower. Amongst those to be then offered are to be found some magnificent varieties; as also some choice Orchids, and many fine specimen Azaleas.

—— Dr. Asa Gray is contributing to the *American Agriculturist* a series of illustrated articles, entitled How Flowers are Fertilised, in which the different arrangements for ensuring cross fertilisation and avoiding self-impregnation are illustrated.

—— Now that Pine Culture has become so general in the Azores, the following particulars, from the *Cultivador*, with regard to the temperatures, may be of interest. The figures are according to the Centigrade scale:—

	Mean Maximum.	Mean Minimum.	Mean.
December	17.08	12.08	15.02
January	16.20	11.29	14.10
February	16.46	11.31	14.27
March	16.14	10.45	13.75
April	17.72	11.80	15.24
May	19.25	13.13	16.57
June	21.03	15.29	18.88
July	24.15	17.60	21.34
August	24.79	17.96	21.87
September	23.59	16.97	20.80
October	20.94	15.68	18.55
November	19.29	14.52	17.37
Winter	16.58	11.56	14.46
Spring	17.70	11.79	15.19
Summer	23.52	16.95	20.70
Autumn	21.27	15.52	18.91
Year	19.77	13.95	17.31

—— The flowering of Arundinaria falcata, of which we have seen two instances lately, is the more noteworthy as in various parts of France, as we learn from the *Revue Horticole*, the plant flowered last autumn. The flowering of Bamboos is generally a seemingly capricious circumstance, but this is by no means the only instance of the nearly simultaneous flowering of a plant in widely different countries. This is a phenomenon which has not yet received a satisfactory explanation.

—— The lowest temperature registered in what is technically called the "Winter" of 1875-76 in the fifty places in England and Wales included in Mr. Glaisher's report to the Registrar-General on the weather was 10°, which minimum was recorded in January last at Beckenham, Kent, and also at Lampeter, Cardiganshire. It will be of interest to note the lowest temperature recorded in the course of the winter at such watering-places as are in the list. The lowest registered by the Rev. Mr. Quelch at St. Augustine's Monastery, Ramsgate, was 23°.5; by Mr. J. R. Mann, at Osborne, 22°.8; by Mr. F. E. Sawyer, at Brighton, 22°.6; by Dr. Compton, at South Bourne, near Bournemouth, 22°.2; by Dr. Nicol and Dr. Dalton, at Llandudno, 22°.2; by Mr. A. E. Murray, at Hastings, 20°.9; and by Miss W. L. Hall, at Eastbourne, 17°. At Eastbourne and South Bourne the greatest cold was in December, but in most places it was in January.

—— The last number of the *Illustration Horticole* which has reached us has a plate of Dieffenbachia latemaculata var. illustris, tab. 235, a pretty spotted and marbled form. Eranthemum roseum, tab. 236, is remarkable chiefly for the claret-coloured under-surface of the leaves.

—— In concluding a course of six lectures to working men on the evidence as to the Mode of Origin of Existing Animals, Professor Huxley, as reported in *Nature*, said with reference to the Genealogy of the Horse:—

"This evidence is conclusive as far as the fact of evolution is concerned, for it is preposterous to assume that each member of this perfect series of forms has been specially created; and if it can be proved—as the facts adduced above certainly do prove—that a complicated animal like the horse may have arisen by gradual modification of a lower and less specialised form, there is surely no reason to think that other animals have arisen in a different way." [The most striking evidence is afforded by a fossil horse, Orohippus, found in eocene rocks of North America.] "This case, moreover, is not isolated. Every new investigation into the tertiary mammalian fauna brings fresh evidence tending to show how the rhinoceros, the pigs, the ruminants, have come about. Similar light is being thrown on the origin of the carnivora, and also, in a less degree, on that of all the other groups of mammals. It may well be asked why such clear evidence should be obtainable as to the origin of mammals, while in the case of many other groups—fish, for instance—all the evidence seems to point the other way? This question cannot be satisfactorily answered at present, but the fact is probably connected with the great uniformity of conditions to which the lower animals are exposed; for it is invariably the case that the higher the position of any given animal in the scale of being, the more complex are the conditions acting on it. . . . The accurate information obtained in this department of science has put the fact of evolution beyond a doubt; formerly, the great reproach to the theory was, that no support was lent to it by the geological history of living things; now, whatever happens, the fact remains that the hypothesis is founded on the firm basis of palæontological evidence."

—— At the recent dinner at the Mansion House to the representatives of science, botany and horticulture were appropriately represented by Dr. Hooker, C.B., the President of the Royal Society, and Mr. Thiselton Dyer, the Assistant-Director of the Royal Gardens, Kew. At the dinner given the previous week to the representatives of literature, the horticultural press was represented by Mr. Shirley Hibberd.

ROSE-GROUPING AT THE ROYAL AQUARIUM.

The formal, ungraceful, monotonous effect produced at an ordinary show of cut blooms of Roses by the long lines of packing trays on which they are set up for exhibition is well-known, and the uncouth, not to say ugly, appearance they present has often been the subject of comment. But notwithstanding this little or nothing has been done to bring about a better and more pleasing mode of staging the flowers, which are themselves so beautiful and so popular that the visitors, so long as they can enjoy the Roses, have not been very critical as to the mode in which they are presented to view. There is, however, no reason why a reform in this particular should not be brought about, for whoever introduces a better and practicable mode of setting up cut Roses will have done a notable work towards improving our exhibitions of these charming flowers.

The accompanying illustration (fig. 120) shows—not in a very satisfactory way, it must be confessed—what was done with a few cut Roses at the first flower show held at the Royal Aquarium by Mr. Wills. The arrangement was highly suggestive of what might be attempted with some reasonable hope of being effectually carried out. The splendid blooms of Maréchal Niel which occupied the circular baskets represented in middle ground of our figure, were the gems of the composition, and we are bound to say they would not have produced a tithe of the effect they did as a picture in the show, had they been set up in the usual way. Neat circular baskets, happily hit off as to size, and so filled as to form gently convex bouquets at regular intervals, were associated with a background of small Palms, a carpet of Isolepis, and a fringe of Cyclamens, and the effect was simply charming. We are looking forward to other improvements when Mr. Wills comes to deal with a greater quantity of cut Roses at the summer shows.

One thing, however, must be kept in mind. It is not the circular basket, nor the convex setting which gives the charm; this is rather to be attributed to the neatness and finish imparted by the *artiste*. Coarse-looking brown willow packing baskets, with dingy-coloured moss appearing amongst and around the flowers, want the charm which led everybody to admire Mr. Wills' arrangement as here sketched. If baskets are used, they must be of clean-barked willow, cane, or other neat material, white or stained, and the flowers and foliage must be made to hide the mossy stuffing necessary beneath to hold up the flowers.

Some arrangement of this kind would, moreover, be a great improvement in the setting up of the minor groups of say half-a-dozen small competition plants. A group of Auriculas, for example, so set up by Mr. Turner, at the Aquarium show of last Wednesday, was very nearly perfect in this respect. Had they occupied a somewhat smaller basket of neater construction, and had a little more care been exercised in the selection of the moss in which they were set, no prettier object than this basket of Auriculas would have been seen upon the tables.

GARDEN VEGETATION FOR APRIL.*

THE month of April has been very variable, attended with much wind, snow, and rain, with the exception of one week towards the beginning, when mild weather prevailed. On six consecutive mornings, viz., from the 4th to the 9th, inclusive, the thermometer at 6 A.M. registered between 44° and 57°, the highest being on the morning of the 5th. During the month the thermometer was fourteen times at or below the freezing point, indicating collectively 69°, being considerably more than has been registered during any month of April for many years, certainly not during the last twenty-two, as will be seen by the accompanying table.

This table gives the number of degrees of frost registered during each month, from October 1, 1854, till April 30, 1876. The lowest temperatures indicated during the month were on the mornings of the 2d, 3d, 11th, 13th, 17th, 23d, and 30th, when 25°, 27°, 26°, 20°, 27°, 25°, and 25° were respectively registered, while the highest morning temperatures were on the 4th, 5th, 6th, 7th, 8th, and 9th, when 45°, 57°, 50°, 50°, 44°, and 44°, were indicated. The cold, backward, and changeable weather experienced during the greater portion of April has been very much against vegetation, many of the trees being still in their winter condition; the moisture, however, which they were subjected to towards the end of the month has swelled the buds considerably, and rapid progress may be expected during May. Such an excess of rain penetrating the ground before the leaves expand generally brings a rich and full foliage, which is rarely the case when the leaves come out during very dry weather, unless in situations where the ground is naturally damp. Hardy spring flowers were also far behind, and many of them much injured with the frost. After the mild weather noticed as having occurred during the beginning of April, and afterwards followed by several frosty mornings, the lowest marking was on the 13th, when the thermometer indicated 12° of frost. This sudden change of temperature has injured many coniferous shrubs, particularly those belonging to the Cupressineæ group, also a few species of Juniperus and Pinus. The injury to the Cupressineous section was probably hastened by the sudden change of colour which most of them assumed, and noticed in my reports for January and March — the surface shoots of many of them being now destroyed, and in some cases the plants appear to be quite dead. A large proportion of the species injured are of Eastern origin, and a few are natives of the western hemisphere. Piceas and Abies have all stood well. The following is a list of the species which have suffered most:—

Thuja orientalis compacta,
„ „ pygmæa,
„ „ glauca,
„ „ globosa viridis,
„ „ pyramidalis,
„ gracilis conica,
„ Fortunei,
„ incarnata,
„ aurea,
„ elegantissima,
Cupressus sempervirens,
„ torulosa,
Taxodium sempervirens,
Retinospora ericoides,
„ leptoclada,
Juniperus tripartita,
„ drupacea,
„ chinensis,
„ cracovea,
Pinus insignis,
„ muricata,
„ Brutia,
„ densiflora,
„ patula,
„ caroliniana,
„ Don Pedri.

On April 30, 122 species of alpine and dwarf herbaceous plants were counted in flower on the rock garden, the most conspicuous being

Andromeda fastigiata,
„ tetragona,
Anemone apennina,
„ bracteata,
„ Robinsoniana,
„ „ alba,
Berberis Darwinii,
Bryanthus erectus,
Coptis trifoliata,
Draba aizoides,
Epigæa repens,
Erica australis nana,
„ hibernica alba,
„ „ stricta,
Erythronium americanum,
„ giganteum,
„ „ roseum,
Gentiana verna,
Hutchinsia alpina,
Iberis gibraltarica,
Menziesia cœrulea,
„ empetriformis,
Polygala Chamæbuxus,
Primula ciliata purpurata,
„ cortusoides,
„ purpurea,
„ scotica,
Pulsatilla bracteata,
„ vernalis,
Ranunculus amplexicaulis,
Rhododendron Chamæbuxus,
Rhodora canadensis,
Saxifraga, various species,
Sanguinaria canadensis,
Trillium grandiflorum,

The spring plants noted below complete the list of species annually recorded, to show their periods of flowering.

	1876.	1875.
Hyoscyamus physaloides	April 2	March 31
Narcissus Pseudo-Narcissus ..	„ 3	April 1
Adonis vernalis	„ 5	March 29
Fritillaria imperialis..	„ 6	April 18

* Read by Mr. McNab at the May meeting of the Botanical Society of Edinburgh.

TABLE SHOWING THE NUMBER OF DEGREES OF FROST REGISTERED DURING EACH MONTH, FROM OCTOBER 1, 1854, TILL APRIL 30, 1876.

	October.		November.		December.		January.		February.		March.		April.		
	Number of Mornings the Thermometer was at and below the Freezing-point.	Amount of Frost Registered during each Month of Oct from 1854 to 1876.	Number of Mornings the Thermometer was at and below the Freezing-point.	Amount of Frost Registered during each Month of Nov. from 1854 to 1876	Number of Mornings the Thermometer was at and below the Freezing-point	Amount of Frost Registered during each Month of Dec. from 1854 to 1876	Number of Mornings the Thermometer was at and below the Freezing-point.	Amount of Frost Registered during each Month of Jan. from 1854 to 1876.	Number of Mornings the Thermometer was at and below the Freezing point.	Amount of Frost Registered during each Month of Feb. from 1854 to 1876.	Number of Mornings the Thermometer was at and below the Freezing-point.	Amount of Frost Registered during each Month of March from 1854 to 1876.	Number of Mornings the Thermometer was at and below the Freezing-point.	Amount of Frost Registered during each Month of April from 1854 to 1876	Total Amount of Frost Registered during each Year from Oct 1, 1854, till April 30, 1876.
		°		°		°		°		°		°		°	
1854-55	5	20	7	21	8	21	16	100	22	225	22	66	11	49	521
1855-56	7	32	14	58	20	113	19	95	6	22	12	62	4	0	368
1856-57	2	3	11	63	13	101	17	72	12	20	8	36	8	22	317
1857-58	2	3	6	25	1	4	15	37	10	95	15	70	12	45	279
1858-59	4	11	16	72	8	29	9	23	4	15	5	28	13	35	213
1859-60	10	56	14	55	22	106	17	52	21	125	18	45	12	45	484
1860-61	2	5	8	30	18	337	15	167	10	36	11	22	5	6	603
1861-62	4	7	14	55	15	105	12	20	7	32	12	46	7	16	281
1862-63	3	3	22	110	2	2	15	32	11	54	5	25	7	12	238
1863-64	5	10	10	35	14	50	21	394	22	105	23	71	7	12	737
1864-65	8	36	17	62	17	75	22	104	18	93	21	52	2	2	424
1865-66	6	21	13	43	5	10	10	40	18	33	15	65	3	7	231
1866-67	7	20	13	33	9	31	22	210	5	12	20	77	1	2	385
1867-68	5	8	15	40	13	41	17	75	8	10	13	20	3	10	213
1868-69	4	10	13	42	8	22	9	37	4	6	18	57	3	8	182
1869-70	5	12	15	58	19	119	16	76	17	74	5	50	9	19	408
1870-71	2	5	20	53	17	120	28	108	9	10	11	23	9	15	408
1871-72	4	24	13	39	15	59	13	42	4	13	8	23	4	5	205
1872-73	5	12	12	17	10	54	12	63	21	123	12	25	8	8	302
1873-74	9	31	10	35	9	36	9	32	11	69	6	37	6	6	245
1874-75	3	10	10	20	27	277	14	87	21	75	8	45	7	18	532
1875-76	5	13	15	80	12	81	12	103	19	113	21	98	13	69	537
		352		1046		1799		2111		1456		1122		420	

ORCHIDS IN FLOWER AT KEW.

SOME good Orchids are now well represented at Kew. We first observe a fine pan of Cypripedium spectabile, which requires more than a passing notice. There are about sixteen stems, together producing a fine mass of handsome leaves, with which the delicately tinted flowers form a beautiful association. The leaves under glass are of a much fresher green than when grown out-of-doors, and although the flowers are coloured with a lighter shade of pink, they have no less a degree of beauty, while lasting a longer time. Next to this stands a plant of Masdevallia Veitchii, bearing a flower of unusual size. Odontoglossum læve has two spikes that have lasted long in perfection; this, with O. sceptrum, chiefly represent the genus. The massive flowers of Anguloa Clowesii are very conspicuous, and the aromatic perfume is perceptible at some distance. Mesospinidium sanguineum presents a colour extremely rare among Orchids, and familiar perhaps only in the above, M. vulcanicum, Broughtonia sanguinea, and Odontoglossum roseum—all of which are pretty similar. Of Oncidiums the most desirable are O. sarcodes and the brilliantly coloured, diminutive O. longipes, which is considered extremely rare. It grows only about 6 inches high, and produces flowers in abundance. The lip is large and chiefly yellow; near the base, in this instance, it is of a rich brown, as are also the sepals and petals. Sobralia macrantha is represented by a fine form. Calanthe Masuca appears a suitable companion for the indispensable C. veratrifolia. Bletia verecunda is another good terrestrial of the present time. On the shelf devoted to Cypripediums we find the new C. Argus of the Messrs. Veitch, which strikes the attention on account of the numerous dark eye-like spots on the petals (in allusion to which the name was given), rendered more conspicuous by the surrounding paleness.

Of the several others in bloom we need only mention C. Hookeræ, and a plant of C. caudatum, bearing flowers much darker than usual. Dendrobiums are at present not plentiful, although D. Devonianum, with its exquisitely coloured flowers, and this a good variety, ranks as one of the best things in flower. D. Dalhousianum has just finished a fine display, and D. tortile also requires mention. Phalænopsis Luddemanniana has several expanded flowers; and very few Orchids, if any, can surpass it in the delicate blending of tints, with such gem-like transparency. The others of this genus are P. rosea and P. grandiflora. With mention of Aerides Fieldingii and Saccolabium ampullaceum we come to some fine and distinct varieties of Cattleya Mossiæ, which may be considered a fortunate possession. Other Cattleyas are C. Skinneri, represented by a good plant, well flowered; and C. intermedia. Epidendrums, though not as a rule brilliant, seem nevertheless anxious between themselves to make a display at all seasons. Just now there is the orange-coloured E. aurantiacum, the yellow E. Lindeni, the rosy purple E. erectum, and the very peculiar E. Sophronites, with some others, more or less ornamental. The last-mentioned species is remarkably dwarf, and the entire plant inclines to be of a dull red colour, though the leaves on the upper surface are covered with a white meal. The flowers are about an inch in diameter, of a dingy red, and so formed as to have a somewhat monkey-faced appearance. Cœlogyne ochracea is one of the prettiest of a pretty genus, and, while being of extreme rarity, is evidently one of the most useful for affording cut flowers. Though rare in cultivation it is said to be very common in the hilly and mountain regions of North-eastern India. The flowers are true white, with the exception of a yellow blotch on the lip, prettily edged with orange. They are rather more than 1½ inch in diameter, very sweetly scented, and from five to eight are produced on each scape. Utricularia montana is here coming into flower. Re-

* This plant is flowering free in the stove compartments, but not in the open borders.

quiring the same treatment as many Orchids, it appears to have become established in the various collections throughout the country; and possibly there are not a few who are quite unaware of its real relationship.

In the porch of the Orchid-house, in company with Heterotropa asaroides and some other curious plants, it is desirable to notice a specimen of the yellow-flowered Pelargonium oblongatum. From the descriptions already given by the horticultural press, its habit and general appearance must be well-known, but this plant in particular has an unusually stout flower-stem, bearing no less than thirteen distinct umbels, which are likely to open in succession for a considerable time.

Home Correspondence.

Crassula pyramidalis.—I beg to enclose a photograph of an extremely rare plant, I believe almost lost to England, viz., Crassula pyramidalis, which has just flowered with me. I believe it was flowered some years ago by Mr. Justus Corderoy, of Blewberry, near Didcot, but, so far as I can learn, it has never been figured. It has received ordinary greenhouse treatment, been grown in sandy loam and silver sand, and was kept in a house of which the temperature was allowed to be about 40° during the past winter, with an occassional drop to about 34° or thereabouts. Early in the year I found it showing for flower, and it has been about five weeks in the state in which it is photographed. The flowers are white and entirely cover the crown, and as a small succulent "gem" it is most interesting. *N. Burgess, Boundary Road, Walthamstow, May* 8. [The plant was figured in our columns in 1872, p. 289, from a sketch by Mr. Burbidge of a plant at Kew. The photograph now sent is obviously taken from a finer specimen. It is a very interesting plant. EDS.]

Grape Vine Sport.—I have just seen Mr. Marshall's enquiry respecting this (see p. 599), and hasten to reply to it. The bunch in question was produced at the end of the shoot, at least there were no buds or eyes developed beyond it, but there were four apparently perfect buds between the rod and the bunch, and these eyes I inserted as cuttings in the usual manner, about the beginning of February, 1875. They all for a short time showed indications of growing, but, after producing shoots about 2 inches in length, they all died off, without my being able to assign any cause for them doing so. Late in the spring of that year (1875), when the Vines in this house broke, the Trebbiano rod produced a shoot from the same spur which had developed a bunch of the Golden Champion variety the previous season, but this shoot unfortunately produced no bunch; and being very anxious to obtain one or more bunches from it during the next season, I allowed the shoot to grow to a considerable length, and when the Vine was pruned last December this shoot was shortened, so as to leave eight or nine eyes upon it; but only the two eyes at the extreme end of the shoot broke, and, strange to say, neither of them showed a bunch. As soon as I ascertained this to be the case I cut the shoot back to within the eyes of the rod, and both eyes I see have just broken, but they are not yet sufficiently advanced to enable me to ascertain if either of them will be likely to produce fruit; but if they do I will not fail to let Mr. Marshall and your readers generally know the result. When I endeavoured to describe this somewhat unusual circumstance in your columns, and also in the *Journal of Horticulture*, in January, 1875, Mr. William Thomson, of the Tweed Vineyard, Clovenfords, the raiser and introducer of the Golden Champion variety, in a letter to the *Journal of Horticulture*, expressed his disbelief of the circumstance described, and considered that I, as well as others, had been deceived by a short dumpy bunch of Trebbiano with unusually large berries. So I promised to send him a plant from one of the eyes I had inserted if I succeeded in growing them, but being unable, as I have shown, to do this, I nevertheless sent him some eyes from the shoot I cut back in December last, and Mr. Thomson in his letter acknowledging the receipt of the same recapitulates the facts of the case so concisely and clearly that I think there can be no impropriety in quoting from his letter, and I trust that he will excuse me for doing so. He very kindly says, "I shall feel great interest in growing and fruiting one or two of them, and if it should prove that they produce Golden Champion fruit it will be the most startling phenomenon that ever showed itself in vegetable physiology. The facts would be thus: a Golden Champion was grafted on the same stock as the Trebbiano, the former was cut away but the latter had come so much under the influence of the former through the stock that it produced Golden Champion fruit." He further says: "The wood you have sent has not a trace of the appearance of Golden Champion wood, but is exactly like that of Trebbiano." Now, it is quite possible that the rod of the Trebbiano Vine in question as well as plants which may be raised from the eyes sent to Mr. Thomson may never again produce a bunch of Golden Champion fruit; but this circumstance will by no means confute or disprove the fact of its having done so; and the circumstance is after all neither more nor less than a well defined instance of vegetable dimorphism, similar cases having appeared in other families of the vegetable kingdom: so that there does not appear to be any good reason for doubting the fact of its having done so in the case of the Grape Vine, and it would hardly have been consistent with the interest I take in horticulture had I allowed a case which came so directly and clearly under my observation to have remained unrecorded, more particularly as the case is one which does not appear to be of frequent occurrence. But the facts before your readers and the public generally rest as yet simply upon my assertion, and this will, of course, be regarded as just what it may be considered to be worth and no more. So in justice to myself I now beg to respectfully call upon some of the many horticulturists and others who not only saw the bunch in question growing upon the rod along with many other bunches of a totally distinct variety (viz., Trebbiano), but who also minutely examined, handled, and ate of the fruit, and who at the time without any exception pronounced it to be a veritable Golden Champion, to give your readers a statement of the opinion they must have formed of the matter in dispute. *P. Grieve, Culford, Bury St. Edmunds.* [We have to thank Mr. Grieve for this communication, which relates to a point of no little interest. EDS.].

Picea religiosa.—Your correspondent, Mr. Murray, will be glad to learn that there is at least one larger tree of the above beautiful Picea than that from which the cone at p. 561 was taken. Most of the Silver Firs do remarkably well here, and among them is a Picea religiosa 42 feet high, with a spread of branches of 36 feet at the base, and doubtless would now have been much over 50 feet in height had it not lost its leader three or four times. This accounts for the great spread of branches at the base. It has now over 300 cones upon it, and bore a few cones once before. Near the above-mentioned tree there are several Picea cephalonica, one of which coned last year for the first time; also Abies Nordmanniana for the first time. Picea Webbiana and Picea nobilis cone nearly every year, but seldom have fertile seeds. *W. O., Fota, Co. Cork.*

Crocus chrysanthus, var. fusco-lineatus.—I noticed a peculiarity in the flower of Crocus chrysanthus, var. fusco-lineatus, which Mr. Baker has not mentioned in his excellent description. The anthers were conspicuously freckled with black. I observed the same peculiarity, in a slight degree, in a bloom of fusco-tinctus. *H. Harpur-Crewe, Drayton-Beauchamp Rectory, Tring, May* 15.

Holly Leaves.—I have just seen Mr. Wighton's remarks on my notes in *Science Gossip*. It seems strange (after long years) to find one's gossiping remarks quoted. I have not the number of *Science Gossip* alluded to with me, so cannot refer to what I then said, but I am well aware that when the Holly tree becomes old it loses the power of producing spines, and I also feel very certain that it is not needful to look to aged trees with spineless leaves to find them blushing with natural coral, for the most magnificent clusters of scarlet berries I saw this winter were on trees bristling with prickly foliage. My impression certainly, was until I read Mr. Wighton's observations, that all Holly leaves were at first unarmed and often entire, and that as their growth advanced they became spiny; no doubt he is correct, and I should be very glad if he could throw any light on the appearance of black Holly-berries seen on a Holly tree at Liss this winter, which is encircled by Ivy, as I cannot accept the explanation locally given that "the berries were frost-bitten." The tree is now decked with the natural berry of the Ivy. A friend tells me that clipped Holly hedges bear berries if they are shorn in due season before the flowers appear [!]. *Helen E. Watney, Berry Grove, Liss.*

The Almond Tree (p. 634).—I reply to the letter in your last number, signed "F." not because it has any importance except that which it receives from insertion in the *Gardeners' Chronicle*, but simply in order that no one may suppose that by remaining silent I acknowledge myself convicted of "hiding" the truth and "distorting" it. "F.'s" quotations from the "Catholic Bible"—whatever that may be, for I never before heard of it—show, not that a mistake has been made by myself, much less that I have hidden or distorted the truth, but that the "Catholic Bible" has blundered in its translation of the verse in question, and that "F." has been duped. Judging from the sample he has given us, it must be an untrustworthy, not to say deceitful volume indeed. Secondly, as "F." announces himself incapable of understanding my comparison of early-blooming trees, such as the Almond and the Forsythia, the leaves of which do not come till later on, to children, both boys and girls, who astonish and delight us with their sallies of genius long before they develope the ordinarily first phenomena of the mental powers, allow me to recommend him to give a year's study to a subject called Biography, beginning with the girlhood of Lady Mary Wortley Montague, and going on with the boyhoods of great artists and men of science. "F." next enquires if I have read "all the love ditties that ever were written," as I presume to say so positively that Phyllis' letter to Demophoon stands first in point of tenderness. No, I have not read all the love ditties that ever were written; neither have I seen all the different kinds of Lily that are grown in Englih gardens, yet I do not hesitate to assert that the scarlet Martagon is the deepest in colour. "Unsurpassed," when applied either to a poem or to any other great human work, means that the concurrent testimony of competent judges, far and near, allows the thing so styled to be the best example of its class, and that our own personal experience, so far as it goes, approves the verdict. The poem referred to is, after all, no "love ditty" in the legitimate sense of the phrase, as all are aware who know anything about it. Not knowing in his own heart what the "amenities of Nature" consist in, I am sorry to say I cannot help him. Nature has given us different aptitudes; the tickets are not transferable, and it is to be hoped that the ticket bestowed on himself introduces him to rational satisfactions. The "amenities of Nature" have been descanted on by, probably, well, say at a venture, 5000 different authors, ancient and modern put together; they are familiar to all who love flowers and gardens, and are generally regarded as the source of a rather large quantum of human enjoyment. I admit that, by a slip of the pen, I inserted the word "long" where, perhaps, it should not be, and beg to tender my thanks to "F." for pointing out the error. For this shocking piece of work I hope I feel duly penitent. The Dodson-and-Fogg quibble upon my use of the word "have," in reference to things that live for ever—all things having necessarily a beginning—I leave to its amiable and ingenious author; also the sparkling witticism about "bald-pated topers," a class of people to whom my own ticket does not admit—this in order to preserve room to recognise the one redeeming feature of the letter. "F." speaks of my article as "poetic." This is the best credential it can bear, since all commanding intellects, from Lord Bacon down to Coleridge and Mr. Gladstone, have taught us that to view a thing on its poetic side is to see it in its purest and happiest light. What a pity it is that men like my recent assailant "Ebor," in the matter of plant-names, and now "F." in the matter of the Almond, do not do something useful of their own—write an article, for instance, for the *Gardeners' Chronicle*, on some interesting subject that will show them to be *bonâ fide* workers, instead of standing still trying to discover faults and blemishes in other people's work, and in their failures betraying negations that are pretty obvious. The occupation is a very mean one, to say the least of it. "F." need not trouble to write again upon this subject—to pursue some of the topics any further would be altogether out of place in the *Gardeners' Chronicle*, and an unwarrantable intrusion. Moreover, while in no degree "petulant," but quite the reverse, I really have no leisure to deal with cavils, especially acephalous ones. *Leo Grindon, Manchester.*

Syringing Peach Trees in Flower.—As I have suffered slightly from the controversy on the above subject by putting it into practice, I can fully endorse the remarks of your correspondent, "F. McC.," in p. 568, viz., that writers should be more cautious in advising such matters until they have been thoroughly cut and dried by themselves. I tried the syringing system on a young tree of Late Admirable Peach—one of four young trees in an unheated house that were planted out in a fruiting state from pots two years since; and although they have not attained a very large size, they have done well, and would this year have carried a good dish or two of fruit, as they were literally covered with bloom. Not being very sanguine as to the results of the system in my case, I allowed three to set in the ordinary manner, syringing only one; with the result that the unsyringed trees have set every blossom, while the one that was carefully syringed has set only one fruit! The loss in my case is reduced to a minimum, as young trees that are making themselves, as all Peach growers well know, are better without than with fruit; but I fear, had my tree been capable of producing and carrying a heavy crop of fruit, the result would have been precisely the same. My humble opinion on this well-worn subject is that if the trees are in good health, and the border kept copiously supplied with water, sufficient moisture will evaporate for all aërial purposes. My ordinary practice—and one that has never failed to secure me a good set of fruit—is to place a hive of

bees in the house, and let them do the work of impregnating the bloom. Those who will try this next season may depend upon having a good set of fruit without either anxiety or labour. I have this season had trees in bloom since December, and nothing can possibly be more satisfactory than the crops of fruit we have hanging now, the earliest lot being almost ready for table. I may be allowed to mention, as a striking example of my success with the bees, that a Peach-house in the gardens under my charge, situated in a warm corner of the garden, opened its blooms early in February, and during the entire season of flowering the weather was very severe, the thermometer being frequently within a degree of the freezing-point, and snow frequently covering the roof. I placed the bees in as soon as the first blooms opened, and they soon set to work, and I do not think a blossom dropped. The trees were literally a mass of small fruit, and the admiration of all who saw them. They were thinned twice before the stoning process set in, and although a few have dropped in stoning a large proportion remains yet to be removed. *J. W. Silver, The Gardens, Knowle Hall, Warwickshire, May* 1.

Disfigurement of Conservatory Walls.—Will any of your readers kindly inform me what is the cause of a dark, moss-like appearance, resembling lichen, spreading itself over the newly-painted walls inside a large conservatory heated with hot water, the walls rendered in Portland cement being apparently more favourable to its development than those rendered only in hair-mortar and putty? The conservatory, a very large one, has a span-roof of iron and glass, the front fitted with hanging sashes and folding doors in centre, the end and back being of brick, plastered (as I have before described) in some places with cement and others in hair-mortar. The plastering was thoroughly dry before being painted (having been previously coloured)—the first coat mixed with red lead and boiled oil, three last coats in good oil colour, with "Champion's" white lead, finished half-flat French grey. The dark moss-like appearance began to show itself soon after painting was completed, which has not been finished a twelvemonth, and in places the walls appear perfectly black and discoloured. Does any chemical action take place between the white lead and cement, or does it arise from the non-absorbing properties of the painted walls? Whilst the wall was merely coloured there was none of this discoloured moss-like appearance. *J. G.*

Saxifraga peltata.—In No. 122, p. 566, this plant is said to have been introduced by Mr. William Bull. It may be that Mr. Bull had afterwards imported this species, but as Mr. B. Roezl sent a consignment of these plants in the autumn of 1870, the honour of introducing this remarkable species is due to him. We add that our firm purchased the whole stock of Mr. Roezl's Saxifraga peltata, and that we first offered this plant in our Spring Catalogue of New Plants, 1872, in connection with Salvia splendens compacta flore albo, Crossotoma trilobata, Thuja Lobbii gracilis, &c. *Froebel & Co., The Neumunster Nurseries, Zurich.*

THE POULTRY YARD.

Sitting.—In sitting poultry the first point to be considered is that the eggs should be such as will hatch (especially in the case of water-fowl), and for this purpose fresh eggs from known birds should be chosen, and if they can be such as have been laid on the premises or near, it will be all the better, for though it is possible to carry eggs for long distances without injury, it is a great risk, and apt to lead to much disappointment. It is also well (if the sitting birds are not under lock and key, and the eggs are valuable) for the owner to be known to have some private mark on them not easily discernible by other eyes, otherwise a sitting of some pure and well-bred strain may be followed by a hatching of some most objectionable neighbouring sort, and the assistants in the poultry yard will probably be blamed for the mean and dishonest exchange which they may be quite unconscious of.

Eleven or thirteen eggs are usually quite enough for a sitting; if more are given they are likely to be displaced, and either encumber the hen in trying to get them under her, or else to roll out and get broken and (relatively to the size of the sitting bird) a smaller number should be given so that they may all be kept properly and regularly warm. It is also better before trusting choice eggs to any but known steady sitters, to try the birds for a day or two lest it should be a mere passing fancy. Too much care cannot be taken to ensure the cleanliness of the eggs, and, if one should be accidentally broken in the nest all the untidy results should be carefully removed, the sticky eggs washed in lukewarm water, taking care to shake them as little as possible, and the nest remade with clean material.

During quite the few first days of incubation an absence of the sitter of even two or three hours does not signify, though it is better avoided; but afterwards it should not be allowed to exceed twenty minutes, or even be as much as this unless the weather is warm, and the nest sheltered from draughts. The eggs should never be turned, with the object of bringing the germ uppermost, as this matter is provided for by the internal economy, which always sends it to the upper side, and all that is requisite in addition to the natural care of the sitting bird is to insure such cleanliness as will allow the air free passage through the eggshell to the tissue of vessels by which the blood of the embryo chick is aired, forming a kind of temporary membrane lining the shell, and appearing on the third day of incubation (Tegetmeier's *Poultry Book*, p. 27). Daily removal is also necessary for the health of the hen, and if she will not leave the nest of herself she should be carefully lifted off, and carried to some spot where food has been scattered broadcast on the ground, thus insuring a little exercise to the bird in picking it up, and also that it should be in some degree mixed with gravel, or such matters as may aid digestion.

It is a great mistake to supply the hen with indigestible food during incubation, and often a mere excuse for idleness; every care should be taken to preserve her health, and if she has as much of her usual food of grain as she likes to pick up once a day, with as much water as she likes to drink at the same time, she will probably do well, but where practicable it is well to have a pan of water standing which she can go to if she likes, or if this cannot be managed, and the hen is feverish, a saucer of water or a little bread sopped in water and held very gently to her by some one she knows, is often a great relief.

When she is taken off, she should always be carried to some little distance, as the accumulations of digestion—which from the twenty-four hours' confinement are very great—will otherwise cause foul smells and great untidiness in the shed, very likely to be transferred on the bird's feet to the eggs. If the hen can be kept well and comfortably, she will probably sit out her time contentedly, instead of straying away and chilling her eggs, or possibly remaining on them only to eat them. In this case a little meat or fat sometimes works a cure, the animal food taking the place of the worms and scraps that the bird would have found for herself in roaming about, but the trick is sometimes incorrigible, and being catching necessitates the sacrifice of the offender.

Where duck eggs are placed under a hen the sitter should be a known bird whose patience will bear the extra week of work, and the eggs should be occasionally dipped in milk-warm water, especially near hatching time; but in the case of a young hen having been trusted, careful watch should be kept, or it is more than likely she will peck the eggs, or destroy the ducklings as they leave the shells, and a similar misfortune is still more likely to occur where it may have been found necessary to transfer the half-incubated clutch from the original sitter to another hen. It is always desirable to see the hens back to their nests, both on account of their possible undue length of absence chilling the eggs, and also of the fights which are apt to occur for possession of the favourite nests, and which are better anywhere else than exactly in the middle of the eggs.

Turkeys require some slight allowance for their greater delicacy of constitution and greater dulness, which equally necessitate more attention than is needed by the common fowl; and with ducks and geese some attention should be paid (beyond the care necessary to keep the eggs occasionally moistened, either by the feathers of the sitter or artificially) to the quiet treatment of the birds.

If anything has to be re-arranged amongst the geese, it is most desirable as a preliminary to incarcerate the gander, or the noise and confusion are almost unbearable, and apt to lead to rough treatment of the birds, which should never be permitted, and is best guarded against by removing all inciting causes. With the ducks if a nest requires any re-ordering it is best to have the bird held by an assistant, and when all is right she will resume her place, and settle down far more quietly than if she had been struggling and fighting meanwhile.

In the operation of hatching it is best to let Nature take her own course, but if from any cause a chick obviously fit for exclusion cannot manage it of itself the egg-shell may be gently broken away from it, but the young bird should on no account whatever be dug out of the shell with a bit of stick, probably merely to die of the operation. This kind of rough treatment should be classed with whirling a hen round in the air by the legs to cure her of wishing to sit, thrusting a peppercorn down the throat of the newly-hatched chick, and other domestic barbarities needing discouragement, and it cannot be kept too forcibly before the assistants that all rough treatment is not only injurious to the poultry but adds immeasurably to the difficulties of the routine which (when treated with gentleness) they submit to without disturbance. The absorption of the amount of yelk that may be remaining in the egg into the body of the chicken before hatching supplies it with as much food as is requisite for at least four-and-twenty hours after exclusion from the shell, and further details are included in those of more advanced management. *O.*

Notices of Books.

In the last two numbers of the *Annales des Sciences Naturelles* M. Duchartre has published his remarks on the bulbs of certain Lilies, in continuation of those which he made in 1872 on the bulbs of L. Thomsonianum. In the present communication he speaks of the mode of development of the bulbs of Lilium giganteum and L. cordifolium, as well as of the germination of sundry other species, such as L. auratum, callosum, Szovitzianum, tenuifolium, and Thunbergianum. We have no space to do more than give a summary of M. Duchartre's conclusions, which show that there is a great diversity in the first development of the species and the formation of their bulbs, even in the case of very nearly allied species.

1. In some species the germination is rapid, in others slow. The first are usually plants of small dimensions, which flower three or four years after germination, such as L. tenuifolium and L. Thunbergianum; the latter, of slower growth, are plants of larger size, with bigger bulbs, such as L. giganteum, L. cordifolium, L. auratum, &c. In the one case a few weeks are suffieient for the germination of the seed, in the other a year or even two years are required.

2. Lilies which germinate and grow rapidly produce during the first year three or four leaves in addition to the seed leaf or cotyledon; on the contrary, those species which germinate and grow slowly only thrust their seed-leaf above-ground during the first year. The first ordinary leaf only appears in the second year, during which time it remains usually solitary, or, less commonly, the young plant developes two or three leaves in the course of the second year, as in L. auratum. According to M. Max Leichtlin, in L. monadelphum and L. Szovitzianum the seed-leaf or cotyledon is not raised at all from the soil, save as a little scale, and M. Duchartre says that L. speciosum and L. polyphyllum germinate in a similar manner.

3. In all Lilies the radicle in the first stages of germination developes into a well marked pivot (tap-root), but while in most of the species the activity and even the existence of this pivot are limited to the first year, as in L. giganteum, L. auratum, L. Szovitzianum, L. tenuifolium, and L. Thunbergianum, in other species the activity and development of this portion of the seedling are continued during the second year, as in L. cordifolium and L. callosum. This important physiological difference may be manifested in species very nearly related to each other, such as L. giganteum and L. cordifolium.

4. In the great majority of Lilies the "tigellum" does not sensibly develope after germination, but in L. giganteum it forms a hypocotyledonary axis (*i.e.*, a portion of stem below the seed-leaf) of three millimetres in length.

5. L. giganteum is the only species yet observed in which two generations of adventitious roots are produced in succession, the first arising from the base of the tigellum and disappearing with it; the second forming at the base of the little bulb which is formed, and multiplying rapidly as the latter increases in size. In the other species, where the tigellum remains rudimentary, the first of these generations of adventitious roots is, of necessity, wanting.

6. The first appearance of the bulb is always due to the notable growth in thickness of the sheathing portion of the seed-leaf or cotyledon.

7. The sheath of the cotyledon remains throughout the first year, and in the larger species it remains fresh during a longer or shorter period of the second year. During all this time the gradual increase in size of

the young bulb is principally due to the thickening of this sheath.

8. The internal parts of the young bulb only contribute, in the first instance, in a very small degree to the increasing thickness of the bulb; but when the sheath of the seed-leaf is exhausted and withered, then they gradually increase, so as ultimately to constitute the mass of the bulb, and develope, some into leaves, others into nourishing scales, the size increasing till a flower-stem is produced. When the flower-stem so formed is terminal it dies after fructification, and the bulb is then annual or monocarpic. But when the flower-stem originates from a lateral or axillary bud, and it therefore constitutes a branch, several may be produced year after year, and the bulb then becomes perennial or polycarpic.

—— The *Botanical Magazine* for the present month opens with a fine plate (tab. 6228) of a most extraordinary Cape Asclepiad, Hoodia Gordoni, sometimes called Scytanthus Gordoni, and formerly ranked as a Stapelia. It has an erect Cactus-like ribbed stem provided with stout spines and bearing very large, flat, cup-shaped yellow flowers: see *Gardeners' Chronicle*, 1873, p. 567. Odontoglossum prænitens (tab. 6229) was described in our columns, iii., 1875, p. 524. Vitex Lindeni (t. 6230) is a shrub or small tree with 3—5-foliolate leaves and pale violet flowers. It is a native, probably, of New Grenada, but according to the figure is not ol great importance as a decorative plant. Calceolaria tenella (tab. 6231) is a pretty little dwarf-growing species, with small ovate leaves, and yellow flowers streaked with red. It is a native of Chili and Valdivia. Arundo conspicua (tab. 6232) is a very elegant tufted grass of large size, with linear recurved leaves and dense drooping slender panicles. It is a native of New Zealand.

—— In Mr. C. B. Clarke's *Botanical Notes from Darjeeling to Tonglo*, just published in the *Journal of the Linnean Society*, the author describes, on the authority of Dr. King, a new species of Rubus, remarkable for its very large fruits, which are green when ripe, the outer carpels being elongate, lanceolate, herbaceous, and pilose, the inner ones succulent and drupaceous, as usual.

—— Although we are prevented by the exigencies of space and subject from giving any lengthened notice of the following publications—*The Mad Willoughbys*, by Mrs. Lynn Linton; *Country House Essays*, by John Latouche; *False Beasts and True*, by Frances Power Cobbe; *Blossoming of an Aloe*, by Mr. Cashel Hoey—yet we cannot omit to say that Messrs. Ward, Lock & Tyler are doing good service by substituting for the trashy rubbish which forms the staple literature to be seen on railway book-stalls and similar places a much better and more wholesome class of literature. Most of the publications are acknowledged reprints, but they are none the worse for that; while, considering the price, the paper and typography are all that could be desired.

—— The *Revue de l'Horticulture Belge* for May has a coloured plate of Spiræa Thunbergii, a portrait of M. Barillet, and its articles are of the usual useful and agreeable stamp.

—— The May number of the *Floral Magazine* comprises coloured figures of Messrs. Veitch's hybrid Rhododendron Prince Leopold (tab. 209), an orange-flowered variety of great beauty; Hyacinth Sultan (tab. 210), with a dense spike of deep purple single flowers. Amaryllis Thalia (tab. 211) is a gorgeous scarlet flower with a greenish centre, one of the finest Amaryllids yet raised; it is from the establishment of Messrs. Veitch. Dendrobium Wardianum var. Lowii is the thick-stemmed variety which has been seen so frequently this season.

—— In the *Quarterly Journal of the Meteorological Society* Colonel Puckle draws attention to the meteorological phenomena observed in connection with the outbreaks of cholera in Southern India. The observed climatal phenomena are prolonged absence of rain and an abnormal high temperature. To prevent epidemics every effort should be made to secure clean soil, uncontaminated water, and pure air.

—— A triple number of the *Belgique Horticole* for March, April, and May awaits notice. The coloured plates are devoted to representations of Nertera depressa; Calathea tæniosa, a handsome species from the establishment of Jacob-Makoy & Co., with leaves banded with alternate narrow stripes of silvery white and green; Erythronium grandiflorum, var. Murrayi, the plant figured and described by Mr. Andrew Murray in our columns for June 27, 1874, p. 832; Lychnis Viscaria flore-pleno, a very old inhabitant of our gardens; Opuntia Rafinesqui, and Lobelia Erinus flore-pleno. M. De Vos continues his very useful enumeration of the new or interesting plants described in the principal horticultural journals during 1875, an enumeration which we are glad also to have received in a separate form.

—— The numbers of the *Gartenflora* for March and April of the present year contain plates of Potentilla nitida, tab. 858; Sempervivum patens, same plate; Aucuba japonica var. concolor, tab. 859. Outline figures of three Palms occupy plate 860, viz.:—Dictyocaryum Wallisii, Mauritia aculeata, Acanthorhiza Warscewiczii, Dahlia gracilis (tab. 861), an orange-coloured species, with finely divided leaves; Quisqualis sinensis, tab. 862. The report of the Cologne Exhibition of August—September last finds a place five or six months after the exhibition. German readers must be very patient. Some interesting papers on the geographical distribution of cultivated plants are contributed to this journal by Professor Hoffmann, of Giessen, as well as notes of travel by Gustav Wallis.

—— We are glad to see that Mr. Burbidge's handy little volume on *Domestic Floriculture* (Blackwood) has reached a second edition. It is the most useful book of its class that we know.

—— The high opinion we formed as to the merits of Mr. David Thomson's *Handy-Book of the Flower Garden* (Blackwood) is justified by the publication of a third edition "enlarged, and brought down to the present time." It is the standard work on the subject, and should be in every garden library.

Foreign Correspondence.

An Italian Washing Stool.—The *Gardeners' Chronicle*, I know, aims at making public what is beautiful, useful, or curious, hence I make no apology for

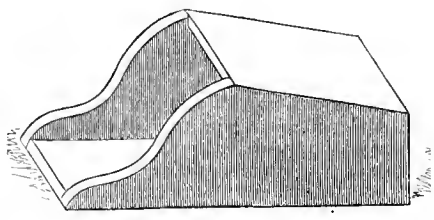

Fig. 121.—Washing stool.

sending you a sketch (fig. 121) of a washing-stool I saw in use on the borders of the Lago Maggiore, and which would, I think, be equally serviceable on the Scottish lakes, the Yorkshire becks, or wherever laundry work has to be done *sub dio*. The stool in question is placed at or just within the water's edge, the *lavandiere* kneels on a cushion, and, stretching the garment that is to be cleansed on the sloping surface of the stool, besmears it with the cleansing soap, and then rinses the same in the water of the lake. There are various patterns in use, but for comfort of the operator and efficiency of purpose that here depicted seemed to me to be the best. *Rambler.*

Horticulture at Mackay, Queensland.—Mr. J. G. Barnes' garden, on the northern side of the Pioneer River, and directly opposite to the town of Mackay, presents one of those striking examples of what may be effected by patient toil, with such a climate and soil as that which Queensland can boast. Mr. Barnes, who is a self-taught horticulturist, has brought under cultivation some 20 acres of land, the soil being a light sandy loam, with a substratum of river sand. With an amount of enterprise, scarcely ever excelled and but rarely equalled, he has successfully acclimatised a large number of fruits, from the greater portion of which he could not hope for any profitable return for several years, this fact being the more remarkable inasmuch as Mr. Barnes was not very abundantly blessed with the world's goods when he commenced his arduous and self-imposed task. Foremost in importance amongst the productions of the garden are the Cocoa-nut groves, formed by upwards of 1200 healthy trees, some of which exceed 20 feet in height, and have an excellent show of fruit. Next comes the plantation of Date Palms, large numbers of which have a splendid crop of fruit, which will ripen shortly after Christmas. Peaches with good fruit-bearing indications, Apple trees perfectly free from aphis, South American red Plums, Chinese Pears which bore a good crop last year, some 500 or 600 Orange trees, principally of the Mandarin variety, which thrives the best; Lemons and Limes, which, to use Mr. Barnes' expressive phraseology, "grow like weeds," Loquats, Bengal Citrons, Cinnamon, Ginger, Tobacco, Cotton, Arrowroot, Rice, Coffee, Indigo, Granadillas, Rosellas, Tamarinds, Guavas, Bread-fruit, Brazilian Cherries, English Potatos, Cabbage, Cauliflower, Celery, and Asparagus, with almost every other fruit and vegetable that can be mentioned, afford abundant evidence of successful acclimatisation. To those who desire to see sericulture rank amongst our native industries, it will be satisfactory to learn that the Mulberry thrives amazingly; whilst the Mango, said to be one of the most delightful and extremely luscious fruits in the world, is now in blossom upon a tree three years old. Mr. Barnes, who has become quite an enthusiast in the matter, has been experimenting for some years with a view to discover what fruits will best thrive, and has amongst other productions a number of plants from the South Sea Islands, respecting the nomenclature of which he is not sufficiently a botanist to express any opinion. It is scarcely necessary to do more than observe that the ever present Bananas and Pine-apples, in their numerous varieties, thrive exceedingly well, or that Water Melons and Papaw Apples are abundant in quantity and excellent in quality. The Grape Vine has not yet had a fair trial, but it is being carefully trellised, and another season will give proof of the profitable or other nature of its cultivation. One remarkable feature in connection with the Cocoa-nut and Date is, that they have already given abundant evidence of frutification, although in Eastern climates a much greater length of time elapses before they become fruitful than in the case we have alluded to. Mr. Barnes' garden, which is a model of order and cleanliness, is surrounded with a very pretty Christ Thorn hedge, and forms a pleasant place of resort for the residents of the town of Mackay. *The Queenslander.*

Philadelphia, U.S.A.—I am happy to be able to inform you of my safe arrival in Philadelphia, after a pleasant voyage across the Atlantic of twelve days' duration, during which period the weather was very changeable, it sometimes being rough and often foggy, but on the whole favourable for a quick passage. Our plants arrived in excellent condition, with a few exceptions. Some of the Crotons dropped their leaves, and two or three bell-glasses were broken, which injured those that were under them. The most delicate plants, such as Adiantum gracillimum, A. farleyense, and other Ferns looked as healthy and fresh as on the day they were packed. The Nepenthes were in splendid condition, and many other rare plants were perfectly vigorous. We have them staged in an excellent situation, and I see no reason for fearing they will suffer at all, as the fine building known as the Horticultural Hall is so arranged as to provide the necessary heat and moisture for the plants. On the whole I think there will be much success. In my next account I will give you further particulars of this grand affair. *H. Williams, of Victoria and Paradise Nurseries, Holloway, N.*

Reports of Societies.

Royal Aquarium, Westminster: *May 16 and 17.*—The managers of this new undertaking are to be congratulated on their success on this occasion. A better show of pot Roses alone we have never seen, and the exhibition altogether was a great improvement upon anything we have had in the metropolis lately, excepting, of course, the glorious show which exhibitors combined to make last year at South Kensington. As on the last occasion, Mr. Wills made the most of the materials at his command, and arranged the exhibition in a very pleasing and satisfactory manner. By gaslight the *coup d'œil* was charming,

and we were much pleased to see a better attendance of visitors than on the last occasion.

By far the most striking feature of the exhibition—and that which created the most interest in the visitors—was a magnificent bank of Roses contributed by Mr. Turner, Slough, and Messrs. Paul & Son, The Old Nurseries, Cheshunt, in competition for the very liberal prizes offered for twelve. The two sets of plants were put up side by side, forming a continuous group three deep, and being very evenly matched it was generally confessed that a finer lot had never been seen, which, on the part of those who saw the plants staged by the same exhibitors last Whitsuntide at Manchester, was saying a great deal. That these were the best plants was claimed by both growers, and that each was in good form there were the plants there to testify, so that it can easily be imagined that the contest for the coveted honours of the championship was a tough one. How happy would either of the exhibitors have been had the other dear charmer been away; but that was not to be—here the plants were, and the judges had to say which was the best. Mr. Turner's plants had symmetry, evenness, freshness, fine blooms and grand foliage to recommend them; Messrs. Paul & Son's specimens had size in their favour, but they were not so symmetrical, and this was a point against them. The individual blooms were remarkably fine, and amongst the sorts staged were splendid examples of Horace Vernet and Marie Baumann, two varieties which require the highest skill to grow to perfection, and which were not to be found in the rival group. This was conceded as another point in favour of the Cheshunt plants, but unfortunately in their front row was a large and remarkably well flowered specimen of the Hybrid Bourbon, Juno, just past its best, which told heavily against the group, and the 1st prize went to Mr. Turner. In a close competition like this it would be easy for the judges to please all round by giving equal 1st prizes, as they might well have done on this occasion; but we hold that to do so is to confess the weakness of their judgment, and we are pleased that the question as to which was the best was decisively settled, though we are bound to express our sympathy for the losers. The masterpiece in Mr. Turner's group was a magnificently clothed specimen of Paul Perras, 8 feet high and 7 feet through, with over 200 blooms, the like of which has never been seen, and it may be some time before we see its equal again. The other varieties staged in this group were Madame Thérèse Levet, Duke of Edinburgh, Juno, Madame de St. Joseph, Edward Morren, Victor Verdier, Madame Victor Verdier, Beauty of Waltham, Celine Forestier, Maréchal Vaillant, and Anna Alexieff. Messrs. Paul & Son had Princess Mary of Cambridge, Madame Thérèse Levet, Madame Victor Verdier, Charles Lawson, Victor Verdier, Juno, Celine Forestier, Souvenir d'un Ami, Marie Baumann, Anna Alexieff, and Horace Vernet.

These fine Roses occupied a position opposite to the orchestra, while in front of the latter was a nice display of Orchids and cut Roses. The Orchids were placed in a single line at the back, and included a specimen of Vanda suavis, with six spikes, and good examples of Oncidium sphacelatum, Odontoglossum Pescatorei, Cypripedium barbatum superbum, Anguloa Clowesii, and Saccolabium ampullaceum. These came from Mr. B. S. Williams, and took the 1st prize in their class. The next prize lot came from Messrs. Rollisson & Son, Tooting. In the corresponding class for amateurs the 1st award went to F. G. Wilkins, Esq, Leyton (Mr. J. Ward, gr.), whose finest specimens were of Odontoglossum Phalænopsis and O. Pescatorei; and the next best were contributed by F. W. Watson, Esq. (Mr. James, gr.), The Redlees, Isleworth, including a piece of Cattleya Mossiæ, nearly 3 feet over, and beautifully flowered. In front of the Orchids was a line of circular baskets of cut Roses, set 3 feet apart in a groundwork of Isolepis gracilis, a few small plants of Anthurium Scherzerianum being placed between the rows, in which position their scarlet spathes had a very good effect. The Roses for the most part came from Messrs. William Paul & Son, Waltham Cross, but a fine stand of twenty-four from Messrs. Paul & Son, Cheshunt, which took a 1st prize, and some excellent blooms from the Misses Christy (Mr. Moorman, gr.), also found a location in the same design.

Down the centre of the nave were two large and two small groups of plants, the larger ones being composed of flowering and fine-foliaged plants, and the smaller of Dracænas only. The centre of the first of these groups was filled with medium-sized Palms, and around them were a collection of twenty admirably flowered Roses in pots, from Messrs. Paul & Son, Cheshunt, which took the 1st prize in their class, and these were followed by half-a-dozen Dracænas, well-grown specimens, from S. Ralli, Esq, Thornton Road, Clapham Park (Mr. Legg, gr.); and another set of the same number from P. Crowley, Esq, Waddon House, Croydon (Mr. Strahan, gr.), which took respectively 1st and 2d prizes. Then came another group of twenty good Roses in pots, which gained a 3d prize for Messrs. H. Lane & Son, Berkhampstead; and half-a-dozen specimens of a similar size from F. W. Watson, Esq., Isleworth, (Mr. James, gr.), which also gained the 3d prize in a competition amongst amateurs; and the group was completed with a collection of twenty-five nicely grown half specimen stove and greenhouse plants, contributed by H. H. Wetenhall, Esq., The Poplars, Seven Sisters Road (Mr. G. Toms, gr.).

In the opposite group, which was equally effective as the former, the centre and a portion of one side was filled with handsome young Palms and other fine-foliaged plants from the nurseries of Messrs. Osborn & Sons, Fulham. Next came twenty Roses in pots from Slough, with which Mr. Turner took the 2d prize to Messrs. Paul & Son's 1st. In close proximity to these stood half a dozen more Roses, shown by the Rev. A. H. Bridges, Beddington House, Croydon (Mr. T. W. Penfold). Then followed a dozen small but very choice stove and greenhouse Ferns from Mr. B. S. Williams, which were the best in their class; and a similar group from A. Cooper, Esq., Park Road, Twickenham (Mr. Smith, gr.), which were 2d; these being succeeded by another batch of twenty Roses in pots from the Misses Christy, Coombe Bank, Kingston (Mr. Moorman, gr.), which gained an extra prize.

One of the groups of Dracænas was composed solely of two dozen fine plants, contributed in equal proportions by Mr. B. S. Williams and Messrs. Rollisson & Sons, which gained respectively 2d and 3d prizes in the order named. The 1st prize group of twelve in this class came from Mr. William Bull, and these were the main attraction in the corresponding groups at the opposite end, which included also a capital lot of plants from Messrs. H. & G. Wright, nurserymen, Lee, Kent, which were also awarded an extra prize. Mr. Bull's plants were admirably grown and well coloured, the finest being of D. Goldieana, D. Baptistii, D. Rex, D. elegantissima, D. amabilis, D. magnifica, and D. Shepherdii. At the end of the nave nearest the theatre were two semicircular stages filled with small Azaleas and Roses, with hardy herbaceous plants in front. The Azaleas were contributed by R. Thornton, Esq., The Hoo, Sydenham (Mr. Ratty, gr.), A. Cooper, Esq. (Mr. Smith, gr.), and Sir Francis Goldsmid, Bart. (Mr. G. Wheeler, gr.); and the Roses by the Misses Christy (Mr. Moorman, gr.). Of hardy herbaceous plants there was a finer display than usual, four collections of eighteen coming into competition. The 1st prize went to Mr. R. Parker, Tooting, who, as usual, had a very interesting assortment; the 2d to W. Terry, Esq., Peterborough House, Fulham (Mr. W. P. Roberts, gr.), also an excellent collection; and 3d to L. Clark, Esq., Hitherwood, Sydenham Hill (Mr. Elliott, gr.), Mr. R. Dean, Ealing, receiving an extra prize.

On the side of the nave, and near to the last-mentioned groups, was a similar one filled with a dozen very good Roses in pots from J. Galsworthy, Esq., Coombe Bank, Kingston; and a dozen of the best herbaceous Calceolarias Mr. J. James has ever shown, good, indeed, as have been the plants he has staged on previous occasions; while the chief feature of the corresponding group opposite was a very bright and attractive collection of twelve Clematises shown in Messrs. George Jackman & Sons' best style. At the opposite end of the nave Messrs. W. Paul & Son, Waltham Cross, had a large group of Roses in pots; and by its side was another one of Azaleas, large plants, shown by R. Thornton, Esq. (Mr. Ratty, gr.), and small standards well flowered by Messrs. Cutbush & Son, Highgate. In single rows at the sides were the Gold and Silver Tricolor Pelargoniums shown in class 12, of which there was a good display. The 1st prize was won easily by Mr. Coppin, The Nursery, Shirley, Croydon, who had a remarkably well grown lot of plants from 2 to 3 feet across, but the colours, as was to be expected, were not particularly bright. The 2d prize went to Mr. W. Meadmore, Nurseryman, Romford, and the 3d to Mr. E. Pestridge, nurseryman, Brentford. Mr. Burley, Brentwood, was Commended.

In the lobby at the eastern end were staged the new plants and several fine miscellaneous groups. Mr. Bull was the winner of two 1st prizes for new plants with very choice specimens, and Mr. B. S. Williams was 2d, and Messrs. Rollisson & Son 3d in the class for twelve. For twelve dinner-table plants in 6-inch pots there was a very interesting competition, and Mr. Bull was again to the front in the prize list, being followed by Messrs. Rollisson & Son, Messrs. H. & G. Wright, and H. W. Segelcke, Esq., Herne Hill (Mr. T. Lambert, gr.). Large and very effective groups of new plants, and of better known fine-foliaged and flowering plants, were staged by Messrs. Rollisson & Son, Mr. B. S. Williams, Mr. Bull, and Messrs. Cutbush & Son. Amongst miscellaneous productions may be mentioned a fine collection of eighteen dishes of Apples from Dr. C. M. Ingleby, Valentines, Ilford (Mr. Earley, gr.); and a large group of Roses in pots from Messrs. H. Lane & Son. Auriculas were shown by Mr. Turner, the Rev. H. H. Dombrain, and Mr. James; and several novelties received First-class Certificates of Merit.

Royal Horticultural: *May* 17.—Lord Alfred Churchill in the chair. The Rev. M. J. Berkeley announced the awards made by the committees, which were rather more numerous than on the last occasion, and commented upon several subjects brought before the meeting, including a small cluster of flowers of the showy Embothrium coccineum, which was as hardy as Berberis Darwinii, and should be much more grown for its beautiful scarlet flowers. The specimen shown came from Mrs. Lloyd Wynne's garden in Denbighshire, where it was perfectly hardy. Mr. Berkeley also alluded to some Cucumber plants badly attacked with the Cucumber murrain, which was still as great a mystery as ever. The only remedy that he knew for it was to remove the whole of the soil and bring in maiden loam from a new district. An old gardener whom he knew some years ago used to grow his Cucumbers and Melons very successfully in the soil found in chalk gullies, and it might be tried now where the disease made its unwelcome appearance.

Scientific Committee.—A. Murray, Esq., F.L.S., in the chair.

Potato Disease.—The Rev. M. J. Berkeley stated that, having examined Mr. Smith's preparations, he had not the slightest doubt that the resting-spore discovered by him is that of the Potato fungus—Peronospora infestans.

Abnormally Placed Buds.—The Rev. M. J. Berkeley, alluding to some buds of the common Maple shown by Dr. Masters at a former meeting, stated that he had found similar productions frequently beneath the midsummer shoots.

Gall on Calythrix.—Dr. Masters showed specimens of a peculiarly thickened condition in the flower-tube of a species of Calythrix forwarded by Baron Von Müller from Melbourne. It was referred to Messrs. Murray and McLachlan to report on.

Blights.—Mr. McLachlan combated the prevalent notion of any direct connection between the occurrence of easterly winds and the prevalence of aphides, and stated that this season aphides were singularly infrequent. He ventured to predict that if a few days of genial weather supervened the aphides would be found in abundance. The same gentleman also questioned the accuracy of those observations according to which lady-birds and other insects which are occasionally met with in prodigious quantities on the sea coast, are supposed to have immigrated from across the Channel. Mr. McLachlan considered it more probable that the insects in question, having exhausted their resources inland, have travelled to the coast and there been stopped by the sea.

New Species of Coffee.—Mr. Hiern showed plates of some of the new species of Coffee, including C. liberica, shown by him before the Linnean Society on a recent occasion.

Narcissus Fly, &c.—Mr. Murray showed the perfect insect, Merodon clavipes, which he had reared from a larva found in a Narcissus bulb. The same

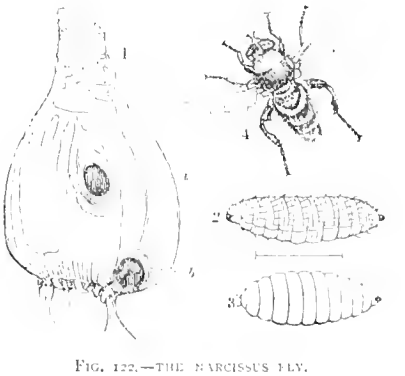

Fig. 122.—The Narcissus Fly.

gentleman also showed specimens of a Coccus infesting the shoots of Cupressus Lawsoniana.

Floral Committee.—W. B. Kellock, Esq., in the chair. Messrs. James Veitch & Sons made a very attractive and interesting display of Orchids and other plants, to which the Council awarded a Davis Medal. The following First-class Certificates were awarded to plants included in the group:—To Aralia Veitchii gracillima, a very narrow-leaved form of the elegant A. Veitchii; and to Boronia elatior, a very free flowering form with dark rosy purple sweet-scented flowers—an acquisition to growers for exhibition. The above awards received the unanimous assent of the committee. To Azalea indica Jean Vervæne, an attractive variegated flower, pale rose, with dark rosy stripes and an irregular margin of white; and to × Cypripedium selligerum, a hybrid between C. barbatum and C. lævigatum. Also in-

cluded in this group were the pretty Epidendrum prismatocarpum, with two nice spikes; Dendrobium thyrsiflorum, Aerides Fieldingii, with five fine spikes; Cypripedium niveum, a large mass; Cattleya Mendelii, a remarkably richly coloured variety; Lælia Wolstenholmiæ, a striking Orchid with two strong spikes; Dendrobium Bensonæ, with two large growths well flowered; Oncidium concolor and O. Marshallianum, both fine yellows; Anguloa Ruckerii, a very distinct form with a very peculiar odour; Vanda Parishii, particularly sweet-scented; Odontoglossum vexillarium, one plant with six spikes, five flowers being on some of the spikes, and twenty-seven flowers on the plant. The flowers were beautifully coloured, and the whole plant a grand object. Another specimen of the same species had eight very fine flowers; and yet another had flowers almost pure white—a chaste and fine variety. We have left for the last the finest plant in the whole group—a grand specimen of Odontoglossum nævium, with about two dozen spikes, and to which the Council awarded a gold medal. Sir Trevor Lawrence, Bart., showed a small group of Orchids, which included a large specimen of Masdevallia Harryana var. violacea, with fourteen fine flowers of a distinct bluish-violet colour; the interesting Dendrobium cariniferum, the small citron-yellow flowered Promenæa citrina, and a fine specimen of Aerides Mendelii [?], a form of the old A. Larpentæ, with buff sepals and petals, to which a First-class Certificate was awarded. Similar awards were also made to Mr. Charles Noble, Bagshot, for Clematis lanuginosa violacea, with a flower composed of six sepals, and from 6 to 7 inches across, of a rich violet-purple colour; and to Messrs. E. G. Henderson & Son for Cineraria King Alphonso, a double variety, with fine, very bright rose-coloured flowers. The Messrs. Henderson also showed another double variety named Prince Imperial, of a rich purple shade; and a fine batch of seedling plants of their strain of Mimuluses, which were remarkable for the size and richness of the colours of the flowers. The strain was Highly Commended. Mr. Green, the Botanical Nursery, Reigate, showed Iris pumila lutescens elegans, a dwarf, creamy, yellow-flowered form, admirably adapted for the rockery. A vote of thanks was passed to Sir G. Macleay, Pendell Court, Bletchingly, for two fronds of Neottopteris australasica, sent to show its native growth, and which measured 5 feet 6 inches in length, and 7 inches in width.

FRUIT COMMITTEE.—H. Webb, Esq., in the chair. Sir Henry Peek, Bart., Wimbledon House (Mr. Ollerhead, gr.), showed a very fine bunch of Bananas, Musa Cavendishii, which weighed 97 lb., and would have been heavier had it been allowed to ripen a little more. This is, we believe, the heaviest bunch that has been shown since 1843, when Mr. Scott, of Leigh Park, exhibited one weighing 120 lb. in the Horticultural Society's rooms in Regent Street. A Cultural Commendation was voted to the grower. Mr. W. Horley, Toddington, Beds, showed specimens of a striking white variegated Broccoli, which was considered of some value as a decorative plant, and received a First-class Certificate. Mrs. Willis Fleming, Chilworth Manor, Romsey (Mr. Batters, gr.), sent admirable samples of Walnut-leaved Kidney Potatos, Early Longpod Broad Beans, Maclean's Little Gem Peas, and Moore's Vegetable Cream Marrows, which had been grown in pots on shelves in cool houses. The samples left nothing to be desired as regards quality, and well merited the Cultural Commendation awarded.

Glasgow and West of Scotland Horticultural: *May* 10.—The first *débût* of this Society since it left the dingy precincts of the city for the crystal conservatory situate in the Botanic Garden, has proved a complete success both financially and otherwise. A better, if, indeed, an equally good summer show, has never been held in Glasgow, and a more beautiful place for an exhibition of the kind is not to be found, the greatest defect being the want of a screen to shelter the more sensitive plants from the strong sun that beat upon the glass roof throughout the day, and the effects of which on the Tree Ferns and tender foliaged plants soon became perceptible. The ventilation of the building is also far from perfect, and it is to be hoped the new proprietors of this miniature "Crystal Palace" will see their way to remedy it, so as not to discourage exhibitors of such rare and valuable plants. In the competitive department the chief objects of interest were the collections entered to stand their chance for a cup, value thirty guineas, presented by Mr. A. B. Stewart, of Rawcliffe Lodge, for a collection of plants arranged for effect to fill an oval space 28 feet long by 20 feet at its greatest width. For this prize three competitors came forward—Messrs. J. and R. Thynne, Mr. Peter Mackenzie, and Mr. James Findlay. In giving their decision, the judges had no easy task before them, but their fiat, when it eventually went forth in favour of Messrs. J. and R. Thynne, was obviously a just one. The collection, taken as a whole, was one of the most complete examples of horticultural skill and enterprise ever seen in these parts. The centre was occupied with a magnificent specimen of Cyathea Burkei, said to be the original plant of the species imported; a pair of Hyophorbe Verschaffeltii, each about 12 feet high; and numerous other Palms, both rare and well-grown; together with Silver Tree Ferns, Dicksonias, &c., these being followed by a rich variety of Cycads, including Encephalartos, Macrozamia, &c.; beautiful Crotons, represented by the best of the new and old kinds; also Dracænas, and scores of miscellaneous choice plants, including a pair of the finest specimen plants of Dasylirion longifolium glaucum in cultivation; intermixed with these were Azaleas, Heaths, Cyclamens, &c., in bloom. The Cyclamens in this collection were both numerous and well-grown, each plant being a sight of itself, and the varieties excellent. The Azaleas were not so large or well-flowered as those in the 3d prize lot, but still very fine; Heaths small but in excellent variety for the season. The collection was well staged by Mr. Heale, the manager of the Great Western Nurseries, and this was a strong point in its favour. Mr. Peter Mackenzie was placed 2d, with a collection of plants which for variety, rarity, and good culture took even connoisseurs by surprise, but in point of tasteful arrangement was a little behind the other. A noble Isle of Bourbon Palm occupied the centre, and was surrounded with the usual Tree Ferns, Palms, Cycads, variegated Acers, Dracænas, a remarkably fine pair of Yucca filamentosa variegata, together with an excellent assortment of other foliaged plants, Ferns, &c. The flowering plants in this group were very varied, Amaryllis being well represented, also Orchids, Roses, and stove and greenhouse plants, amongst the latter a remarkably well-flowered specimen of Erica ventricosa coccinea minor, Genetyllis tulipifera, well done, and a host of others too numerous to name here.

For richness of colour the 3d prize lot, tabled by Mr. James Findlay, was the most commendable of the three, but want of variety placed him at a disadvantage. Much and deservedly admired, however, were the Azaleas here shown—magnificent plants, well flowered, and consisting of varieties generally acknowledged to be amongst the very best. Other flowering plants in this collection were also very fine, the appearance of the whole being, as already indicated, more than justification of Mr. Findlay's effort to compete with the more successful nurserymen, and an encouragement to renew the attempt on the first opportunity.

In juxtaposition to these collections, and occupying nearly as much space, was a collection (not for competition) from the rich stores of Mr. Thomas Coats, of Paisley, and were I not already encroaching on your valuable space I could tell a long story of the size and value of some of the specimens in this collection, which contained the finest Orchids by far in the show—Vanda tricolor, insignis, and Vanda suavis Veitchii have seldom been seen better even at the London shows.

Of the other classes it may be said generally that considering the somewhat late season there were none but were up to the usual average of merit, while many went far beyond this. Orchids were a small but good show, the 1st prize being taken by Mr. George Davidson, Dunlop House; and the 2d by Mr. A. B. Stewart. Azaleas were, as a rule, remarkably well flowered, Mr. Stewart's prize-taking lot was said to be the finest ever staged in Glasgow—Mr. J. B. Mirrlees being 1st for the smaller collection, with well bloomed plants. The class for six stove and greenhouse plants brought out some excellent specimens, Mr. Stewart being 1st with a grand Rhododendron Gibsoni, Eriostemon neriifolius, Erica affinis, Azalea Duchesse de Nassau, 6 feet by 4—other plants being equally large and well bloomed. Mr. J. C. Wakefield, of Eastwood Park, came 2d, with equally large and well grown plants, but his Erica Cavendishiana and Erica coccinea minor were scarcely up to the day as regards bloom, it being early in the season for Heaths in this locality. His Flamingo plant was very fine, and deservedly admired. Mr. Edward Boyle, Burn Park, Uddingston, took the lead in the Heath classes. Auriculas were a new feature on the tables, and, alike from their novelty and beauty, were much admired. For these Messrs. Robertson & Galloway took the lead, as also in the class for Primulas and Polyanthuses, Rhododendrons in pots, and cut Roses. The prize for pot Roses went to Mr. James Bryson, Park End Nursery, Helensburgh. Other leading nurserymen of this city contributed largely to the general effect of the show, Messrs. Smith & Simons, and Messrs. Austin & McAslan, each contributing large collections not for competition. The beautiful Bertolonia Van Houttei in Messrs. Smith & Simons' collection was greatly admired, and so were many other rare little gems in this collection. Messrs. Austin & McAslan's collection was rich in bybrid Rhododendrons. Mr. Neil Wilson, of Rothsay, exhibited a fine collection of cut blooms of Maréchal Niel Roses, and attracted special attention, from the fact that they had attained the proportions of small Cabbages, and were yet well up in colour.

The Filmy Ferns exhibited by Mr. A. B. Stewart were a marked feature of the show: the Hymenophyllum demissum, with fronds 2 feet long; H. caudiculatum, a grand mass on a terra-cotta stem; H. crispum splendidum, 18 inches across; Trichomanes venosum, a fine piece; T. auriculatum, on a terra-cotta stem, unquestionably the finest piece in Britain; and several other choice kinds were associated with many other beautiful, rare, or curious plants, such as the lace-plant, from Madagascar, well grown and much admired; Cocos nucifera, with the shell of the fruit from which the plant has sprung still remaining attached to it, and some of the newest high-coloured Dracænas, &c. The general prize-list is published in the Glasgow daily papers of Thursday, May 11. *Robert Bullen.*

The Villa Garden.

HEAVY SOILS.—The spring has proved a very trying one to Villa gardeners whose gardens rest on a subsoil of clay. It was so wet during the winter that when it was dug it came to the surface in large stone-like lumps, thoroughly saturated with wet that baked as hard as bricks as they became dry. Through the agency of sun or wind many suburban gardens resting on the gravel are yet in this state, and that in consequence of the good soil having been sold by that enterprising individual, the speculative builder, who replaced it with any rubbish he could lay his hands on. Many have only recently been able to dig their gardens, so retentive of moisture and tenacious has the soil proved. The harsh bitter east winds that have prevailed for nearly a fortnight past have served to make matters worse, and a mild genial rain would now descend as a precious blessing of almost untold value. All the beating about of the baked pieces with the fork or rake is of but little service—rain is the only efficacious disintegrating force, and it must be patiently waited for.

We have succeeded in making the surface soil of some heavy ground much more workable by sifting over it in dry weather the finest portions from the ash and refuse heaps, and then, when rain falls, beating the moistened lumps to pieces with the back of a rake, and gently forking it over and beating it as fine as possible. This has been necessary in the case of early Potatos, in order that some fine soil might be drawn up over the growing tops, to keep them from the frost, which in some localities has already worked harm.

HOEING.—In the case of established crops a good surface hoeing between them is to be commended, loosening the soil to a depth of 2 or 3 inches if possible, growing crops never suffering so much in ground the surface of which is kept broken up with the hoe in times of drought as they do when the ground is left to cake and become hard and firm on the surface, and especially does this hold good in the case of sloping borders. Now Villa gardeners are very fond of having a south border sloping somewhat to the front on which to grow a few winter Lettuce, early Radishes, Potatos, Carrots, &c. If this is left to become hard and baked on the surface, when rain comes, especially if the fall be brisk, there is danger of losing any beneficial influence that may accrue to it, by running off the surface before it can penetrate to the ground. If, as far as possible, the soil be kept loose and open among the growing crops, when rain comes it will descend to the roots and all its advantages will be secured. The use of the hoe on the surface, wherever it can be employed without doing injury to the crops, will keep the ground from cracking in times of prolonged drought, and during such a time the crops on ground the surface of which is frequently stirred will not suffer nearly so much as those growing in the hard, unstirred soil.

THINNING GROWING CROPS.—This necessary duty applies to subjects the seed of which is small, and however carefully and thinly they may be sown, will be certain to require thinning out. We may mention Carrots, Onions, Parsnips, Turnips, Lettuce, and Beetroot as vegetables growing in most gardens, and particularly requiring this attention. All these require space for the individual plants to develope themselves, and the necessary process of thinning should be carried out as soon as the plants are large enough to handle. If the weather be dry wait till rain comes, or the leaves will part from the roots close

to the ground. When the soil is moistened with rain the plants requiring removal come out easily.

It would be difficult to set forth the exact space required by a plant to mature itself, and the only rule to follow is—the requirements of the plant. But this implies a knowledge of vegetables and their nature and habit of growth, and this knowledge is not always the heritage of elementary gardeners. Carrots, Parsnips, and Beetroot should be thinned out to 4 or 5 inches apart at least; Onions may be left a little closer but yet widened out to quite 6 inches apart if some large bulbs for the exhibition table are wanted.

Hardening-off Bedding Plants.—As many persons contrive to keep a few of these through the winter, and as the time for bedding-out is drawing near, the plants that have been kept in a greenhouse need to be got into the open air so as to become inured to the colder atmosphere; they can be stood in any sheltered spot and a mat or any such covering be thrown over them at night when frost threatens. If a piece of board 8 inches or so in depth be put up as a kind of an outline of a rough frame round the plants, it will serve to keep them from falling about. All that is wanted is a few stakes 18 inches in length, and two of them should be driven into the ground on either side of the board. The next consideration is how to put a covering over without doing harm to the plants? A few narrow strips can be put across from board to board, either across or from back to front, and on these the mats or coverings can be laid. If the tops of the plants reach above the boards some simple contrivance must be employed to raise the covering tent-fashion above them, and the best means of doing this will readily suggest themselves. The plants must not be suffered to become dry at the roots when housed in this way.

Law Notes.

Railway Liability.—*Worthington v. Great Northern Railway Company.*—This was an action recently brought in the Bloomsbury County Court, in which the plaintiff, described as an importer of fruit, carrying on business in Water Street, Liverpool, sued the defendants to recover the sum of £22 16*s.* 5*d.* for compensation under the following circumstances. Mr. Yelverton appeared as counsel for the plaintiff, and Mr. Harmsworth, barrister, for the defendants.

From Mr. Yelverton's opening, it transpired that his client had consigned to him several cases of Oranges from Miquel in the Azores, which Oranges were known in the English markets as St. Michael's, and that he, in accordance with instructions received, forwarded them to Mr. Alfred Bundy, of Kentish Town, a salesman, but that when the Oranges reached their destination in London many of the boxes were broken, and the contents of the remainder were in such a deteriorated condition that they were returned upon the company's hands; and as the plaintiff had in vain applied for redress the present action was brought.

The plaintiff's manager being called, proved the delivery of the boxes to the company's recognised agent in Liverpool for transmission to London, and that the agent signed for them. In cross-examination witness said he thought that there were 260 boxes, but he did not examine their contents, but they had been in Liverpool a week before they were consigned to London.

Mr. Alfred Bundy, being called, said that the goods reached him in so bad a state that he would not receive them, and telegraphed to the plaintiff to that effect.

The plaintiff stated that when he received the telegram from the last witness he wrote to the company ordering them to sell the goods and remit the balance; and that the sum now claimed was the difference between the original cost, together with the expenses he had been put to and the sum realised by the company's sale.

The plaintiff in cross-examination admitted that the goods might from any injury have deteriorated in twenty-four hours.

This being the plaintiff's case, Mr. Harmsworth, on the part of the defendants, urged that there was no proof on the part of the plaintiff that the Oranges were in a sound condition either when they reached or left Liverpool, and called Mr. Vaughan, the company's recognised agent at Liverpool, who said he dispatched the boxes by an ordinary goods train to London. He did not examine any of them, and could not say whether they were in a damaged condition or not. Mr. Harmsworth then urged that the right of property had passed from the plaintiff to the consignee, who was the proper party to sue.

The learned Judge over-ruled this objection, but considered that, as there was no evidence to show that the Oranges were in a sound state when they arrived in Liverpool, and that they might have been damaged, bruised or deteriorated when there, he should decide in favour of the defendents, who, on the application of Mr. Harmsworth, were granted costs.

A Disputed Gardener's Claim: Walker *v.* Sherrin.—This was an action brought in the Bloomsbury County Court, before Mr. Judge Russell, in which the plantiff, a gardener carrying on business in Kentish Town, sued the defendant, the Principal of St. John's College, Leighton Crescent, Camden Town, to recover the sum of £4 4*s.* for work and labour done on account stated. Mr. Charles Williams, solicitor, appeared for the defendant.

From the plaintiff's statement it appeared that he was engaged by the defendant to keep his garden in repair for £8 per annum, of which £4 remained due, which, with 4*s.* for some turf ordered by the defendant's wife, constituted the sum claimed in the present action.

Mr. Charles Williams urged that the defendant had paid £2 into Court, and that the turf charged for had never been delivered, and that having paid £2 into Court he denied further liability.

The plaintiff, being recalled, said he attempted to cut the turf from a field, but was stopped and threatened to be locked up for doing so, but had supplied turf which was refused by the defendant. In cross-examination by Mr. Williams, the plaintiff admitted by his receipts having been paid up to November last, which only left the sum paid into Court due, and that as to the claim for turf, it was not to be supposed that a man in his client's position would authorise the plaintiff to cut turf from another man's property without permission to do so, and that having paid £2 into Court he denied further liability.

His Honour took this view of the case, and ruled in favour of the defendant, with costs.

The Weather.

State of the Weather at Blackheath, London, for the Week ending Wednesday, May 17, 1876.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
May	In.	In.	°	°	°	°	°	°			In.
11	29.94	+0.20	62.9	39.0	23.9	49.6	— 1.6	37.6	62	E.; E.N.E.	0.00
12	30.00	+0.26	56.8	37.7	19.1	45.0	— 6.1	38.5	78	N.E.; E.N.E.	0.00
13	30.05	+0.31	57.1	35.2	21.9	44.3	— 6.8	35.0	69	N.E.	0.00
14	29.92	+0.16	55.9	37.0	18.9	45.7	— 5.6	37.7	74	NNW	0.00
15	29.91	+0.17	60.9	41.9	19.0	48.7	— 3.2	42.5	80	N.E.; E.; E.S.E.	0.00
16	29.98	+0.24	63.2	39.3	23.9	49.0	— 3.3	42.8	79	E.; E.N.E.	0.00
17	29.93	+0.26	59.9	39.1	20.8	48.7	— 4.1	39.5	74	N.E.; E.	0.00
Mean	29.97	+0.23	59.5	38.4	21.1	47.3	— 4.4	39.0	73	N.E.	sum 0.00

May 11.—Fine and bright, partially cloudy. Strong breeze.
— 12.—Dull and cloudy till 11.30 A.M.; fine and cloudy after. Cold. Raw wind.
— 13.—Fine, but dull and cloudy at times. Cold.
— 14.—A dull day, though fine at times. Few drops of rain fell occasionally. Cold.
— 15.—Dull, cloudy, till noon; fine after. Cold wind.
— 16.—A fine day, partially cloudy and windy.
— 17.—A fine day, cloudy, and cold. Strong wind.

—— During the week ending Saturday, May 13, in the vicinity of the metropolis the reading of the barometer at the level of the sea increased from 30.22 inches at the beginning of the week to 30.42 inches by the morning of the 8th, decreased to 30.11 inches by the afternoon of the 11th, increased to 30.25 inches by the morning of the 13th, and was 30.24 inches at the end of the week. The mean reading for the week at sea level was 30.26 inches, being 0.08 inch above that of the preceding week, and 0.33 inch above the average.

The highest temperatures of the air observed by day ranged from 63° on the 11th to 56¾° on the 12th; the mean for the week was 58½°. The lowest temperatures of the air observed by night varied between 35½° on the 13th, and 39° both on the 9th and 11th; the mean weekly value was 37¼°. The mean daily range of temperature for the week was 20¾, the greatest range in the day being 24° on the 11th, and the least 18½° on the 9th and 12th.

The mean daily temperatures of the air for the week were:—7th, 47.2; 8th, 46°.9; 9th, 46°.6; 10th, 46°.6; 11th, 49°.6; 12th, 45°, and 13th, 44°.3; and the departures, all in defect of their respective averages, were:—4°.5, 4°.7, 4°.9, 4°.7, 1°.6, 6°.1, and 6°.8. The mean temperature of the air for the week was 66°.6, being 4°.8 below the average of observations extending over sixty years.

The highest readings of a thermometer with blackened bulb in vacuo placed in sun's rays, were 118¾° on the 9th and 119½° on the 12th; the mean value for the week was 114°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 30° on the 11th and 29¾° on the 13th the mean for the several low readings was 33°.

The direction of the wind was N.E., and its strength brisk. The weather during the week was fine, cold, and dry. No rain fell.

In England the highest temperatures of the air observed by day were 68° both at Nottingham and Leeds; at Hull 54° was the highest temperature in the week, and at Newcastle-on-Tyne 53°; the mean value from all stations was 61¼°. The lowest temperature of the air was 29° at Eccles, at Plymouth and Norwich 39° was the lowest temperature in the week; the general mean from all stations was 34¾°. The range of temperature in the week was the largest at Cambridge, 35½°, and the smallest at Norwich, 16½°; the mean range of temperature from all stations was 26½.

The mean of the seven high day temperatures was the highest at Truro, 62¼°, and the lowest at Newcastle-on-Tyne, 51½°; the mean from all stations was 57½°. The mean of the seven low night temperatures was the lowest at Cambridge and Newcastle-on-Tyne, both 34¾°, and the highest at Plymouth, 42°, and Brighton, 41°; the mean value from all stations was 38¼°. The mean daily range of temperature was the greatest at Cambridge, 26½°, and the least at Norwich, 10¾°; the mean daily range from all stations was 19½°.

The mean temperature of the air was 46°, being lower than the value for the corresponding week in 1875. The highest was 49¾° at Plymouth, and 49° at Truro; and the lowest 43¾° at Hull.

The weather during the week was cold, very dry and fine; no rain was recorded at any station except at Cambridge and Norwich, where 0.02 inch and 0.05 inch was measured respectively.

The wind blew generally from the E.N.E., and was raw and cold.

In Scotland the highest temperatures of the air ranged from 67° at Greenock to 59½° at Aberdeen. The mean value from all stations was 63¾°. The lowest temperatures of the air varied from 28° at Paisley to 38¾° at Glasgow, the mean from all stations being 33½°. The mean range of temperature from all stations was 30°.

The mean temperature of the air for the week was 48°, being 7° lower than the value for the corresponding week in 1875. The highest occurred at Greenock, 51½°, and the lowest at Aberdeen, 46¾°.

The fall of rain during the week at Aberdeen was one-hundredth of an inch only, and at all other stations no rain fell; the weather was very dry and cold throughout.

At Dublin the highest temperature of the air was 60¾°, the lowest, 30°; the range, 30¾°; the mean, 47°; no rain fell.

James Glaisher.

Answers to Correspondents.

Books: *R. J. M.* Thomson's *Handy Book of the Flower Garden* (Blackwood).

Eupatorium riparium variegatum: *Rodger & Co.* So far as we can judge from the small specimen sent this is likely to prove a useful subject for decorative purposes. The leaves are prettily and freely blotched and margined with greenish-white.

Fungus: *M.* The name of the fungus is Coprinus deliquescens; common about old stumps, &c., and not fit for food.

Geniostoma ligustrifolium of A. Cunningham: *B.* This is a New Zealand shrub or small tree, belonging to the order Loganiaceæ, with opposite ovate leaves, and panicles of white flowers. It is described in Hooker's *Handbook of the New Zealand Flora*, p. 189, and is figured in Hooker's *Icones Plantarum*, tab. 430.

Names of Plants: *C. C.* Lonicera tartarica.—*A Subscriber.* 1, One of the forms of Genista canariensis; 2, Lonicera Ledebourii. Your other questions are answered below.—*Constant Reader.* Medicago maculata, probably.

PABRIKA AND MIGNONETTE PEPPER: *B.* We are sorry we cannot enlighten you about either of these. Piper nigrum certainly cannot be grown in Hungary. Could you send us a sample of Pabrika, or Hungarian Pepper, and Mignonette Pepper?

PEACH LEAVES BLISTERED: *A Subscriber.* Your Peach leaves are suffering from the cold. Pick them off, and encourage fresh growth.

THE SEQUOIA AT THE CRYSTAL PALACE: *B.* It seems as if the erroneous notion as to the origin of the bark set up at Sydenham, and unfortunately destroyed in the fire, could never be effaced. It was truly the bark of S. gigantea (Wellingtonia), and not that of S. sempervirens (Red-wood). The most authoritative contradiction of the false impression in question is that given by Prof. Asa Gray in our columns, 1873, p. 1700.

THE TESTIMONIAL NUISANCE: *Anti-Humbug, and Others.* We entirely sympathise with you in your objections to these proceedings in general, as they have become so common as rather to degrade than honour the individuals intended to be honoured. As to the special case which you mention, it is said to be a strictly private matter; we cannot, therefore, insert your letters.

VINES: *A Subscriber.* The black spots on the leaves of your Vines have been produced through damp and cold draughts of air. They will outgrow it.

WATERCRESS: *J. H. B.* We believe that some are still to be found in the neighbourhood of Upper Clapton and Hackney.

CATALOGUES RECEIVED:—Messrs. F. & A. Smith (Park Road, West Dulwich, London), Catalogue of New and Choice Plants.—M. Louis de Smet (Ledeberg lez Gand, Belgium), Supplementary Catalogue of New Plants, &c.—Messrs. J. Dickson & Sons (108, Eastgate Street, Chester), Catalogue of Bedding-out and Border Plants, &c.; also Lists of New Roses, New and Rare Plants, &c.—Mr. E. B. Haynes (Beckenham Road, Penge), Catalogue of Bedding Plants, &c.

COMMUNICATIONS RECEIVED.—J. A. P.—W. S.—W. T. T.—N. W.—H. G. E.—M. A. H. R.—P. G.—O.—F. S.—E. J. B.—East Somerset.—A. J. R.—G. S. (many thanks).—T. T. H.—Sir T. L.—H. N. E. (with thanks).—H. K.—F. H., Colchester.—Original Subscriber.—F. S.—G. S.

*** IMPORTANT NOTICE.—*The* AGRICULTURAL GAZETTE *is now* PUBLISHED *on* MONDAYS, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, May 18.

Nearly all kinds of summer fruits can now be be had, such as Pines, Melons, Grapes, Peaches, Nectarines, Figs, and Strawberries of home growth, and Apricots and Cherries from Spain and France, at prices slightly under the usual range at this time of year; but should a brisk business spring up they would at once recover. Asparagus is backward, but owing to the large importations from France is realising very low prices. The trade in Cucumbers continues dull. *Jas. Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1 6–	5 6	Melons, each	6 0–	12 0
Apricots, per box	2 0–	3 0	Nectarines	10 0–	36 0
Cherries, per box	3 0–	6 0	Oranges, per 100	6 0–	12 0
Cobs and Filbts., lb.	0 9–	1 0	Peaches, per doz.	10 0–	36 0
Figs	10 0–	20 0	Pears, per doz.	3 0–	15 0
Gooseberries, gr., qt.	0 9–	1 0	Pine-apples, p. lb.	1 6–	4 0
Grapes, per lb.	3 0–	12 0	Strawberries, per oz.	0 3–	1 3
Lemons, per 100	6 0–	10 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz.	4 0–		Lettuces, per score	2 0–	
— Jerusalem, p. lb.	0 3–		Mint, green, bunch	0 4–	
Asparagus (English), per bundle	2 0–	12 0	Mushrooms, per pott.	1 0–	2 0
— French	2 0–	5 0	Onions, young, bun.	0 4–	0 6
— Giant	18 0–	40 0	Parsley, per bunch.	0 4–	
Beans, French, p. 100	1 3–	2 6	Peas, green, per qt.	5 0–	
— Longpod, basket	5 0–		Potatos (new), baskt.	1 0–	
Beet, per doz.	1 0–	2 0	— new Jersey, p. lb.	0 6–	1 6
Cabbages, per doz.	1 0–	2 0	— Sweet, per lb.	0 6–	
Carrots, per bunch	0 6–		Radishes, per bunch.	0 1–	0 3
— new, do.	2 0–		— Spanish, doz.	1 0–	
Cauliflowers, p. doz.	2 0–	4 0	— French	0 6–	
Celery, per bundle	1 6–	2 0	Rhubarb, per bundle	0 6–	1 0
Cucumbers, each	0 4–	1 3	Salsafy, per bundle	0 9–	
Endive, per doz.	1 0–	2 0	Shallots, per lb.	0 3–	
— Batavian, p. doz.	2 0–	3 0	Spinach, per bushel	3 0–	
Herbs, per bunch	0 2–	0 4	Tomatas, per doz.	4 0–	6 0
Horse Radish, p. bun.	3 0–	5 0	Turnips, per bundle	0 4–	
Leeks, per bunch	0 2–	0 4	— New French, do.	1 0–	

Potatos — Rocks, 105*s.* to 110*s.*; Regents, 120*s.* to 170*s.*; Flukes, 130*s.* to 160*s.*; Victorias, 120*s.* to 160*s.* per ton. Old stocks nearly exhausted.

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	4 0–	12 0	Narcissus, single, 12 bunches	2 6–	6 0
Azaleas, 12 sprays	0 6–	2 0	— double, 12 bun.	9 0	24 0
Camellias, per doz.	1 6–	12 0	Pelargoniums, 12 spr.	0 9–	2 0
Carnations, 12 blooms	2 0–	4 0	— Zonal do.	0 6–	1 6
Cineraria, per bunch	1 0–	2 0	Pinks, white, p. doz.	1 0–	2 0
Eucharis, per doz.	6 0–	12 0	Primula, dbl., p. bun.	1 0–	1 6
Gardenia, per doz.	2 0–	9 0	Rhododend., 12 hds.	1 6–	6 0
Heliotropes, 12 spr.	0 6–	1 0	Roses, indoor, p. doz.	1 6–	10 0
Lily of Valley, 12 spr.	0 6–	3 0	Spiræa, 12 sprays	1 0–	4 0
Mignonette, 12 bun.	6 0–	9 0	Stephanotis, 12 sprays	4 0–	15 0
Nemophila, 12 bun.	1 6–	4 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	6 0–	18 0	Heaths, in var., doz.	12 0–	30 0
Azaleas, per doz.	24 0–	60 0	Lily of Valley, doz.	12 0–	30 0
Begonias, per doz.	6 0–	12 0	Mignonette, do.	6 0–	9 0
Bouvardias, do.	12 0–	18 0	Myrtles, do.	3 0–	9 0
Calceolaria, per doz.	9 0–	24 0	Palms in variety, each	3 6–	21 0
— herbaceous, doz.	6 0–	18 0	Pelargoniums, scarlet, per doz.	4 0–	9 0
Cineraria, per doz.	6 0–	18 0	— in variety, doz.	18 0–	36 0
Cyperus, do.	6 0–	12 0	Petunias, double, doz.	9 0–	36 0
Deutzia, do.	6 0–	18 0	— single, per doz.	6 0–	12 0
Dielytra, do.	12 0–	24 0	Roses, Fairy, do.	9 0–	15 0
Dracæna terminalis	30 0–	60 0	— various, do.	18 0–	30 0
— viridis, per doz.	18 0–	24 0	Spiræa, per doz.	9 0–	24 0
Ficus elastica	2 6–	15 0	— palmata, each	2 0–	5 0
Fuchsia, per doz.	6 0–	18 0			
Genista, do.	6 0–	18 0			

SEEDS.

LONDON: *May 17.*—Late as it is, orders still come to hand for Clover seeds, but rain is now badly wanted, and a sufficient downpour would probably see the spring season wind up with a good spurt. Of choice Trefoil seed the quantity remaining is about *nil*, most houses being quite cleared out, which is an unusual occurrence. Of fine red seed there is also very little in stock; a moderate quantity, however, of secondary and lower qualities will have to be kept over till next year. Of Alsike and white Clover the present available supply is in the narrowest compass. For grass seeds the sale is meagre at drooping prices. Spring Tares also exhibit a further fall, the supply greatly exceeding the demand. For sowing Rape seed there is a steady request, at hardening currencies. Mustard, both white and brown, remains quiet. Canary seed is again cheaper, but Hemp is firm. Linseed shows no variation from the remarkably low level of value at which it has now stood for some time. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Trade at Mark Lane on Monday was firm, with very little doing. For English Wheat factors asked, but failed to establish, an advance of 1*s.* per quarter upon the rates of last week; and for foreign Wheat offers at or about the currency of last Monday were not generally rejected. For grinding barley there was some enquiry, but malting sorts remained very dull. Prices were quoted as before. Malt experienced a slow sale, and about supported previous figures. Oats were in moderate request, and prices were unaltered. Maize was quiet. Beans and Peas were held for full prices. For flour prices were no better.—On Thursday trade was firm but not active. Both English and foreign Wheat well supported the rates of Monday. Barley was rather dull, and there was little disposition to operate in Malt. Oats were taken off quickly on former terms, while no change was reported in Maize, Beans, or Peas. Flour was to some extent supported by the hardening tendency of Wheat.—Average prices for the week ending May 13:—Wheat, 45*s.* 1*d.*; Barley, 34*s.*; Oats, 27*s.* For the corresponding week last year:—Wheat, 42*s.* 2*d.*; Barley, 37*s.* 4*d.*; Oats, 30*s.* 7*d.*

CATTLE.

At the Metropolitan Market on Monday trade in beasts was active, and higher prices were generally obtained. In sheep trade was slow, and there was scarcely a quotable alteration in price. Lambs were decidedly lower. Calves sold about the same as on Thursday last. Quotations:—Beasts, 4*s.* 6*d.* to 5*s.*, and 5*s.* 6*d.* to 6*s*; calves, 5*s.* to 6*s.* 4*d.*; sheep, 5*s.* 6*d.* to 5*s.* 10*d.*, and 6*s.* 4*d.* to 6*s.* 8*d.*; lambs, 8*s.* to 9*s.*; and pigs, 4*s.* 4*d.* to 5*s.* 4*d.*—On Thursday the market for beasts was at the extreme of Monday's rates. Both sheep and lambs found a steady sale at late rates. Prime calves were in some request, and pork was nominally unaltered.

HAY.

At Whitechapel on Tuesday a good demand prevailed for fodder, and, with only a moderate supply, prices were rather dearer. Prime meadow hay, 90*s.* to 135*s.*; inferior do., 55*s.* to 75*s.*; prime Clover, 100*s.* to 150*s.*; inferior do., 85*s.* to 95*s.*; and straw, 35*s.* to 50*s.* per load.—On Thursday the supplies were fair and trade steady. Quotations:—Clover, best, 115*s.* to 147*s.*; inferior, 85*s.* to 95*s.*; hay, best, 112*s.* to 135*s.*; inferior, 55*s.* to 75*s.*; straw, 36*s.* to 48*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 138*s.* to 150*s.*; inferior, 105*s.* to 120*s.*; superior Clover, 150*s.* to 160*s.*; inferior, 120*s.* to 132*s.*; and straw, 48*s.* to 52*s.* per load.

POTATOS.

At the Borough and Spitalfields markets on Monday, the sale for Potatos was steady, and prices showed some advance. The arrivals were upon a moderate scale. Kent Regents, 140*s.* to 175*s.* per ton; Essex do., 130*s.* to 165*s.*; Scotch do., 150*s.* to 180*s.*; rocks, 100*s.* to 110*s.*; Victorias, 160*s.* to 185*s.*; flukes, 160*s.* to 190*s.*; and kidneys, 100*s.* to 130*s.*

COALS.

There was a quiet demand for house coals in the market on Monday, and the price gave way 1*s.* per ton. On Wednesday there was a good demand for all classes. Quotations:—Hastings Hartley, 18*s.* 3*d.*; Walls Ends—Harton, 17*s.* 9*d.*; Eden Main, 17*s.* 9*d.*; Haswell, 20*s.*; Hetton, 20*s.*; Hetton Lyons, 17*s.* 9*d.*; Lambton, 19*s.* 6*d.*; Original Hartlepool, 20*s.*; Tunstall, 17*s.* 9*d.*; Kelloe, 18*s.*; East Hartlepool, 19*s.* 6*d.*; Thornley, 19*s.*; Tees, 19*s.* 9*d.*

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FLORISTS' FLOWERS,

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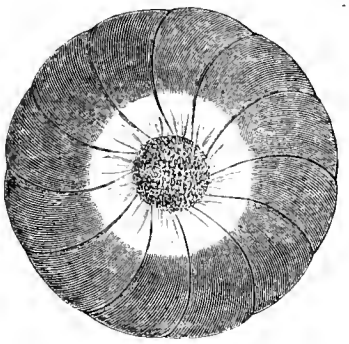

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From Mrs. A. ALLERTON, *Prittlewell, May 8.*

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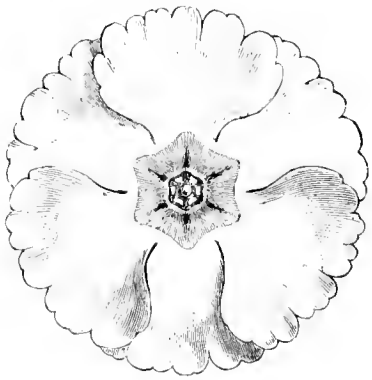

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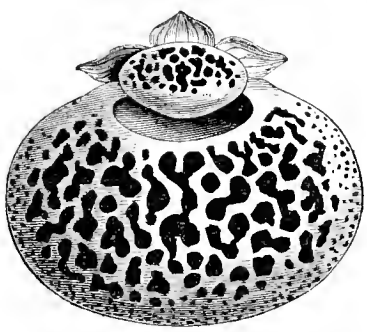
From W. EDWARDS, Esq., *Wellington, January 21.*

"I cannot help saying that the Primulas from your seed have always given great satisfaction, but this year more than ever."

The Finest Strain of Calceolaria.



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Per packet, 2*s.* 6*d.*

From A. E. RUSSELL, Esq., *Dalnabreck, July 10.*

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SUTTON & SONS,

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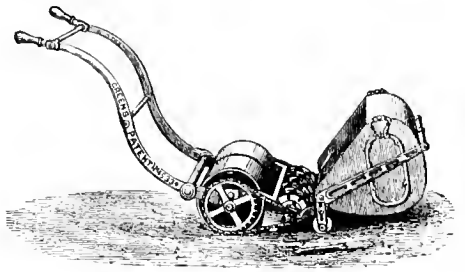

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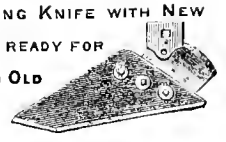

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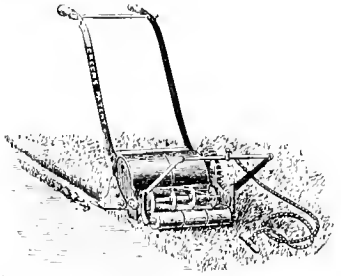

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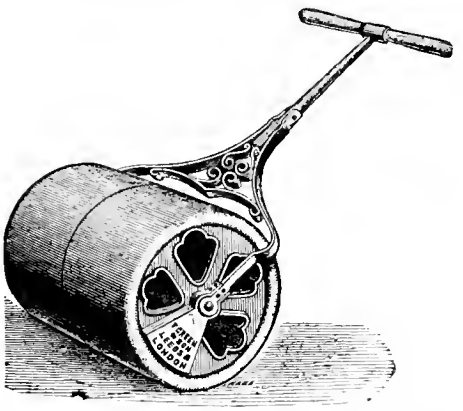

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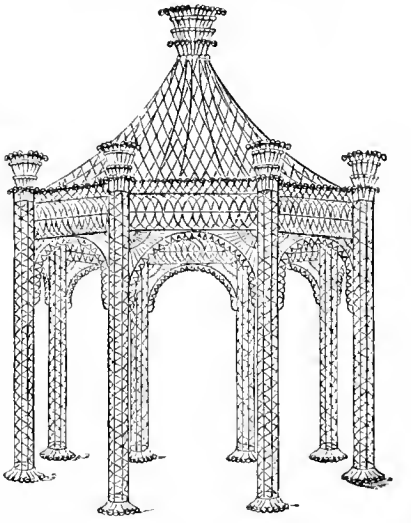

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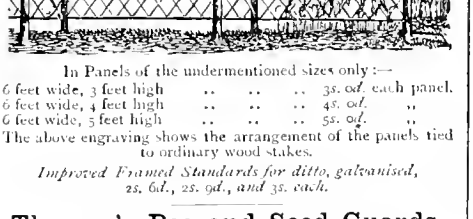

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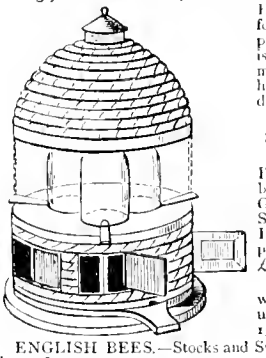

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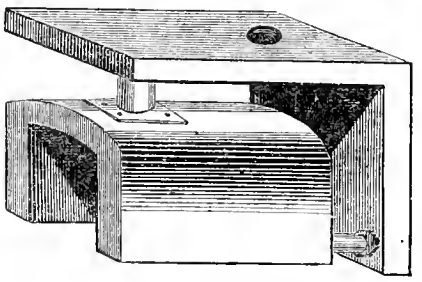

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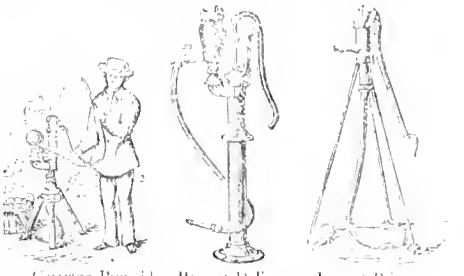

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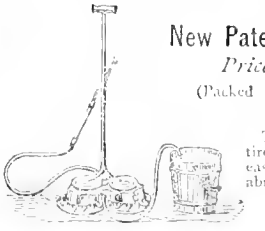

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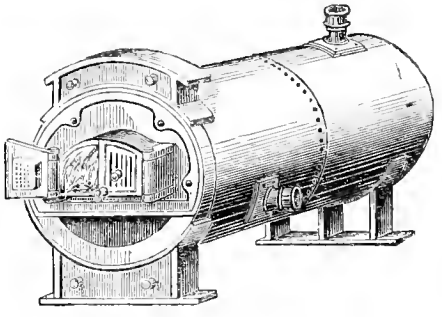

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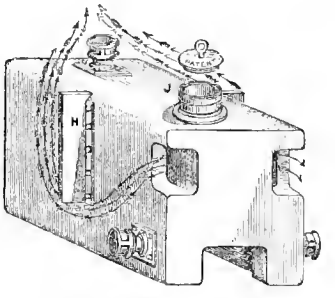

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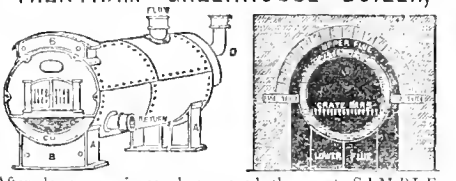

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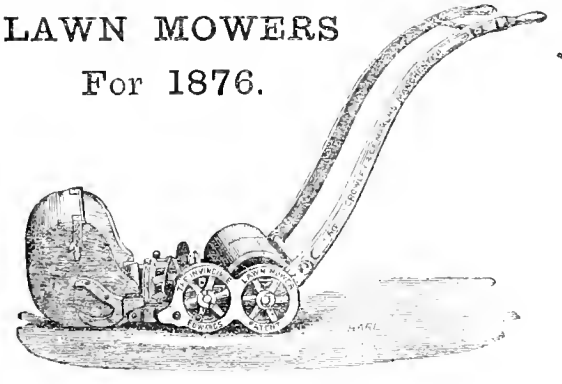

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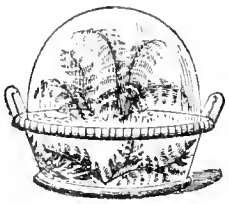

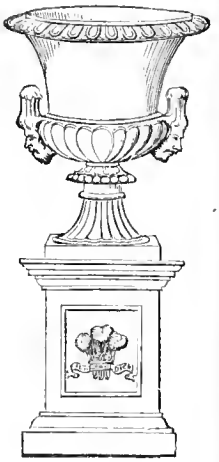

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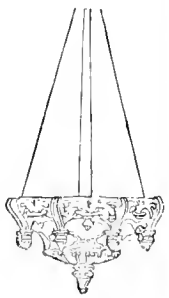

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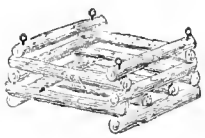
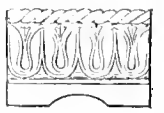

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Yours truly,

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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

No. 126.—Vol. V. { New Series. } SATURDAY, MAY 27, 1876. { Registered at the General Post Office as a Newspaper. } Price 5d. { Post Free, 5½d. }

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Subscribers who wish to have "The Gardeners' Chronicle" forwarded DIRECT FROM THE OFFICE are respectfully informed that payment MUST BE MADE IN ADVANCE.

PELARGONIUM SOCIETY.—The Schedules of Prizes offered by this Society on JUNE 7 and 8, and JULY 19 and 20, at the Royal Horticultural Society's Exhibitions, may be obtained on application to THOMAS MOORE, Hon. Sec.
Botanic Garden, Chelsea, London, S.W.

Notice.

THE NEXT GRAND FLOWER SHOW will take place at the ROYAL AQUARIUM SUMMER and WINTER GARDEN on MAY 30 and 31, when the grandest display of Orchids ever seen in Europe will be exhibited. Also the LARGEST DISPLAY of FRUIT ever seen at any Summer Exhibition.
Royal Aquarium, Westminster, May 18.

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CHARLES PARKER, Hon. Sec.
Wisbech.

SPALDING HORTICULTURAL SHOW, JUNE 21 and 22. ENTRIES close JUNE 16. Schedules on application to
GEORGE KINGSTON, Secretary.

Winter Gardens, Southport.

THE GRAND HORTICULTURAL EXHIBITION will open JULY 5. ENTRIES close JUNE 27.
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A. CAMPBELL, Horticultural Superintendent.

THE TORBAY HORTICULTURAL SOCIETY.—The Committee have the pleasure to announce that their SUMMER SHOW will be held at Torquay on JUNE 29 and 30. FIFTY POUNDS will be offered as Special Prizes for CUT ROSES (open to all England). Classes for FRUIT and VEGETABLES (open). Prize Lists, &c., ready. Entries close on Friday, June 23.
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Braddon Tor, Torquay.

SANDOWN PARK CLUB. GRAND FLOWER and FRUIT SHOW.
A GRAND FLOWER and FRUIT SHOW, under distinguished Patronage, will be held in Sandown Park, Esher, Surrey, on FRIDAY and SATURDAY, July 7 and 8, when upwards of £350 will be given in Prizes. Schedules are now ready, and may be had on application to
JOHN WILLS, Royal Exotic Nursery, Onslow Crescent, South Kensington, S.W.
J. WHITTAKER BUSHE, General Manager.

SUTTON'S GRASS SEEDS for PASTURES, 22s. 6d. to 36s. per Acre. Carriage free.

SUTTON'S GRASS SEEDS for PARK GROUNDS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for GARDEN LAWNS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for CROQUET GROUNDS, 20s. per Bushel. Carriage free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

CATALOGUES. — His Excellency Pierre Wolkenstein will feel greatly obliged if Nurserymen and Seedsmen will kindly send him their Catalogues. They should be forwarded (by post) to
S. E. PIERRE WOLKENSTEIN, Secrétaire de la Société Impériale d'Horticulture de Russie, St. Petersburg.

To the Trade.

GIBBS AND COMPANY, Florists, &c., Woodbridge, Suffolk, INVITE TRADE CATALOGUES.

PHLOXES, PENTSTEMONS, and DOUBLE PYRETHRUMS. Strong plants of the above, 30s. per 100, comprising the best named kinds only.
J. JACKSON, Nursery, Kidderminster.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

QUEEN and BLACK JAMAICA PINES, clean and healthy—about 100 Succession for Sale. Offers invited. Apply to
Mr. W. CRUMP, Blenheim Gardens, Woodstock.

Fruiting and Planting Vines.

THE COWAN PATENTS' COMPANY (late Meredith) have still on hand a good selection of the above. Catalogues and prices on application. They can also offer good Fruiting and Succession PINES.
The Vineyard, Garston, near Liverpool.

Vines.

H. LANE AND SON have still on hand strong Canes of the leading kinds, showing from six to twelve bunches of fruit. Also a fine collection of IVIES, in pots.
The Nurseries, Berkhampstead, Herts.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.
Mr. WEBB, Calcot, Reading.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

To the Trade.

ASPARAGUS, 1-yr., 2-yr., and 3-yr. TROPÆOLUM CANARIENSE.
JAMES BIRD, American Nurseries, Downham.

To the Seed Trade.

H. AND F. SHARPE'S special SPRING CATALOGUE of home-grown MANGEL WURZEL, TURNIP, and other AGRICULTURAL and GARDEN SEEDS, is now ready, and will be forwarded on application.
Seed Growing Establishment, Wisbech.

ROBINSON'S CHAMPION DRUMHEAD CABBAGE.—Extra good autumn-sown plants, price 3s. 6d. per 1000.
JAS. IVERY AND SON, Dorking Nursery, Surrey.

Mangel and Swede.

JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself.
Bardney Manor, Lincoln.

EVERGREEN OAKS.—A few hundreds, 3 to 6 feet, in pots, 50s. to 150s. per 100. May be planted successfully in exposed situations in May. Apply to
CHARLES B. SAUNDERS, Nurseryman, Jersey.

JEAN VERSCHAFFELT'S Nursery, 134, Fanbourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Wood Engraving.

MR. W. G. SMITH, Artist and Engraver on Wood, 15, Mildmay Grove, London, N.

Hothouses, Hot-water Apparatus, &c.

HALLIDAY AND CO., Hothouse Builders and Hot-water Apparatus Manufacturers. Estimates and Plans free. Best Construction! Best Materials! Best Workmanship! Catalogues free.
Offices: 22, Barton Arcade, MANCHESTER.

CARTER'S GRASS SEEDS for Lawns and Parks, 20s. per bushel.

CARTER'S GRASS SEEDS for Permanent Pastures, 22s. 6d. to 36s. per acre.

CARTER'S GRASS SEEDS. Carriage Free. To suit all Soils.

CARTER'S GRASS SEEDS for Renovating Meadows and Lawns, 18s. to 20s. per bush.

CARTER'S, THE QUEEN'S SEEDSMEN, 237 and 238, High Holborn, W.C.

VAN HOUTTE MEMORIAL.—A few of the leading English Nurserymen and Horticulturists propose to originate a Memorial of the late M. Van Houtte, of Ghent, and for this purpose a Meeting will be held at the Royal Horticultural Gardens, South Kensington, on FRIDAY, June 2, at 2 P.M., when all who are interested in the movement are invited to attend or communicate previously with
H. J. VEITCH, Royal Exotic Nursery, Chelsea.

VERBENAS for the MILLION.—Purple King, Crimson, Scarlet, White, Pink, and other varieties, spring-struck, 6s. per 100. Strong plants of all the above colours, well hardened, 8s. per 100. Package free for cash.
S. BIDE, Alma Nursery, Farnham.

Verbenas, Verbenas, Verbenas.

WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

Verbenas, Verbenas.

JOHN SOLOMON offers White, Scarlet, Purple, Pink, Crimson, Rose, and other mixed sorts, good strong spring-struck cuttings, well rooted, at 6s. per 100, 50s. per 1000, package included. Cash to accompany all orders.
Islington Nursery, Park Street, Islington, N.

Cineraria, Calceolaria, and Primula Seed.

F. AND A. SMITH offer the above, saved from their well-known superior collections, in 1s., 2s. 6d., and 5s. packets. Price per weight to the Trade upon application.
The Nurseries, West Dulwich, S.E.

To the Trade.

DAHLIAS, VERBENAS, TEA ROSES, PYRETHRUMS, GLOXINIAS, and PHLOXES. Prices on application to
KELWAY AND SON, The Royal Nurseries, Langport, Somerset.

Bedding Plants.

F. W. COOPER can supply the Trade and others with the above in large quantities. The stock is well grown and healthy, the plants all in separate pots. Priced List on application.
F. W. COOPER, Florist, Huntingdon.

BEDDING PLANTS in Variety.—Good, hardened off, at 12s., 16s., and 20s. per 100. GERANIUMS, Magenta King and Black Prince, 3s. 6d. per dozen; Curiosity and Happy Thought, 1s. each. FUCHSIAS in variety, cheap.
W. GROVE, Tupsley, Hereford.

Notice.—Seeds, Seeds.

WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds. CATALOGUES now ready, which contain every requisite, at fair prices, post-free on application.
Highgate, London, N.

Plant Catalogue.

CHARLES TURNER'S DESCRIPTIVE LIST of PLANTS for the Season, including several new varieties now offered for the first time, is ready, and may be had on application.
The Royal Nurseries, Slough.

ARAUCARIA EXCELSA, very healthy, well furnished plants, admirably adapted for decorative purposes, 15 to 18 inches high. Price on application. Trade supplied.
FRANCIS & ARTHUR DICKSON & SONS, Upton Nurseries, Chester.

60,000 Roses in Pots.

ROSES for BEDDING, at 12s. to 18s. per dozen, and 80s. per 100; splendid plants.
WM. WOOD AND SON, The Nurseries, Muresfield, Uckfield, Sussex.

TEA-SCENTED ROSES.—Strong plants, of best varieties, for Bedding or General Decoration, at 12s. per dozen, 80s. per 100. Immense Stock of GREENHOUSE and BEDDING PLANTS, which are worth growing. See CATALOGUE, free on application.
WILLIAM KNIGHT, Floral Nursery, Hailsham, Sussex.

LETTY COLES.—This Rose is now being sent out; plates may be had for eighteen stamps. The finest Tea Rose sent out for years.
JOHN KEYNES, Nurseryman, Salisbury.

SALES BY AUCTION.

SALE THIS DAY, at ONE O'CLOCK PRECISELY.

Pine-apple Nursery, Edgware Road, St. John's Wood.

UNRESERVED SALE of PLANTS.

MR. J. C. STEVENS will SELL by AUCTION, on the Premises, Pine-apple Nursery, Edgware Road, W., THIS DAY, at 1 o'Clock precisely, the Second Portion of the valuable Collection of STOVE and GREENHOUSE PLANTS, and a large quantity of BEDDING PLANTS, &c.

Catalogues had on the Premises, and of Mr. J. C. Stevens, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

Valuable Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, May 30, at half-past 12 o'Clock precisely, a new SILENIPEDIUM, collected by Mr. Wallis, supposed to be Silenipedium Hartwegii, Reichenbach, never before received alive; and some large masses of Odontoglossum citrosmum roseum, Mormodes luxatum, Mormodes pardinum, Oncidium luridum, Odontoglossum Insleayii leopardinum, Cattleya maxima, Odontoglossum cordatum, Lælia autumnalis, Cattleya citrina, and a quantity of Established Mexican Orchids.

On view the morning of Sale, and Catalogues had.

Exhibition Stove and Greenhouse Plants, Imported ORCHIDS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, June 1, at half-past 12 o'Clock precisely, a COLLECTION of SPECIMEN AZALEAS, YUCCAS, ERICAS, PALMS, FERNS, ANTHURIUMS, and other plants from the Show at the Royal Aquarium, Westminster, 800 ODONTOGLOSSUM CRISPUM in fine condition; 100 cases of ORCHIDS, just to hand, to be Sold in cases, as they have arrived; also an importation of INDIAN ORCHIDS, including Aerides Fieldingii, Saccolabium guttatum, Dendrobium lituiflorum, D. Cambridgeanum, Vanda cærulea, Saccolabium ampullaceum, Vanda Goweræ, Dendrobium chrysotoxis, Cymbidium eburneum, C. Mastersii, &c.; and a Collection of ESTABLISHED ORCHIDS, the property of a Gentleman.

On view the morning of Sale, and Catalogues had.

Periodical Sale of Poultry and Pigeons.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, June 6, at half-past 12 o'Clock precisely, a great variety of choice POULTRY and PIGEONS, from the yards and lofts of well-known Breeders and Exhibitors.

On view the morning of Sale, and Catalogues had.

Cattleya Schilleriana.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., early in June, about 100 lots of the very rare CATTLEYA SCHILLERIANA.

Willesden, N.W.

CLEARANCE SALE.—By order of the Executors of the late Mr. Chapman.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, close to the Chapel as above, on MONDAY, May 29, at 1 o'Clock precisely, about 7000 BEDDING PLANTS of the usual assortment, 3 GREENHOUSES, 13 PITS, 300 feet HOT-WATER PIPING, and other effects.

On view the day prior, and Catalogues had on the Premises; and of the Auctioneers, 98, Gracechurch Street, City, and Leytonstone, E.

Hornsey, N.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the American Nurseries, Hanley Road, West Hornsey Road, N., by order of Messrs. Prattley & Co., on TUESDAY, May 30, at 12 o'Clock precisely, about 40,000 BEDDING PLANTS of a large and choice assortment; also some valuable STOVE and GREENHOUSE PLANTS.

On view day prior. Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Bagshot, Surrey.

UNRESERVED SALE of the First Portion of the HEATHERSIDE COLLECTION of POT PLANTS, including 5000 Choice TEA ROSES, 5000 thriving CLEMATIS, and other valuable Stock.

MESSRS. PROTHEROE AND MORRIS are instructed by the Directors of the Heatherside Nursery Company to SELL the above by AUCTION on the Premises, The Heatherside Nursery, Bagshot, on TUESDAY, June 6.

More detailed particulars will shortly appear.

Hope Nursery, Lewisham High Road, S.E.

MR. J. J. JENKINS will SELL by AUCTION, by order of Mr. Berkly, on the Premises as above, on SATURDAY, June 3, at 1 o'Clock precisely, about 40,000 BEDDING PLANTS of the usual assortment.

On view day prior, and Catalogues had on the Premises.

Mr. John Thompson's Carr Nurseries, Doncaster, YORKSHIRE.

PRELIMINARY ADVERTISEMENT.

MESSRS. THOMSON AND WOOD have received instructions from the Executors of the late John Thompson to Offer for SALE by AUCTION, on FRIDAY, June 16 (full particulars of which will be given in future advertisements), the whole of the LAND of the above extensive Nurseries, comprising about 14 Acres, with the RESIDENCE, COTTAGES, GREENHOUSES, and other Buildings thereon, situate near to the town of Doncaster. The large Stock of TREES, SHRUBS, and PLANTS may be taken by the purchaser at a valuation.

COLLINSON, LITTLEWOOD, AND PARKIN,
Great Grimsby, May 16. Solicitors, Doncaster.

To Market Gardeners and Nurserymen.

LAND of a very superior quality—any quantity, from 40 Acres upwards—within 12 miles of Covent Garden, on the south side of London, having great railway facilities, and near two or three market towns. Apply to M. M., Junior United Service Club.

TO BE SOLD, about 16,000 feet of GLASS, specially erected for Grape Growing for Market purposes, built regardless of cost and upon the most approved principles. The heating is most efficient, and the working details throughout perfect. The Houses are stocked with young Vines in grand condition and just coming into fruit.

TO BE LET, upon long Lease, about 4 acres of rich GROUND which is attached, and within 4 miles of Covent Garden, situate south. Apply to

Mr. RANSLEY TANTON, Horticultural Valuer, Office, 17A, High Street, Borough, London, S.E.

COLCHESTER and EAST ESSEX HORTICULTURAL SOCIETY.—A two days' Show will be held at Lexden Park, Colchester, on JUNE 28 and 29 next, in connection with the Essex Agricultural Show. £200 will be offered for Plants, Roses, Orchids, &c., in classes for Amateurs and Growers. Two Military Bands will attend. Prize Lists, &c., may be obtained of

Mr. WM. HARRISON, Sec.
Colchester, and Birch Villa, near Colchester.

RICHMOND HORTICULTURAL SOCIETY.

President: H.S.H. the Duke of TECK, G.C.B.

Under the Royal and Distinguished Patronage of—
H.R.H. the Duchess of CAMBRIDGE,
H.R.H. the Princess MARY OF CAMBRIDGE, Duchess of TECK.
H.R.H. the Duc D'AUMALE, &c.

The SECOND EXHIBITION of PLANTS, FLOWERS, FRUIT, VEGETABLES, and DINNER-TABLE DECORATIONS, will be held in the Old Deer Park, Richmond Green (by the kind permission of Mr. Fuller), on THURSDAY, June 29, 1876. Schedules may be obtained of the Hon. Secretary.

ALBERT CHANCELLOR, Hon. Sec.
1, King Street, Richmond, S.W.

NOTTINGHAM and MIDLAND COUNTIES GRAND ROSE SHOW and HORTICULTURAL EXHIBITION (Open to all England) will be held at the Arboretum, Nottingham, on THURSDAY, FRIDAY, SATURDAY, and MONDAY, July 6, 7, 8, and 10. The Mayor of Nottingham President. Prize List amounting to upwards of £600. Space will be allotted for the Exhibition of Horticultural Implements and Garden Furniture. Medals and Certificates of Merit awarded.

Schedules are now ready, and may with particulars be obtained on application to ALFRED KIRK.
Municipal Offices, Nottingham.

Wellingborough.

GRAND SHOW of FLOWERS, FRUITS, VEGETABLES, &c., under distinguished Patronage.

A Grand Flower, Fruit, &c. Exhibition (open to all England) will be held in Mr. Banks' Fields, on FRIDAY and SATURDAY, July 7 and 8, when Prizes amounting to £180 will be offered for competition. The Band of the Coldstream Guards is engaged for Friday. Schedules and other information may be obtained of the Hon. Sec., W. B. PARKE.

SHROPSHIRE HORTICULTURAL SOCIETY.—The ANNUAL EXHIBITION will be held in The Quarry, Shrewsbury, on WEDNESDAY and THURSDAY, August 16 and 17. PRIZES amounting to about £230, including for 12 Stove and Greenhouse Plants, £15, £10, and £8. Schedules and all particulars from the Hon. Secs., Messrs. ADNITT AND NAUNTON, Shrewsbury.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION, for the relief of decayed Farmers, their Widows and Orphans.

Patron—HER MAJESTY THE QUEEN.
President—His Grace the Duke of RICHMOND AND GORDON.

Allowances to Pensioners:—

Married	£40 per annum.
Male	26 ,,
Widows and unmarried Orphan Daughters	20 ,,

Every information to be had of the SECRETARY, by whom Subscriptions and Donations will be thankfully received.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.—The ANNUAL GENERAL MEETING will be held at Willis's Room, St. James's, on WEDNESDAY, June 21, at 11 o'Clock precisely; and the ELECTION of PENSIONERS will take place on the same day at 11.30 o'Clock.

All Subscriptions shall be deemed payable on January 1 in each year; and no Contributor shall vote in respect of an Annual Subscription while the same is in arrear.

Offices of the Institution—
No. 26, Charles Street, St. James's, London, S.W.

CENTAUREA CANDIDISSIMA, in single pots, nice plants, 20s. per 100, package included. Not less than 25 at the above price. Half to quarter specimens.

KALOSANTHES COCCINEA, well set for flower, 3s. 6d., 5s., to 7s. 6d. each.

JOHN HOUSE, Eastgate Nurseries, Peterborough.

GIANT ASPARAGUS PLANTS, the best that money can procure, all certain to grow, 2s. 6d. per 100. This delicious vegetable does not require half the expense usually incurred in planting it. See RICHARD SMITH'S SEED LIST for 1876.

Extra strong SEAKALE, 2s. per dozen.

RICHARD SMITH, Nurseryman, Worcester.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000; and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.

Wonersh Nursery, Guildford, Surrey.

TRICOLOR GERANIUMS. — 20,000 Mrs. Pollock and Sophia Dumaresque, at 3s. 6d. per doz., package included, or post-free at same price. The Trade supplied. ALFRED FRYER, The Nurseries, Chatteris, Cambridgeshire.

Bedding, Bedding.

CALCEOLARIA AUREA FLORIBUNDA, autumn struck, 16s. per 100, box included. Cash to accompany order.

Mr. TANTON, Nurseryman, Epsom, Surrey.

DOWNIE AND LAIRD beg to intimate that their fine stocks of Show and Fancy PANSIES, also VIOLAS, are now in fine flower at their Pinkhill Nurseries. Many of their Seedlings this season are of surpassing beauty. Inspection invited.

Edinburgh, May 24, 1876.

A Guinea Collection of Roses.

EDWIN HILLIER offers 12 Tea and Noisette and 12 Hybrid Perpetual ROSES, splendid plants, for 21s.; 48 Choice ROSES for 40s. Best new English and French ROSES, in fine healthy plants. Post-office Orders with each order to

EDWIN HILLIER, Nurseries, Winchester.

Hyacinths, Tulips, Crocus, Narcissus, &c.

BUDDENBERG BROS., Hillegom, Haarlem, Holland.—WHOLESALE CATALOGUE of DUTCH BULBS now ready, and may be had free on application to

Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Flowering and Foliage Plants.

F. AND A. SMITH can supply Flowering PELARGONIUMS and ERICAS for Windows and Conservatories; DRACÆNAS, and other Foliage Plants, for Table Decoration; FERNS, strong and well grown, for Cases, in great variety and at reasonable prices. Priced List upon application.

BEDDING-OUT PLANTS for SALE.—About 200 dozen GERANIUMS, various kinds, and all good, in pots, and capital condition; also two dozen PEACH TREES, in pots; these are very fine healthy trees, have not been forced, and now in the third season.

T. MAYFIELD, Farmer, Tattershall, Boston.

Ferns.

W. AND J. BIRKENHEAD devote almost the whole of their attention to the Cultivation of BRITISH and EXOTIC FERNS. Their Collection consisting of many thousands, they are enabled to offer them by the dozen or hundred, at most reasonable Prices. CATALOGUES sent on application.

Fern Nursery, Sale, near Manchester.

Pelargoniums, Pelargoniums.

JAMES HOLDER'S unrivalled Collection—strong healthy Plants, Show, French, and Fancy varieties, at 35s. per 100, cash, hamper and packing included. Extra strong plants, in 48's and 32's, at 9s. and 12s. per dozen, basket and packing extra.

Crown Nursery, Reading.

New Zealand Native Shrub and Tree Seed.

GEORGE PURDIE AND CO. have always on hand an assortment of the above, carefully selected. Three and Five Guinea Collections, including the leading AUSTRALIAN GUMS and WATTLES, post-free to all parts of the World. All Orders must be accompanied by a remittance.

GEORGE PURDIE AND CO., Seed Merchants, &c., Timaru, Canterbury, New Zealand.

A. M. C. JONGKINDT CONINCK begs to offer:—

CROCUSES, and DUC VAN THOLL TULIPS, at the lowest prices.

CRYTOMERIA JAPONICA, strong 1-yr. seedlings, 20s. per 1000.

Tottenham Nurseries, Dedemsvaart, Holland.

NEW STRIPED ROSE—BEAUTY OF GLAZENWOOD.—"A Rose of golden-yellow, striped and flaked with scarlet or vermilion, sounds like a dream or a fairy tale. It is nevertheless a reality." H. CURTIS, in the *Garden*. Full particulars free by post.

LEWIS WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

E. G. HENDERSON AND SON. SEEDS—EXTRA QUALITY.

PRIMULA SINENSIS FIMBRIATA, 2s. 6d. and 5s. per packet.
,, ,, FLORE PLENA, 2s. 6d. and 5s. per packet.
CINERARIA and CALCEOLARIA, 2s. 6d. and 5s. per packet.
CYCLAMEN PERSICUM, choice quality, 1s. and 2s. 6d. per packet.
,, ,, double-flowered, 2s. 6d. and 5s. per packet.

Wellington Nursery, St. John's Wood, N.W.

Verbenas, Verbenas.

JOHN SOLOMON offers the following good, strong plants, well hardened and established in single pots:—

VERBENAS, scarlet, purple, white, and other mixed sorts, 12s. per 100.
GERANIUMS, Vesuvius, Silverleaf, and Flower of Spring, £1 per 100.
CALCEOLARIAS, best bedding yellows, 12s. per 100.
LOBELIAS, speciosa, pumila, and Blue King, 12s. per 100, all true, from cuttings.
HELIOTROPES, best bedding sorts, 12s. per 100. Package included.

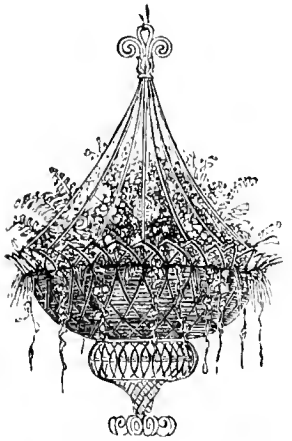
Cash to accompany all orders.
Islington Nursery, Park Street, Islington, N.

New Catalogue of Bulbs, Fruits, Plants, &c.

ROBERT PARKER begs to announce that his New CATALOGUE, containing Select, Descriptive, and Priced Lists of Alpine and Herbaceous Plants, Aquatic and Marsh Plants, Begonias, tuberous-rooted; Bulbs, Chrysanthemums, early blooming bedding varieties; Delphiniums, Ferns, hardy, greenhouse and stove; Fruit Trees, Grapes, Hardy Climbing and Wall Plants, Iris germanica, miscellaneous Bedding and Decorative Plants, Narcissus, Palms and Cycads, Pæonia sinensis, Phlox, herbaceous; Potentillas; Pyrethrums, double-flowered; Sweet Violets, &c., is now published, and will be forwarded to applicants.

Exotic Nursery, Tooting, Surrey, S.W.

HORTICULTURAL IRON AND WIRE WORK.



Ornamental Suspending Basket,
For Conservatories, &c.
17 in. diam., 10s. | 24 in. diam., 15s.
Galvanised or Painted.

R. HOLLIDAY,

MANUFACTURER of all kinds of IRON and WIRE WORK
(PLAIN and ORNAMENTAL)
For GARDENS and CONSERVATORIES,
GARDEN ESPALIERS, SQUARES and CORDONS.

GARDEN WALL WIRING
On the most improved principles for Strength, Durability, and Neatness.
(SPECIALITY)

COVERED WAY ESPALIERS. GARDEN ARCHWAYS.
ROSE FENCES. ROSERIES. RABBIT-PROOF GARDEN FENCING.
GARDEN SCREENS, GARDEN BORDERING, &c.

LAWN AVIARIES AND PHEASANTRIES.

WROUGHT-IRON ENTRANCE AND GARDEN GATES.
WROUGHT AND CAST-IRON RAILING.
Plain and Ornamental Verandahs in Cast-iron, Wrought Iron, and Wire.

Lawn Basket,
Suitable for Croquet Lawns and other places where it is not desirable to cut the Grass for beds.
26 in. diam., price 15s., or £8 10s. per dozen.

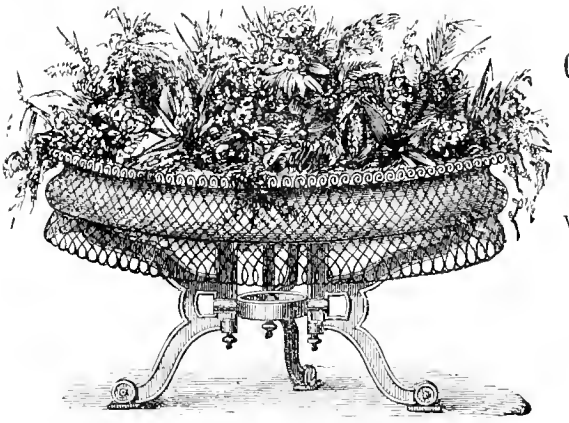
Hanging Baskets for Conservatories

IMPROVED FLOWER STAND.

Royal Horticultural Society's Flower Stand, South Kensington.

Circular or Half Circular, and made to fit round column.

The Circular can be made to revolve.



CONSERVATORIES FITTED UP

WITH THIS

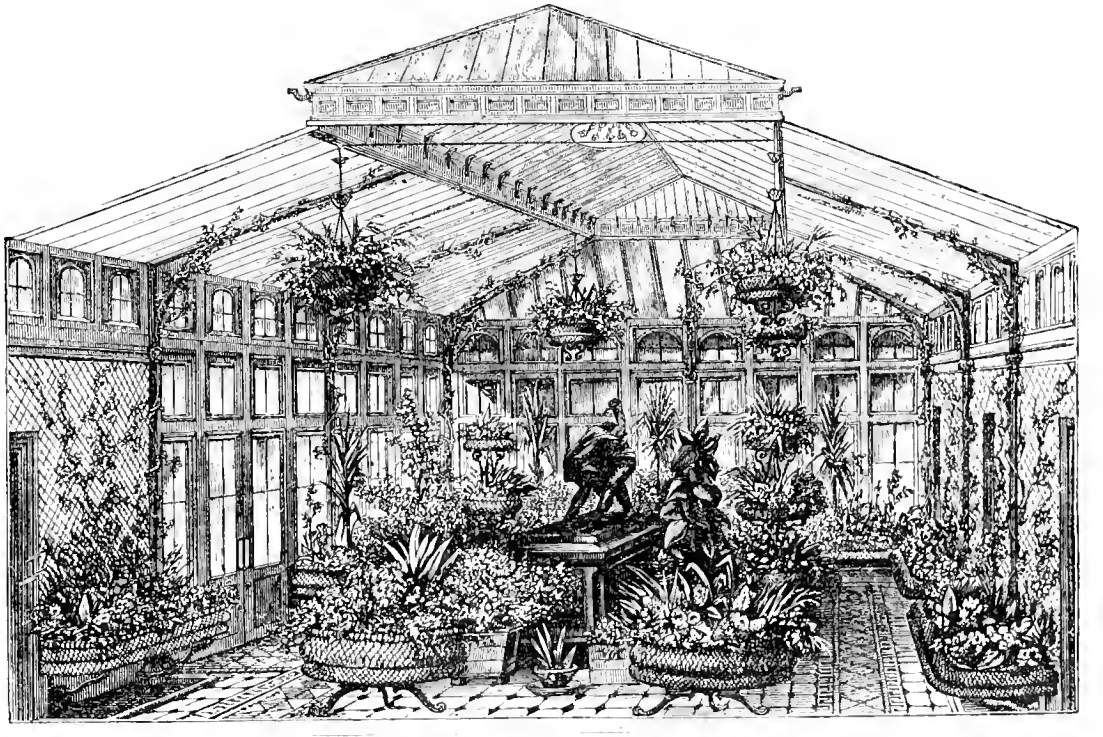
STRONG and ELEGANT FLOWER STAND,

Which can be made to suit any position.

Wire Boxes for Lycopodium fitted to each stand.

CONSERVATORIES fitted up with Wrought-Iron Flower Stage Stands, and Wirework Flower Stands, Suspending Baskets, Trelliswork for Creepers, Aviaries, &c. Vineries and other Fruit Houses fitted up with Strained Wire Trellises.

Specimen of Conservatory as fitted up by R. Holliday, with Improved Flower Stands, Trellis Baskets, &c., *for Arthur J. Lewis, Esq., Moray Lodge, Kensington.*



WORKS:— 2a, PORTOBELLO TERRACE, NOTTING HILL GATE, LONDON, W.
Close to High Street, Notting Hill. *Book Catalogue on application.*

THE KNAP HILL CYPRESS,
Cupressus Lawsoniana erecta viridis.

ANTHONY WATERER

Will be happy to supply beautiful specimens of this famous hardy Evergreen, at the following prices :—

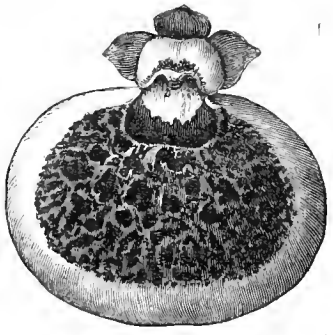
3 feet high, 2½ feet in circumference, 30*s.* per doz.
4 feet high, 3 to 4 feet do., 42*s.* to 60*s.* per doz.
5 feet high, 4, 5 and 6 ft. do., 10*s.* 6*d.*, 15*s.* to 21*s.* each.
6 and 7 feet high, 6 to 7 and 8 ft. do., 21*s.* to 31*s.* 6*d.* each.

No cuttings have been taken from the plants here referred to, which are simply perfect in growth and splendidly rooted.

KNAP HILL NURSERY, WOKING, SURREY.

DANIELS BROS.'
CHOICE SEEDS OF
FLORISTS' FLOWERS.

We have much pleasure in offering the following Choice Strains of Florists' Flower Seeds, which will be found of a very superior class :—



	Per packet—*s.*	*d.*
AURICULA, choicest mixed Alpine	1	0
CALCEOLARIA HYBRIDA, our own splendid strain,		
1*s.* 6*d.* and	2	6
CARNATION, from stage flowers	2	6
,, Perpetual or Tree, choicest	2	6
CINERARIA HYBRIDA, very choice 1*s.* and	2	6
COLEUS, from the newest varieties	1	6
GLOXINIA, very choice mixed	1	6
PANSY, English, very choice	1	0
,, Fancy	1	0
,, King of the Blues	1	0
PENTSTEMON, from named flowers	1	0
PHLOX, choicest Perennial	1	0
PICOTEE, from stage flowers	2	6
POLYANTHUS, Gold-laced, very fine	1	0
PRIMULA SINENSIS, choicest fringed red	1	6
,, ,, ,, white	1	6
,, ,, ,, mixed	2	6
SWEET WILLIAM, Auricula-eyed, splendid, mixed	1	0

Mr. D. T. FISH, *writing of our strains of Calceolaria and Cineraria says :—*

"A word concerning your Calceolarias. Having seen some of the finest strains at the different shows, I have pleasure in stating that yours are equal to the best in size, colour, and variety of flowers, and their habit most compact; in fact, more uniformly dwarf than any I have seen. Your Cinerarias this season were also a most excellent strain—size, substance, and colour of flowers being all that could be desired, with a very dwarf habit."

From Mr. J. HANNIBALL, *Kingswood, Bristol.*

"We have a splendid show of Pansies and Sweet Williams, and they are the admiration of all who see them. Your Polyanthus also was first-class."

A fine assortment of choice Bedding Plants, &c., now on offer. Catalogues free on application.

DANIELS BROS.,
Seed Growers and Nurserymen,
ROYAL NORFOLK SEED ESTABLISHMENT,
NORWICH.

FRANCIS & ARTHUR
DICKSON & SONS.
106 Eastgate St. &
The "Upton" Nurseries CHESTER.
Farm Seeds Extra Select
& of Unsurpassed Quality
Carriage Paid.
Illustrated Catalogue, Free.

ROYAL BOTANIC SOCIETY,

REGENT'S PARK.

FIRST SUMMER EXHIBITION, MAY 24, 1876.

AWARDS OF THE JUDGES.

MEDIUM GOLD MEDAL.

Messrs. Jackson & Son, Kingston, for 12 Stove and Greenhouse Plants.
Mr. Ward, Gr. to F. Wilkin, Esq., Leyton, for 10 Stove and Greenhouse Plants.

GOLD MEDAL.

Mr. Ward, Gr. to F. Wilkins, Esq., for 9 Pelargoniums.
Mr. B. S. Williams, for 12 Stove and Greenhouse Plants.
Mr. Chapman, Gr. to R. Spode, Esq., for 10 Stove and Greenhouse Plants.
Mr. Charles Turner, for 9 Roses in pots.

LARGE SILVER-GILT MEDAL.

Mr. Chapman, Gr. to R. Spode, Esq., for 6 Stove and Greenhouse Plants.
Mr. Ward, Leyton, for 6 Exotic Orchids.
Mr. B. S. Williams, for 6 Exotic Orchids.
Messrs. Paul & Son, Cheshunt, for 6 Roses in pots.
Messrs. Paul & Son, for 9 Roses in pots.
Mr. Charles Turner, Slough, for 20 Roses in pots.
Mr. G. Wheeler, for 6 Azaleas.
Messrs. Jackson & Son, for 6 Azaleas.
Mr. Charles Turner, for 12 Azaleas in 12-inch pots.
Mr. Ward, for 12 Heaths, in 12-inch pots.
Mr. James, Gr. to W. Watson, Esq., for 9 Pelargoniums.
Mr. B. S. Williams, for Group of Agaves and Yuccas.

SILVER-GILT MEDAL.

Messrs. Jackson & Son, for 6 Stove and Greenhouse Plants.
Messrs. Jackson & Son, for 12 Heaths in 12-inch pots.
Messrs. Jackson & Son, for 6 Ericaceous Plants.
Mr. G. Ward, Leyton, for 6 Ericaceous Plants.
Mr. G. Legg, Cleveland House, Clapham, for 6 Fine-foliage Plants.
Mr. B. S. Williams, for 6 Fine-foliage Plants.

SMALL SILVER-GILT MEDAL.

Mr. G. Toms, Gr. to H. Wetenhall, Esq., for 10 Stove and Greenhouse Plants.
Mr. Ward, for 6 Stove and Greenhouse Plants.
Mr. W. Dunning, Coombe Lane, Kingston, for 6 Exotic Orchids.
Messrs. Jackson & Sons, for 6 Exotic Orchids.
Messrs. Paul & Sons, Cheshunt, for 20 Roses in pots.
Messrs. Lane & Son, for 6 Azaleas.
Messrs. Jackson & Son, for 12 Azaleas in 12-inch pots.
Mr. Ratty, Gr. to R. Thornton, Esq., for 6 Azaleas in 12-inch pots.
Mr. George Legg, for 12 Heaths in 12-inch pots.
Mr. Charles Turner, for 9 Pelargoniums.

LARGE SILVER MEDAL.

Mr. B. S. Williams, for 6 Stove and Greenhouse Plants.
Mr. G. Wheeler, for 6 Ericaceous Plants.
Mr. F. Hill, Gr. to H. Taylor, Esq., Avenue Road, for 6 Fine-foliage Plants.
Mr. J. H. Ley, Croydon, for 6 Fine-foliage Plants.
Mr. James Weir, Gr. to Mrs. Hodgson, for 6 Pelargoniums.
Mr. W. Roberts, Gr. to W. Terry, Esq., Fulham, for 6 Old-fashioned Hardy Plants.
Messrs. Veitch & Son, for Group of New and Rare Plants.
Mr. R. Ritchie, Gr. to H. Ritchie, Esq., Hampstead, for 6 Exotic Ferns.
Mr. B. S. Williams, for 6 Exotic Ferns.

SILVER MEDAL.

Mr. G. Wheeler, Gr. to Sir F. Goldsmid, for 10 Stove and Greenhouse Plants.
Mr. G. Legg, Gr., Cleveland House, Clapham Park, for 6 Stove and Greenhouse Plants.
Mr. J. Loveland, Gr. to J. Hepburn, Esq., Sidcup, Kent, for 6 Exotic Orchids.
Messrs. Cutbush & Sons, for 6 Azaleas.
Mr. Ratty, for 12 Azaleas in 12-inch pots.
Mr. G. Wheeler, for 6 Azaleas in 12-inch pots.
Mr. G. Wheeler, for 12 Heaths in 12-inch pots.
Mr. Strahan, Waddon House, Croydon, for 6 Fine-foliage Plants.
Messrs. Cutbush & Son, for 6 Fine-foliage Plants.
Mr. T. H. Ley, Croydon, for Group of New and Rare Plants.
Mr. G. Wheeler, for Group of Flowering and Foliage Plants.
Mr. J. Lane, for Group of Flowering and Foliage Plants.
Messrs. W. Paul & Son, Waltham Cross, for Collection of Roses.
Mr. G. Wheeler, for 6 Exotic Ferns.

SMALL SILVER MEDAL.

Mr. G. Toms, for 6 Stove and Greenhouse Plants.
Mr. Moorman, Gr. to Misses Christy, Kingston, for 6 Stove and Greenhouse Plants.
Messrs. Ivery & Son, for 12 Azaleas in 12-inch pots.

LARGE BRONZE.

Mr. H. Heims, Gr. to H. Philbrick, Esq., for 6 Exotic Orchids.
Messrs. Lane & Son, for 12 Azaleas, in 12-inch pots.
Mr. R. Ritchie, Gr. to R. H. Prince, Esq., Hampstead, for 6 Fine-foliage Plants.
Messrs. Ivery & Son, Dorking, for Collection of Hardy Ferns.
Messrs. Wm. Cutbush & Son, for Collection of Azaleas in 8-inch pots.
Messrs. Paul & Son, Cheshunt, for Collection of Cut Roses.

SMALL BRONZE MEDAL.

Mr. F. Hill, Gr. to H. Taylor, Esq., for a Specimen Anthurium Scherzerianum.
Mr. H. Hooper, Bath, for Cut Blooms of Pansies and Tulips.
Mr. W. Robins, Gr. to E. Dyke Lee, Esq., Aylesbury, for 3 bunches of Black Hamburgh Grapes.
Mr. J. Loveland, Sidcup, Kent, for Collection of Orchids.
Messrs. Lane & Son, for Collection of Cut Roses.

BOTANICAL CERTIFICATES of MERIT

Messrs. Veitch & Son, for Aralia Veitchii gracillima.
Messrs. Veitch & Son, for Croton Macafeeanus.
Messrs. Veitch & Son, for Croton Mooreanus.
Messrs. Veitch & Son, for Eulalia japonica.
Messrs. Veitch & Son, for Phyllanthus roseum pictum.
Messrs. Veitch & Son, for Rhododendron Queen Victoria.
Messrs. Veitch & Son, for Rhododendron Duke of Edinburgh.
Messrs. Veitch & Son, for Ballea Lalindei.
Messrs. Veitch & Son, for Cypripedium selligerum.
Messrs. Veitch & Son, for Osmunda palustris.
Mr. J. H. Ley, for Aralia gracillima.
Mr. B. S. Williams, for Aralia Veitchii gracillima.
Mr. B. S. Williams, for Photinia serrulata variegata.
Mr. B. S. Williams, for Araucaria Goldieana.
Mr. B. S. Williams, for Cycas intermedia.

E. G. HENDERSON & SON
RESPECTFULLY ANNOUNCE THE PUBLICATION OF THEIR
NEW DESCRIPTIVE SPRING CATALOGUE,
WHICH WILL BE FORWARDED ON APPLICATION.

It includes the following NEW PLANTS, offered by them the first time in trade, amongst which is a pure white-flowered AGERATUM :—

CALCEOLARIA SALICIFOLIA.
CHRYSANTHEMUM, CANARY-COLOURED CHERUB.
CARDUUS, sp. (Grande Fleur Rouge).
CUPHEA MILLFIELDIANA.
DRACÆNA, PRINCESS OF WALES.
,, PRINCESS TECK.
,, CERES.
FUCHSIAS, eight new (including Mr. Todman's).
MIMULUS, eight new.
SONERILA HENDERSONI METALLICA.
NERIUM OLEANDER PICTUM ARGENTEUM
,, ,, LUTEUM MARGINATUM.
IVY-LEAVED PELARGONIUMS, three new.
THYMUS MARGINATA ELEGANTISSIMA.
TROPÆOLUM BROOKEANUM.
VERBENAS, eight new.
PELARGONIUM STRIATA ELEGANS.
,, ,, MAGNUM BONUM (Zonal sec.).
AGERATUM SNOWFAKE.
,, TOM THUMB SNOWFLAKE.
ROMNEYA COULTERI.

The following plants are new to the great majority of English gardens :—

PRENANTHES ELEGANTISSIMA.
WHITE BEDDING DAHLIA, MARGUERITE BRUANT.
OTHONNA CRASSIFOLIA,
AND
SALVIA SPLENDENS ARGENTEA.

THE WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON, N.W

BY HER MAJESTY'S ROYAL LETTERS PATENT.

RENDLE'S PATENT SYSTEM OF GLAZING

RAILWAY STATIONS, WINTER GARDENS, EXHIBITION BUILDINGS,

SKATING RINKS, RAILWAY SHEDS, MARKETS, PUBLIC BUILDINGS, WORKSHOPS, SKY-LIGHTS, &c.,

Also Conservatories, Plant Houses, Orchard Houses, &c.

The new system of Glazing will speedily be introduced for the above; and Architects, Surveyors, Builders, and Contractors are especially recommended to adopt it.

On some Railways the expense of Repairing and Renovating of Glass Roofs is very large; and an enormous saving will be effected when the new system of Glazing is introduced.

The Patentee has already received instructions from the Great Western Railway Company and the South Devon Railway Company to cover several of their Stations on the system.

Architects, Surveyors, Builders, and Contractors, are requested to see the great Circular Roofs of the Royal Aquarium and Winter Garden in Westminster, and the new Ridge-and-Furrow Roofs at Paddington Station, near the departure platform.

On the old putty system the intense heat of the sun in the summer months cracks the putty, then the heavy autumnal and winter rains get in the crevices, the putty perishes, and in a short time the bars are rotten and decayed. On the new system there are no sash-bars, no putty nor paint to destroy. All perishable materials are completely covered by the Glass from the damaging influences of the weather, and the system may therefore fairly be called Indestructible.

EXPERIMENT AT THE ROYAL ARSENAL, WOOLWICH, TUESDAY, MAY 2, 1876.

TESTING GLAZED ROOFS.—From "THE ARCHITECT," May 6, 1876.

"Mr. Edgcumbe Rendle's Patent System of Glazing, which we have lately described, and the use of which is now extending in the construction of the roofs of Railway Stations, was tested on Tuesday last, the 2d instant, by Her Majesty's War Department, and under the direction of Lieut.-Col. Scratchley, R.E., Inspector of Works. The following severe test was applied:—A skylight, 12 feet square, constructed on Mr. Rendle's system, was inserted in the roof of a Railway Carriage Shed at the Royal Arsenal, at Woolwich, no intermediate supports being employed. A heavy volume of water was poured on it unceasingly from a hose attached to the fire main, and it withstood the pressure of the flood of water admirably, no leakage whatever being observable."

PUBLIC AND PRIVATE SKATING RINKS.

Estimates will be forwarded on application for the formation of Public and Private Skating Rinks.

ILLUSTRATED CATALOGUES and BOOKS of DESIGN can be obtained from

WILLIAM EDGCUMBE RENDLE,

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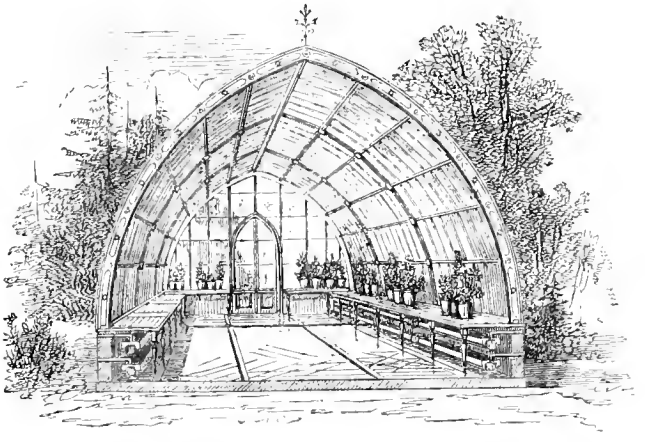
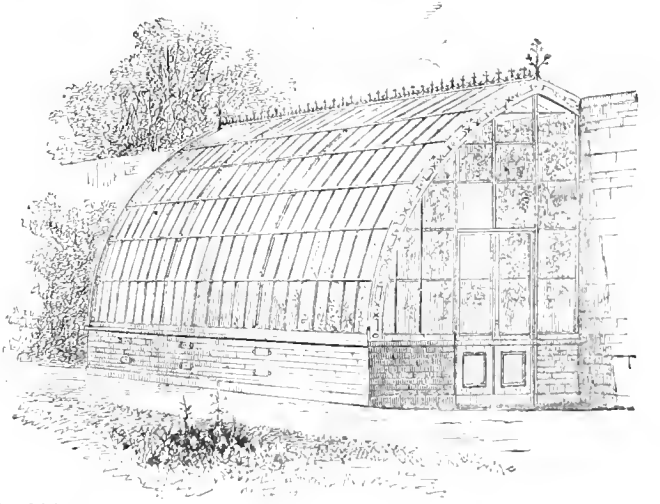
LONDON, 1873.

GOLD MEDAL, 1872.

VIENNA, 1873.





NO BENT GLASS USED.

FLETCHER, LOWNDES & CO.,

13A, GREAT GEORGE STREET, WESTMINSTER, S.W.,

PATENTEES AND MANUFACTURERS OF WOOD AND IRON CONSERVATORIES, VINERIES, &c.,

Messrs. F., L. & Co. beg to draw particular attention to their CURVILINEAR PRIZE HOUSES, constructed on their PATENT TUBULAR SYSTEM, unrivalled for utility, strength, lightness, and elegance. No bent glass used. Also of the

VAPORISING AND VENTILATING HEATING APPARATUS,

By which perfect purity of atmosphere is secured, and a great saving of fuel effected. Full particulars on application.

Roses in Pots by the Dozen, Hundred, or Thousand

WM. WOOD AND SON solicit attention to their enormous and splendidly grown stock of the above. Inspection invited.
Woodlands Nursery, Maresfield, Uckfield, Sussex.

Special Offer.—Vesuvius, Crystal Palace Gem.

WILLIAM BADMAN offers good plants of VESUVIUS from single pots, 10s. per 100, 85s. per 1000. CRYSTAL PALACE GEM, 15s. per 100. MADAME VAUCHER, finest White Pelargonium, 10s. per 100. Package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

Choice Tricolor and Bronze Geraniums.

THOMAS PESTRIDGE can now supply, in good plants, at per dozen for cash—Mr. Headly, 6s; Peter Grieve, 4s.; Sophia Cusack, 3s; Salamander, 6s; Mysterious Night, 3s; Lass o' Gowrie, 6s.; Mrs Colonel Wilkinson, 4s; Miss Pond, 10s; Marshal MacMahon, 4s; Black Douglas, 3s.; Earl of Rosslyn, 4s; Prince Arthur, 6s. Package free. Priced List of other varieties.
THOMAS PESTRIDGE, Park Road Nursery, Brentford.

Cranston's Nurseries (Established 1785).

TEA-SCENTED ROSES—20,000 strong, well hardened plants, in 5½-inch pots
April and May are the best months for Bedding or Planting-out the Tea-scented, China, Noisette, and all Roses on their own roots. Selections, left to us, from 12s. to 15s. per dozen.
Descriptive Priced LISTS on application to
CRANSTON AND MAYOS, Hereford.

DAVID LLOYD AND CO. (LIMITED).
CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.
Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following:—
J. T. RUBERY, 88, Rumford Place, Liverpool.
SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
R. AND J. TAYLOR, 17, Vachel Road, Reading.
AGENTS WANTED.

Cheap Plants.—Cheap Plants.

WILLIAM BADMAN offers the following cheap plants for present potting:—
VERBENAS, Purple, White, Scarlet, Rose, Crimson, &c., rooted cuttings, 6s. per 100, 50s. per 1000; good plants from single pots, 1s. 6d. per dozen, 10s. per 100; twenty named sorts, 8s. per 100.
CALCEOLARIA, Golden Gem and Kayii Improved, 5s. per 100, 40s. per 1000; or strong established plants, 1s. 6d. per dozen, 10s per 100.
LOBELIA SPECIOSA (true), from cuttings, 3s. per 100, 20s. per 1000; good plants, from single pots, 1s. 6d. per dozen, 10s. per 100.
HELIOTROPIUM, finest dark, 6s. per 100; or large plants, 1s. 6d per dozen, 10s. per 100.
PELARGONIUMS, Vesuvius and Jean Sisley, scarlet; Madame Vaucher, fine white; Mrs. W. Paul and Blue Bell, pink; Waltham Seedling, fine bedding crimson; all good plants, from single pots, 1s. 6d. per dozen, 10s. per 100; Master Christine, finest pink, 2s. per dozen, 15s. per 100.
„ Gold-leaf: Crystal Palace Gem, good plants, 2s. per dozen, 15s. per 100.
„ Silver-leaf: Flower of Spring, Bijou, Prince Silverwings (fine), 2s. per dozen, 15s. per 100.
„ Tricolor: Mrs. Pollock, 2s 6d. per dozen, 18s. per 100.
ALTERNANTHERA, magnifica and paronychioides, 6s. per 100, 50s. per 1000; amœna spectabile (finest), 8s. per 100, 1s. 6d per dozen.
AGERATUM, Imperial Dwarf, blue, makes a fine bed, 1s. per 100; from single pots, 1s. 6d. per dozen, 10s. per 100.
IRESINE, Lindeni, crimson leaf, fine thing, 6s. per 100, 1s. per dozen.
COLEUS, Verschaffeltii, from store pots, 6s. per 100; or larger, 1s. 6d. per dozen, 10s. per 100.
STELLARIA AUREA, new golden edging plant, 4s. per 100, 1s. per dozen.
CENTAUREA CANDIDISSIMA, silver-leaf, 3s per dozen, 20s. per 100.
Package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

Pelargoniums, Fuchsias, Bedding and other Plants.
All established in single pots.

WOOD AND INGRAM beg to offer:—
PELARGONIUMS. Show, Spotted, and Fancy, fine flowering plants in 5-inch pots, good named sorts, 50s. per 100; 8s per dozen.
CALCEOLARIA, Herbaceous (finest exhibition strain), extra fine plants in 5-inch pots, 9s. per dozen, 1s. each.
FUCHSIAS, in great variety, to name, in 5-inch pots, splendid plants, 40s. per 100; 5s. per dozen.
PELARGONIUMS, Golden Tricolor, J. D. Bassett, Macbeth, Miss Batters, 6s. per dozen; Peter Grieve, 9s. per dozen; Louisa Smith, Mrs. Dix, Pre-eminent, 4s. per dozen; Queen Victoria, Sir R. Napier, Countess of Craven, Sunset, 4s. per dozen; Sophia Dumaresque, 3s. 6d. per dozen.
„ Silver Tricolor, Prince Silverwings, 3s. per dozen.
„ Bronze and Gold, The Dragon, 3s. per dozen; Perilla, 3s. per dozen; Prima Donna, 4s. per dozen.
„ Crystal Palace Gem, 18s. per 100; Vesuvius, 18s. per 100; Master Christine, 20s. per 100.
COBŒA SCANDENS, 4 feet, 1s. each.
DAHLIAS, Show, Fancy, and Bedding, 4s. per dozen.
AGERATUM, Imperial Dwarf, 2s. per dozen, 14s. per 100.
ALTERNANTHERA, sorts, 2s. per dozen, 14s. per 100.
CINERARIA MARITIMA, 2s. per dozen, 14s. per 100.
„ „ CANDIDISSIMA, 2s. per dozen, 14s. per 100.
GNAPHALIUM LANATUM, 2s. per dozen, 14s. per 100.
IRESINE HERBSTII, 2s. per dozen, 14s. per 100.
LOBELIAS, best varieties, 2s. per dozen, 14s per 100.
MESEMBRYANTHEMUM CORDIFOLIUM, 2s. per doz., 14s. per 100.
CALCEOLARIA AUREA FLORIBUNDA, and other varieties, 2s. 6d. per dozen, 18s. per 100.
HELIOTROPES, of sorts, 2s. 6d. per dozen, 18s. per 100.
PETUNIAS, of sorts, 2s 6d. per dozen, 18s. per 100.
SALVIAS, of sorts, 2s. 6d. per dozen, 18s. per 100.
COLEUS VERSCHAFFELTII, 2s. 6d. per doz., 18s. per 100
LILIUM AURATUM, 1s. 6d. to 5s. each.
ADIANTUM CAPILLUS-VENERIS, 8s. per dozen.
ASPLENIUM MARINUM, 9s. per dozen.
The Nurseries, Huntingdon.

New Double Zonal Pelargoniums

For 1876.

W. & J. BROWN

Will let out this month the following new and distinct varieties, raised by Mr. LAXTON (the raiser of Jewel, Emily Laxton, Guiding Star, and others), all of which are striking novelties, having the dwarf habit of the single Zonals:—

THE GHOST.—Flower pure ivory-white, finely formed, petals waxy and of great substance—a decided acquisition in double whites, and especially adapted for bouquets, 10s 6d.

SOPHIA CLAPTON.—The plant has the remarkably dwarf and shrubby habit and pale green foliage of "Guiding Star." Flower very full, pretty Hepatica shaped, bright purplish scarlet, 10s. 6d.

WILFRID.—A beautiful pearl-white flower, fuller and more perfect in form than "Aline Sisley," very pretty and remarkably distinct—decidedly the best of its class yet sent out, 15s.

First-class Certificate Royal Horticultural Society.

The set for £1 12s. 6d. Trade terms as usual.

W. AND J. BROWN, Florists, Stamford.

NEW AND CHOICE PLANTS

FOR 1876.

Carter's

CATALOGUE

OF THE ABOVE IS NOW READY,

And will be sent, gratis and post-free, to Purchasers.

THE QUEEN'S SEEDSMEN,
237 and 238, HIGH HOLBORN, LONDON, W.C.

HOLLIES.

Twenty Thousand of the Finest Varieties of GREEN AND VARIEGATED HOLLIES, 4, 5, 6, 7, 8, and 10 feet.

The Plants are all handsomely Grown and properly Rooted.

ANTHONY WATERER,
KNAP HILL NURSERY, WOKING, SURREY.

BEDDING PLANTS, &c.

LITTLE & BALLANTYNE,

THE QUEEN'S SEEDSMEN,
CARLISLE,
SOLICIT EARLY ORDERS FOR
DAHLIAS, HOLLYHOCKS, LOBELIAS, VERBENAS, FUCHSIAS, PELARGONIUMS, PANSIES, AND
An extensive Assortment of Plants suitable for Beds and Borders,
INCLUDING THE
Best Varieties of Dwarf Variegated Plants and Succulents for Edgings, &c.

KNOWEFIELD NURSERIES, CARLISLE.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of
WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

CHEAP PLANTS, post-free.—Twelve new Fuchsias of 1875 for 4s., 12 choice older sorts, 2s.; 12 choice Coleus, 2s.; Dr. Denny's second set of 7 beautiful Zonal Geraniums, 2s. 6d.; 12 choice Geraniums for pot culture, 3s.; 12 Ageratum Countess of Stair, 2s.; 12 Imperial Dwarf, 1s.; or the whole of the above post-free for 15s., carefully packed.
JOSEPH LEIGH, Sandy Lane Nursery, Lowton, near Newton-le-Willows, Lancashire.

CUTTINGS of GERANIUMS, &c.—One Hundred GERANIUMS, in 40 choice varieties, including Tricolor, Gold and Bronze, Variegated, Zonal, Nosegay, and Ivy-leaf, for 10s.; 50, 5s. 6d.; 25, 3s.
24 Fancy PELARGONIUMS, 3s. 6d.; 12, 2s.
24 CHRYSANTHEMUMS, 2s. 6d.; 12, 1s. 6d.
24 POMPONS, 2s 6d.; 12, 1s. 6d. 24 FUCHSIAS, 2s. 6d.; 12, 1s. 6d. All post-free. Catalogues one stamp.
J. COOMBS, The Ferns, Enfield.

Carriage and Package Free
to any Railway Station in Great Britain.

TWELVE BEST NEW FRENCH ROSES for 1876 on receipt of Post-office Order for 27s. 6d.

TWELVE BEST TEA and NOISETTE ROSES on receipt of Post-office Order for 21s.; 24 for 40s.

The Plants are all exceedingly healthy and vigorous.
EWING AND COMPANY, Eaton, Norwich.

NEW and SELECT LANTANAS.—This free-blooming class of Plants are very useful for Bedding (equal to Verbenas), and they also make desirable pot plants, blooming all through the season. Twelve select and very superb varieties, 2s. 6d., post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW COLEUS of 1875.—Twelve superb varieties New Coleus, selected from the best varieties of 1875, very effective and distinct; the twelve varieties in good plants, 3s., post-free; also twelve very select older varieties, 2s. post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW and SELECT PELARGONIUMS.—Now ready to be sent out in good plants, large-flowered Show, Fancy, and French spotted Pelargoniums twelve best selected varieties, post-free, 6s.
NEW AGERATUM, DUCHESS of EDINBURGH, the best Dwarf Blue yet produced, 3s. per dozen, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex,

NEW and SELECT HELIOTROPIUMS.—This highly fragrant and free-blooming class of Plants has been much improved. The new compact growers are very effective for Bedding and Pot Culture. Twelve select and very superb varieties, 2s. 6d., post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW FUCHSIAS of 1875, now ready to send out, carefully selected from the best kinds sent out in 1875, in good plants. Twelve select New Fuchsias, 4s.; 12 best selected varieties of 1874, for 3s.; 12 very fine older varieties, 2s.; all sent post free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW DOUBLE WHITE GERANIUM, "GEORGE SAND," the largest and best Double White; 12 superb varieties Double Geraniums, including "George Sand" and other new colours, in good plants, post-free for 6s.
NEW AGERATUM, DUCHESS of EDINBURGH, the best Dwarf Blue yet produced, 3s. per dozen, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

NEW VICTORIA DAISIES.—This new strain of Double Daisies produces flowers 6 inches in circumference, on long foot-stalks 8 inches high, looking more like large Ranuncuh than Daisies. They are decided acquisitions to our early spring-blooming plants. B. W. K. is now enabled to offer the following six varieties, post-free, for 2s., viz.:—Albert Edward, Albert Victor, Masterpiece, Nil Desperandum, Renown, Queen Victoria; 12 newer varieties of 1873, in 12 fine varieties, for 6s., post-free; also a fine mixture of colours, unnamed, at 1s. 4d. per dozen, or 8s. per 100, post-free, from
B. W. KNIGHT, Florist, Battle, Sussex.

BEDDING PLANTS, BEDDING PLANTS, &c., FLORIST'S FLOWERS and ROSES in pots for late planting:—
BEDDING GERANIUMS, Zonal and Nosegay, 16s. and 20s. per 100.
CALCEOLARIAS, LOBELIAS, AGERATUMS, 16s. per 100.
BRONZE GERANIUMS, 24s. and 28s. per 100.
ANTENNARIA TOMENTOSA, white carpet bedder, 1 inch high, 10s. per 100.
SEDUMS, SAXIFRAGES, SEMPERVIVUMS, for carpet bedding, the best, 10s to 16s. per 100
DACTYLLIS GLOMERATA, fol. var., 4s. 6d. per 100.
KLEINIA REPENS (the best blue foliage, 4 in. high), 3s. per dozen.
ECHEVERIA GLAUCA, 2s. per dozen.
SANTOLINA INCANA, fine silvery-grey foliage, 3s. per dozen.
VIOLAS, in bloom and showing, yellow, white, or purple, 1s. 6d. and 2s. per dozen.
BEDDING PANSIES, 1s. 6d. and 2s per dozen.
PENTSTEMONS, PHLOXES, PANSIES, ANTIRRHINUMS, in pots, or turned out, 3s. per dozen, all first-class named sorts.
COLEUS, FUCHSIAS, SALVIAS, CHRYSANTHEMUMS, 3s. per dozen.
GERANIUMS, for pot culture, fine new sorts, 4s. per dozen.
CLEMATIS, 15s. per dozen.
ROSES, in pots, fine plants on Manetti, 12s. per dozen; on own roots, 15s. per dozen.
CATALOGUES on application.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

WILLS' NEW HYBRID DRACÆNAS.

RAISED BY W. F. BAUSE.

The following splendid Novelties will be ready for sending out on and after June 1. For descriptions see various articles in the *Gardeners' Chronicle, Journal of Horticulture, The Garden, Gardeners' Magazine, &c.*

D. BARRONI (terminalis ♀, regina ♂).

A very striking variety, with the bold spreading habit of D. Youngii. The leaves are oblong, 5½ inches broad, spreading or half-drooping, of a dark bronzy green, with a broad and irregular edging of mottled magenta on the younger leaves, the edges of the older leaves being of a deep magenta colour. The edges of the leaf-stalks are of a rosy pink. The young leaves come first of a creamy blush, with a rosy tint on the under-surface, and in some cases they take on this roseate hue on the upper side. It is a fine and noble-habited variety, of great beauty.

Price 2 Guineas.

D. TELLINGII (ferrea ♀, regina ♂).

A bold-habited sort, almost emulating the aspect of a Musa. The leaves are oblong, 6 inches broad, drooping or recurved, of a bronzy green, with an edging of bright rosy pink, which in the older leaves deepens into crimson, the leaf-stalks being also nicely coloured at the edge. It has the boldest and broadest leaves in the whole series, and they are, moreover, remarkably stout in texture.

Price 2 Guineas.

D. IMPERATOR (nigrescens ♀, regina ♂).

A remarkably bold and distinct-looking plant, of free growth and erect habit; the leaves are broadly oblong-ovate, 5 inches across, erectly spreading, of a dark or bottle-green, with dark purple edge and costa, the younger leaves breaking out into a conspicuous broad marginal variegation of pink and creamy white, more or less flushed and mottled with a pale tint of magenta. The back of the leaves seem to be strongly coloured with purple. It is a well marked variety, bearing evidence of its female parentage in the dark purple midrib and margins of the older leaves.

Price 2 Guineas.

DRACÆNA RECURVA.

This is one of the fine varieties, having broad oblong leaves, and, in this instance, they are strongly recurved, though less so than in D. voluta, giving the plant a remarkably close and compact appearance. The leaves are of a deep green colour, variegated with broad sectional streaks of magenta-pink, and margined, as also is the stalk, with a narrow band of the same colour. Its compact growth amongst the large-leaved varieties gives it a very distinct character.

Price 2 Guineas.

DRACÆNA NITZSCHNERII.

This is a fine bold-habited variety, with broad oblong, dark green recurved leaves, the younger central ones freely but irregularly marked with creamy variegation, suffused with rosy pink, especially near their base, the older leaves narrowly margined with deep rosy red, which is continued down the margin of the leaf-stalks. It is a fine novelty, grouping with those having a rather light coloured variegation.

Price 2 Guineas.

DRACÆNA REGALIS.

A bold-habited free-growing vigorous variety, having densely-set oblong recurved leaves, of a deep bronzy green, margined unequally with rosy red, and having the leaf-talks also similarly edged; the younger central growths are broadly edged with cream colour flushed with pale rose. It forms a fine massive and truly regal plant, and from its free growth and its ample foliage is very effective.

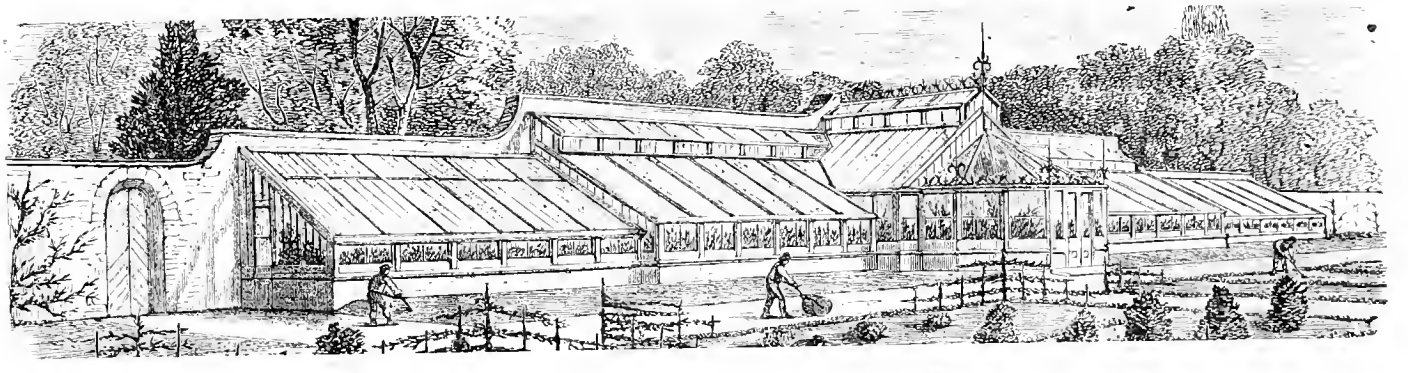
Price 2 Guineas.

Three Medals were awarded to the above Novelties, including the Grand State Medal, at the Brussels International Exhibition, on April 30, 1876.

ROYAL EXOTIC NURSERY & WINTER GARDEN,

ONSLOW CRESCENT, SOUTH KENSINGTON, LONDON, S.W.—May 24, 1876.

HORTICULTURAL BUILDINGS.—SEASON 1876.



IMPORTANT NOTICE.

WEEKS'S IMPROVED FOUNDATIONS.

The GREAT SUCCESS that has attended our introduction of CAST IRON and SLATE FOUNDATIONS to Peach Wall Coverings has induced us to extend their application, in an improved form, to every description of Horticultural Building. The following are among the many advantages which this invention offers:—Great economy in cost and labour; great utilisation of space; great adaptability, with strength and durability equal to Brickwork and Masonry; while houses so constructed are at once *Tenant's Fixtures.*

PLANS AND ESTIMATES.

J. WEEKS & CO.,

HORTICULTURAL BUILDERS, HOT-WATER APPARATUS MANUFACTURERS and PATENTEES,

KING'S ROAD, CHELSEA, LONDON, S.W.

Cinerarias.

MESSRS. JOHN STANDISH AND CO.'S strain of Cinerarias is now acknowledged to be the finest in the Kingdom. Carefully saved Seed may now be had post-free at 2s. 6d., 3s. 6d. and 5s. per packet. Wholesale price to the Trade on application.
Royal Nurseries, Ascot, Berks.

Bedding Plants.

F. AND A. SMITH offer the above in strong, hardened Plants, for immediate effect, in all the best varieties. Priced LIST upon application.
The Nurseries, West Dulwich, S.E.
N.B.—Their General Plant CATALOGUE is Now Ready.

To the Trade.

TEA-SCENTED ROSES, in Pots.—Magnificent Plants, of best varieties only, at 9s. per dozen, or 60s. per 100. An immense Stock of all other plants worth growing. Catalogue free.
WILLIAM KNIGHT, Floral Nursery, Hailsham, Sussex.

H. WALTON begs to thank his numerous Friends, who have favoured him with orders for Show and Fancy PELARGONIUMS from previous Advertisements, and, as he has still a few hundreds left, he will include several fine fringed varieties, 25 plants for 21s., 55 plants, 42s., package included.
TUBEROUS-ROOTED BEGONIAS.—H. W. offers strong established plants of the following varieties:—Boliviensis, Chelsoni, Hermine, Lady Adair, Mrs. Masters, Professor T. Dyer, Rubra superba, Vesuvius—the eight varieties 22s. 6d., package included. Catalogues free on application.
Edgend, Brierfield, near Burnley, Lancashire.

NEW H.P. ROSE, TRIOMPHE DE FRANCE, strong plants, with from twelve to twenty joints, 2s. 6d. each.
Raiser's description:—"Beautiful bright carmine, of extra large size, very full, opening well, perfect form; a good and free bloomer, growth rather vigorous; a most distinct and grand Rose. This splendid variety has been exhibited as a seedling, received its name from the judges, who prized it by a gold medal of £3."
TEA ROSES.—MARIE GUILLOT, the best Exhibition White and the finest Tea Rose known, 2s. each.
PERLE DES JARDINS, the best perpetual blooming Exhibition Yellow, 2s. each.
JEAN DUCHER, most distinct and beautiful, 2s. each.
All by the dozen or 100. Price on application.
H. BENNET, Manor Farm Nursery, Stapleford, Salisbury.

THE
NEW PLANT and BULB COMPANY
BEG TO OFFER, IN FINE HEALTHY PLANTS,

DARLINGTONIA CALIFORNICA—The extremely rare and beautiful Pitcher Plant from California. Plants with five to seven pitchers.

PELLÆA ORNITHOPUS var. BRACHYPTRUM—An extremely rare and very beautiful Fern from California.

CHEILANTHES GRACILLIMA—A very elegant addition to this charming class of Ferns. Also from California.

DENDROBIUM WARDIANUM—The finest of all Dendrobes: fine plants recently imported and breaking freely.

ODONTOGLOSSUM CRISPUM (ALEXANDRÆ)—Fine plants recently imported and breaking freely.

The above are all at extremely low prices.
For particulars see SPECIAL LIST (No. 27), free on application.

LION WALK, COLCHESTER.

PYRETHRUM AUREUM LACINIATUM.

A most distinct and beautifully cut-leaved form of the "Golden Feather." It obtained a First-class Certificate at the Meeting of the Royal Horticultural Society, May 3; also at the Grand Flower Show of the Royal Aquarium, Westminster, May 16.
Perfectly hardy, and in colour perhaps more golden than the old "Golden Feather," and of a dwarfer and more spreading habit.
"It promises to make a good bedding plant."—*Gardeners' Chronicle.*
"A dwarf, cut-leaved form of the well-known Pyrethrum Golden Feather, and one which will be very useful for bedding purposes."—*Garden.*
1s. 6d. and 2s. 6d. each; a few extra sized plants 3s. 6d. and 5s. Special Prices for large quantities.

OSBORN & SONS,
THE NURSERIES, FULHAM, LONDON, S.W.

COCOA-NUT FIBRE REFUSE.—Reduced price, 20 Bushels, 6s. 8d.; 100, 20s.; or Truck Load (upwards of 300 Bushels), 40s. Delivered free to any rail in London.
J. STEVENS, Fibre Works, High Street, Battersea, S.E.

COCOA-NUT FIBRE REFUSE, as supplied to H.R.H. the Prince of Wales, the Emperor of Germany, Messrs. Veitch & Co., and thousands of Nurserymen, Gardeners, &c., is INVALUABLE for Forcing and Plunging, a wonderful incentive to growth of Flowers, Vegetables, &c. 20 bushels, 6s. 8d.; 50 for 12s. 6d.; truck, 45s.; sample bag, 2s. 6d.; 20 bushels and upwards free on to rail or within 5 miles.
ABBOTT AND CO., 80, Bishopsgate Street Without, E.C., Manufacturers of Cocoa-nut Fibre, Mats, and Matting, at Eagle Steam Works, Hatcham Road, Old Kent Road, S.E. Importers of Russia Mats, Raffia Fibre, &c.
Price LISTS on application.

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality, for Orchids, Stove Plants, &c., £6 6s. per truck.
BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, New Holland Plants, 17s. per ton.
Delivered on rail at Blackwater, S. E. R., or Farnborough, S. W. R., by the truck-load. Sample sack, 5s. 6d. each.
Fresh SPHAGNUM, 10s. 6d. per sack.
WALKER AND CO., Farnborough Station, Hants.

BELL'S MILDEW COMPOSITION, as used by them for the last twenty-five years at their "HORTICULTURAL ESTABLISHMENT, BRACONDALE," their "NURSERIES, LAKENHAM," and "VINERIES, THORPE HAMLET," consisting of over 30,000 feet of glass. Retail, 1s. 6d. and 2s. 6d. per bottle, of the Sole Manufacturers,
BELL AND SON, 10 and 11, Exchange Street, Norwich.

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1850, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.
Sold Retail by Seedsmen, in boxes, 1s., 3s., and 10s. 6d. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

BEST AND CHEAPEST INSECTICIDES.

Duty Free, under permission of the Hon. Board of Customs.

THE "LONDON" TOBACCO POWDER.
"HORTICULTURAL" TOBACCO JUICE.
TOBACCO PAPER, CLOTH, and CORD.

Particulars on application,
CORRY & SOPER,
BONDED TOBACCO STORES, SHAD THAMES, LONDON, S.E.

MILDEW: EWING'S INFALLIBLE CURE.—"The finest of all antidotes."—WM. EARLEY. Retail of principal Seedsmen, 1s. 6d. and 3s., or, packed, 1s. 9d. and 3s. 4d. per bottle.—EWING AND CO., Nurseries, Norwich.

FRENCH COLD GRAFTING WAX (Mastic L'homme Lefort).—Widely celebrated as the best and most easily applied substance for Budding, Grafting, &c. Always ready for use. Tins, 6d., 1s., 2s., 4s., and 6s. each. Wholesale and Retail of
HOOPER AND CO., Covent Garden, London, W.C.

Window Glass, Sheet Lead, Paints, &c.

THOMAS MILLINGTON AND CO., IMPORTERS and MANUFACTURERS. New LIST of PRICES, very much reduced, on application.
87, Bishopsgate Street Without, E.C.

DICK RADCLYFFE AND CO. supply every Sundry for the Wholesale Trade: VIRGIN CORK by the cwt. or ton, lowest prices; GARDEN LABELS and STICKS, cheaper than any; BARHAM POT DRAINERS; METAL and IMMORTELLE WREATHS; BOUQUET PAPERS. Wholesale Lists on application.
FLORETENS or WALL POT HOLDERS.—We have the entire right of manufacture of this article, and none are genuine unless made by us. We caution any one against infringing our rights.

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PRICE on application.

129, High Holborn, London, W.C.

EXHIBITION STOVE & GREENHOUSE PLANTS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, June 1,

A COLLECTION of SPECIMEN AZALEAS, YUCCAS, ERICAS, PALMS, FERNS, ANTHURIUMS and other Plants

FROM THE SHOW AT THE ROYAL AQUARIUM, WESTMINSTER.

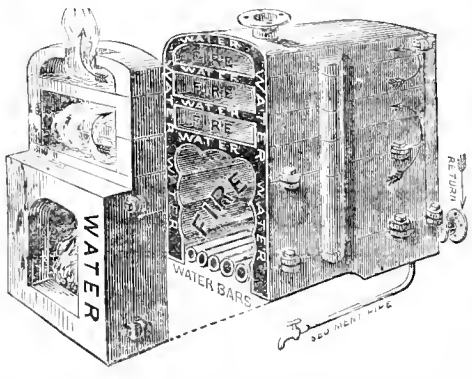
On view the morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

TIME PROVES ALL THINGS.

BY those best informed on the nature and subject of Heating by Hot Water, it has long been predicted that an Apparatus would be forthcoming possessing such merits as to wholly supersede all existing appliances, and to approach as near "**PERFECTION**" as can be imagined or expected.
H. CANNELL AND CO. now append the following invaluable correspondence, extracted from *The Field*, which clearly proves their

"VICTORIA HOT-WATER CIRCULATOR"
TO BE THIS
"DESIDERATUM."



January 16, 1875.
THE CIRCULATOR BOILER.—Seeing a question asked regarding the merits of Cannell's Hot-water Circulator, I cannot say too much for it. It is the simplest and most powerful, with the least amount of fuel, of any boiler I ever tried. The late frost has been ample.—CHAS. PENNY, *The Gardens, Sandringham, January 12.*
——— In answer to "Rus," in last week's *Field*, I beg to state that Cannell's boiler, now called the Victoria Hot-water Circulator, DOES all it PROFESSES, and is one of the most powerful and efficient in the trade. We have had one very heavily weighted with work, heating six houses and a pit for more than a year, and it does its work well. It is economical, being so constructed as to absorb nearly all the caloric from the fuel before the products of combustion are discharged up the chimney. It must prove durable, for no joints nor vulnerable points are exposed to the fire, which expends its force on a series of iron flues or water jackets formed by the boiler. As to the final question—Will it burn up anything?—that will depend very much on the furnace, and the amount of draught provided. Mr. Cannell, the inventor of the boiler, burnt up anything and everything in his furnace at Woolwich, which I visited to master its details and test its efficiency before adopting it. We find there that this boiler and furnace burn up common coal or coke well. The best form of the boiler or circulator is the one that forms its own furnace by a series of water cars; the whole heating power of the fuel is thus utilised and brought to bear upon the water. I have no hesitation in adding that the boiler is simple and strong in construction, efficient in action, and economical in use. Each part of it is also independent and complete in itself, so that if the plate forming the crown of the furnace should burn out it can be replaced without injury to the other parts. Should a fuller answer be required by "Rus," or other readers, I should be pleased to give a detailed description of this "Circulator," with illustrations. To those who do not know me, it may be needful to add that I have no interest in the Victoria further than I take in any useful invention likely to save fuel and thus cheapen production, and tend to advance the science and practice of horticulture."—D. T. FISH, *Hardwicke.*

January 23, 1875.
THE CIRCULATOR BOILER.—"In answer to your correspondent, 'Rus,' I beg to state that I have a 'No. 2 Circulator Boiler,' attached to 2,500 feet of 4-inch piping, doing its work efficiently; and, as a proof, allow me to remark that, between Monday, the 28th, and Tuesday, the 29th, of December last, my black-bulb thermometer registered 0° (or zero), while the temperature of the stove at 8 A.M. on the 29th was 42°, difference 74°. It is only fair to mention that there were five houses besides kept at a temperature of 35° by the same boiler. I use good Scotch coal, but am convinced there is no boiler so economical as the Circulator; it will burn anything, but everybody knows that the better the fuel the more heat and the less work. Regarding durability it would be premature on my part to give an opinion further than this, that should one of the sections of the Circulator give way it can easily be replaced in a few hours without interfering with the piping—a most important matter."—PETER LONEY, Overseer, *Marchmont, Purse, N.B.*

NEW PROSPECTUS SENT POST FREE.

Works: 48 and 49, King Street, Woolwich, S.E.; and at Berwick-on-Tweed.

BOULTON & PAUL, Horticultural Builders, NORWICH,

MANUFACTURERS OF PRIZE GARDEN IMPLEMENTS, PRIZE GARDEN FURNITURE, &c.

DESCRIPTIVE LISTS Free by Post. *Orders amounting to 40s. Carriage Paid.*

36-GALLON SWING WATER BARROW.

The above is invaluable for carrying liquids of all kinds. No Garden, Farm, Stable, or Kitchen Yard should be without one. Two or more tubs can be had with one carriage at a small additional cost. A lad can easily work it; but if required to travel long distances over rough ground a pony can be attached. The wheels and carriage are wrought iron, and the tub oak.

Cash prices. Carriage paid to any Station in England.

Price	£2 10 0
Ditto, with two tubs	3 8 0
Spreader and Valve .. .. .. extra	0 15 0
Garden Engine and fitting for tub ..	2 10 0
18-Gallon Barrow, with Galvanised Tank	2 0 0
30-Gallon ,, ,,	2 10 0

THE HAMBURGH FIRST PRIZE

LAWN WATERING MACHINE,

WITH POWERFUL GARDEN ENGINE.

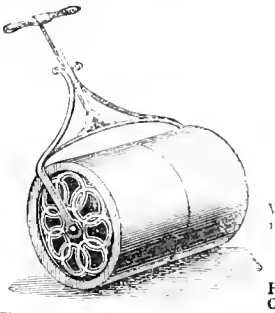
Cash Prices. Carriage paid to any Station in England.
Complete (36 gallons) £7 10 0 | If without Pump .. £3 10 0

This new article is very complete, and most useful in large gardens: is fitted with valve and spreader for distributing water or liquid manure. Waterpots and pails can be filled when the spreader is not in use.

The engine is bolted to the top of the barrel, and fitted with suction pipe, which is useful either for drawing water direct from a pond or out of the barrel.

GARDEN ROLL,

Balance Handle.



These are very heavy and well made.

SINGLE-CYLINDER.

18 in. long by 18 in. diam.	..	£2	10	0
20 ,, 20 ,,	..	3	5	0
22 ,, 22 ,,	..	4	0	0
24 ,, 24 ,,	..	4	15	0

DOUBLE-CYLINDER.

18 in. long by 16 in. diam.	..	£2	17	0
20 ,, 18 ,,	..	3	10	0
22 ,, 20 ,,	..	4	5	0
24 ,, 22 ,,	..	5	0	0
26 ,, 24 ,,	..	5	15	0

PORTABLE PUMP.

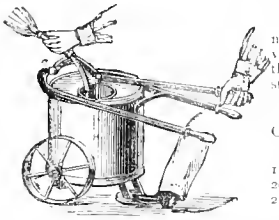
For Liquid Manure or Water.

With stand ..	£2	7	6
10 feet of India-rubber Suction Pipe, with Clip and Strainer..	1	12	6

Powerful Garden and Conservatory Engine

Can be used with a pail or Water-barrow, £2 10s.

IMPROVED GARDEN ENGINE.



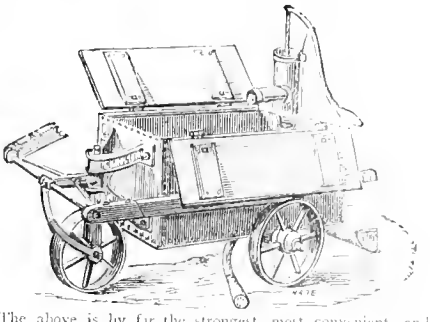
A first-class article, made extra strong, with very powerful engine, throws a continuous stream of water 50 feet.

Cash Prices.
Carriage paid to any Station in England.

15 gallons ..	£4 0 0
20 gallons ..	4 10 0
25 gallons ..	5 0 0

The Judges at the late Great International Horticultural Exhibition held at Manchester (1873) tested this Engine very severely, and, although all the principal makers competed, it was declared to be the best, and was awarded the only prize, a Silver Medal.

WATER or LIQUID MANURE CART.



The above is by far the strongest, most convenient, and cheapest implement of the kind yet introduced. For conveying and distributing liquid manure it is invaluable. A pump can be attached for emptying cesspools, &c. As a drinking trough for cattle, and for many other farm purposes, it is most useful. The shafts and lids are arranged to turn back out of the way. Carriage paid to any Railway Station in England. Cash Prices.

To hold 140 gallons ..	..	..	£12	0 0
,, 200 ,,	..	..	14	0 0
,, 250 ,,	..	..	16	0 0
Galvanised Iron Pump and 10-feet Indiarubber Suction Pipe ..	..	..	4	0 0
Spreaders	..	each	0	15 0

The 140 and 200 gallon carts are best suited for one horse.

SWING WATER or MANURE CART,

SUITABLE FOR A PONY.

With two tanks to one carriage a large quantity of liquid can be carted in a short time, one tank being filled while the other is conveyed away. The tanks are galvanised, and can be set down and left in the fields for cattle to drink from.

Cash Prices. Carriage paid to any Railway Station.

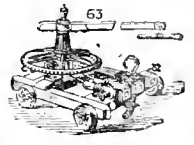
To hold 60 gallons ..	..	£6	10 0
,, 100 ,, ..	..	10	0 0
Valve and Spreader for ditto ..	..	1	0 0

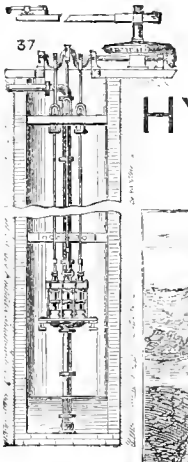
Goods amounting to 40s. sent carriage free to any of the principal railway stations in England. *Cash or references respectfully requested with transmission of all first orders.*

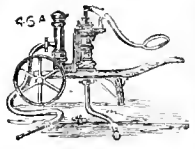
S. OWENS & CO.,

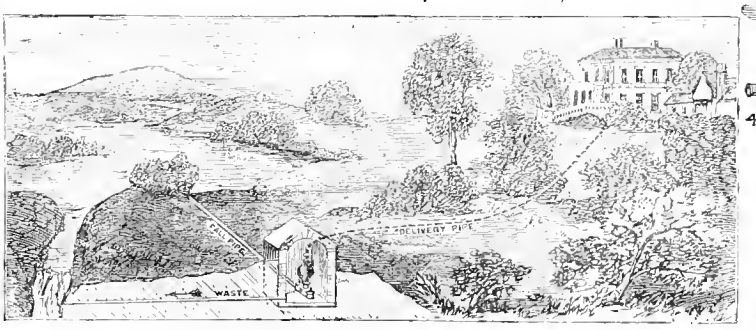
HYDRAULIC ENGINEERS,

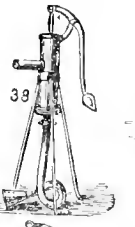
WHITEFRIARS STREET, LONDON, E.C.

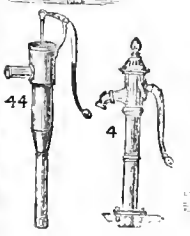


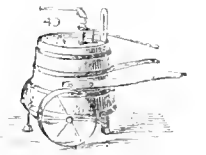


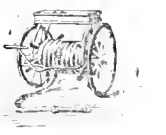


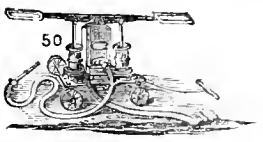


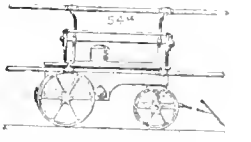












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PRIZES FOR NEW PLANTS.

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ONE THOUSAND POUNDS FOR NEW PLANTS

Of his own introduction, announces that Twelve Silver Cups (the Fourth Annual Series) will be awarded on Wednesday, June 7, at the Royal Horticultural Society's Exhibition. Entries should be sent to Mr. Barron on or before Saturday, June 3. Particulars of these Prizes are given at pages 16 and 17 of the Schedule of the Royal Horticultural Society, which can be had on application at South Kensington, and at pages 176 to 179 of Mr. William Bull's Catalogue of New Plants for 1876. The Cups to be awarded on Wednesday will be as follows:—

FOR PRIVATE GROWERS.

1st Prize, a Silver Cup, value .. £15 15 0
2d Prize, a Silver Cup, value .. £10 10 0
3d Prize, a Silver Cup, value .. £ 6 6 0

FOR NURSERYMEN.

1st Prize, a Silver Cup, value .. £15 15 0
2d Prize, a Silver Cup, value .. £10 10 0
3d Prize, a Silver Cup, value .. £ 6 6 0

In each and all cases the above Prizes are offered for Twelve New Plants of Mr. W. Bull's introduction, and sent out since the commencement of 1873. The Plants available for these Prizes to comprise only those announced in Mr. W. Bull's Catalogues, as sent out by him for the first time. The Catalogues can be easily referred to, or a List of the Plants had on application.

In each and every entry the names of the Twelve Plants to be exhibited must be sent with the entry. Exhibitors can only compete for one Prize at a time in each class.

The Twelve Plants must be twelve distinct species or varieties, but each may be composed of one or more individual plants, if grouped in one pot, pan, or vase.

PRIZE CUP.
Specially Designed by Messrs. Elkington & Co., to be awarded for Mr. William Bull's New Introductions.

A SERIES OF SILVER CUPS,

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3d Prize, a Silver Cup, value .. £ 6 6 0

FOR NURSERYMEN.

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The Twelve Plants must be twelve distinct species or varieties, but each may be composed of one or more individual plants, if grouped in one pot, pan, or vase.

Mr. William Bull will also give the following PRIZES this year, for 12 NEW PLANTS of his introduction, sent out since the commencement of 1873:—

FOR PRIVATE GROWERS.

Blackburn .. .. Silver Cup, value £10 10 0
Blackburn .. .. Silver Cup, value £ 6 6 0
The above Prizes are confined to growers in Lancashire.

Dublin .. .. .. Silver Cup, value £10 10 0
Dublin .. .. .. Silver Cup, value £6 6 0
The above Prizes are confined to growers in Ireland.

Plymouth .. .. Silver Cup, value £10 10 0
Plymouth .. .. Silver Cup, value £6 6 0
The above Prizes are confined to growers in Devon, Cornwall, Somerset, Dorset and Gloucestershire.

Leeds .. .. .. Silver Cup, value £10 10 0
Leeds .. .. .. Silver Cup, value £6 6 0

FOR NURSERYMEN.

Plymouth .. .. Silver Cup, value £10 10 0
Plymouth .. .. Silver Cup, value £ 6 6 0
The above Prizes are confined to growers in Devon, Cornwall, Somerset, Dorset and Gloucestershire.

Dublin .. .. .. Silver Cup, value £10 10 0
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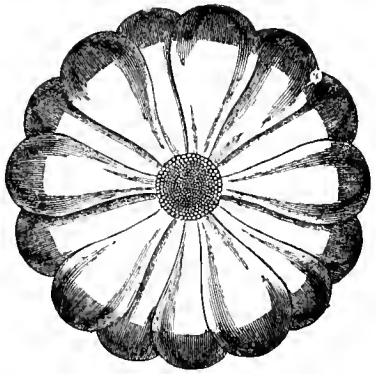

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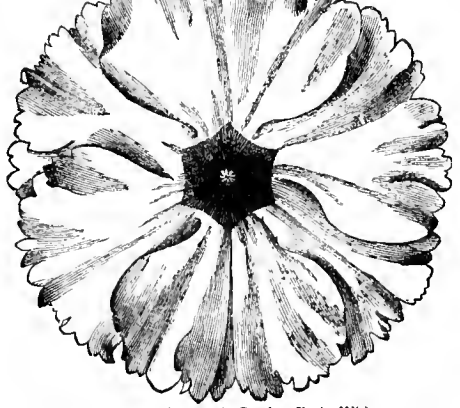

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SATURDAY, MAY 27, 1876.

MODERN FLOWER SHOWS AND THE PASTIMES OF TIMES PAST.

THE flower show is a modern entertainment, attractive to all classes. I attended one last summer at that gem of a watering place, Dawlish, in a domain such as only Devonshire possesses. A park and fine timber, and the bright-leaved Lucombe Oak, fill a glen to overflowing, and hang on its steep sides. There is a house, well placed, with woods in the rear reaching to higher levels, and to the rugged waste of Haldon, which commands a distant view of Dartmoor. Old Cedars stand behind the dwelling, on deep rich loam of the new red sandstone, and on the lawn in front are exotic shrubs, a notable Wellingtonia, and a marvellous Araucaria. On this delightful site a very large number of people took their leisure, and some took the liberty of flattening their noses upon casements, and of staring in at pictures, or perhaps at puddings during dinner, to gratify, for once, their dreams of what the inside of a house should offer to the interior of man. The tents were in the park just without the boundary of the lawn, and the vicar stood upon the slope giving away the prizes, with crowds above, crowds below, crowds on the opposite incline, and an eager crowd around him. The degree of interest in this part of the proceedings, and in the speech of an orator mounted on a shaky rostrum—a cane chair placed upon the green sward—depends on personal considerations. Wives and daughters, having been rewarded for bouquets of cut flowers, crowd round the clergyman. So do those who have been successful with Potatos—cooked or the contrary—and finer Potatos are seldom seen than those of last season from the light land of the old red sandstone of this part of Devonshire. The boiled Emperors and peeled Wellingtons, and the Regents, raw or otherwise, were all excellent. The core of our subject lies in this direction. It is not the pleasant spectacle and the fun of the occasion and the attraction of a summer afternoon spent in grounds from which the sea sparkles, in glimpses, from amidst the timber of a decorated glen—it is not the mere amusement afforded to many persons during a long (and yet too short) summer evening, which renders a flower show so advantageous. All this is good, especially for the young, whose tastes are being formed every instant of their lives, and more especially during their holiday hours; but the chief advantage that can be derived from horticultural exhibitions consists in the gradual development of the better self in all who dig, sow, or strive for the purposes of the exhibition.

A long discourse might be preached on this text; but I remember how the audience of a pompous layman, who was preaching in a theatre, melted away on his observing for the third time, "One more brief thought, dear friends." My object is description, and as "brief thoughts" might not prove acceptable, I will at once resume my narrative. When the vicar left his rostrum, the cane chair, which dipped into another mole-hill at the moment of his descent, the huddled crowd, and I might almost add the cuddled curate—for I am sure he was inconvenienced by the pressure he sustained as the disburser of the prizes—all cried, "hurrah!" The music of the bands then

recommenced, and if the German band which plays alternately at Teignmouth and on "the Lawn" at Dawlish, was preferred by the Dawlish people, that must not be taken as the least disparagement of the other band, but only as a local and very natural preference.

At the close of the festivities—after the last rude smack in the ring in which kisses consummate the game—we all returned down a mile or more of narrow lane to our abodes at Dawlish, on the margin of the brook which murmured at that time over a series of artificial cascades, and which has since flooded "the Lawn," broken down a bridge, entered many houses, and committed damage, I regret to learn, of a much more serious kind. Losses and disasters are the lot of life in all localities.

Other spots cannot boast the long walks by the sea, the soft wooded landscape, the broken and attractive shore, and the incomparable bathing of Dawlish; but every place might include among its blessings flower shows, and the necessary cultivation in garden and window, to supply the tables, and employ the judges at the annual or more frequent exhibitions. I have attended flower shows at Leeds and other northern towns, teeming with an industrious population, and have invariably found them the delight of the working classes.

Amusement is necessary to preserve the moral and mental health of the only animal who is capable of laughter. Men gradually become morose when they remain long unhappy, and they sometimes become wicked from the pressure of the circumstances which surround them. The hour and opportunity of being charmed recurs in many forms, in the case of the wealthy and refined, and it might do so more frequently, in the case of the humbler classes, if horticultural shows were more frequent.

Of all the popular amusements known in England before or since the frolicsome days of yore, the flower show is one of the most modern, and it is one of the best. It is easier to excite than to amuse people rationally, and the difficulty is increased when we have to deal with such great masses of mankind as are now crowded in the streets of London.

In former times London had large spaces for outdoor exercises, and for centuries the woods that encircled it afforded sport. Henry III. granted the citizens a privilege, by charter, of hunting once a year within 20 miles of London. Edward IV. gave hunting parties in Waltham Forest to the Lady Mayoress and her sisters and other ladies of Cockaigne, and also to the City gentlemen, who thus enjoyed the opportunity of hunting and dining with Royalty once a year in Waltham Forest and the Forest of Hainault, which Mr. John Fowler grubbed and drained twenty years ago, using steam-power to lay the pipes, and extracting the ancient Thorns and Hornbeams by means of the same irresistible force. A ballad-writer says of the City magnates who hunted with King Edward:—

"My lord he takes a staff in hand to beat the bushes o'er;
I must confess it was a work he ne'er had done before.
A creature bounceth from a bush, which made them all to laugh;
My lord he cried, 'A hare! a bare!' but it proved an Essex calf."

The sport became annual, and some may yet remember the Epping Hunt of Easter Monday, when the Nimrods of the great metropolis went forth—a dissolute crew and a mob of vagabonds, if the truth must be confessed—

"To hunt the deer with hound and horn,"

and to return to Whitechapel afterwards, with eyes and noses black and bloody, and all the trophies of the chase left behind in public-houses.

Those were pleasant times when, as Stow relates, the youthful population of London poured forth "into the sweet meadows and green woods, there to rejoice their spirits with the beauty and savour of sweet flowers, and with the harmony of birds." At present there is an analogous entertainment on Whit Monday, when you may go up the river to Kew wedged in a steamboat among a surprising mass of pleasure-seekers. The pressure may not injure youthful and elastic ribs, whether their number be one more in some cases than in other cases, or the contrary. To be squeezed slightly once a year may not prove a hardship to those who do not mind it, but promiscuous "outings" cannot be recommended for every day, and such pastimes as we have in view could not be unattended with evil at a period when the manners of all classes of society were coarser than at the present time. Authors have shed a halo of romance around their descriptions of the merry meetings of the olden time; poets, too, have assisted in colouring our visions of the past in roseate hues, and ladies—see *Flowers and Their Associations*, by Miss Pratt—have deceived us with pictures too bewitching to be true. Miss Pratt informs us that in the halcyon days of our predecessors "the young people of both sexes went a-Maying after midnight, accompanied by bands of music." Revelry without music would be rude. There is always a fiddle in the excursion to Kew or Hampton Court, which I have noticed. It cannot be scraped on board the boat, since the fiddler is too closely packed to lift his bow, but the moment we land the dance begins and we make merry, as in Old England; and in the well-shrubbed gardens, under the Taxodiums and other trees of shelter, we loll thick upon the ground and roll over and over. It is an orgie, not exactly "pious," like the orgies of Israel, nor entirely improper, but indescribable.

And now, with regard to those sports of the past which have been extolled, and which were shared by ladies—"after midnight!" Why, the Whit Monday orgie takes place in broad daylight, and yet that leaning towards excess which sometimes surprises the best young people, proceeds so far, that if the extra opportunity of midnight were afforded, I am convinced the band of nightingales—banished this hundred years from the gardens at Vauxhall, but still beautiful at Kew—would make their sweet music for revellers who would be better elsewhere and asleep under roofs which are safer, as a rule, for tender youth than the canopy of heaven and exposure to the fogs of night.

The English people were always merry, and when their open-air privileges of pleasure-taking had been curtailed in the neighbourhood of London, they took very kindly to the substitute offered by tea-gardens and skittles and the unmitigated tap of the beer-shops.

The same amusements do not suit all persons. Kew, for example, on Whit Monday, is for the young; flower shows are for all. We have seen age and infancy equally delighted with the Chrysanthemums that annually blossom in Victoria Park; and we cannot but anticipate that open spaces and flower shows, or permanent floral decoration, will some day furnish means of amusement to the masses to an extent they do not at present anticipate. The evils of the hours of leisure in London consist in the opportunities offered to the indulgence of the inferior appetites. It is this, and the difficulty of finding harmless pleasure, which has sunk a portion of the working class below their former selves in some respects. We some time ago attended several lectures on light at the Shoreditch Town Hall, by "Cambridge men," sent to instruct the people by their University; and such attempts to improve the masses are admirable. But light is hard to understand. It would be well, therefore, to place before the eyes of the people some acres of colour, to be enjoyed without analysis by those who have no taste or time for physics. Let there be lectures and electric lanterns, by all means, and outings to Kew occasionally—the gardens to be closed as now at dusk; but the people want, as everybody knows, the means of harmless amusement near their homes; and considering the wealth of London, and its 40,000 or 50,000 acres, there are obviously the means of increasing its public gardens, even in the worst quarters. In any case, one may indulge in visions of a gardened metropolis of the future as harmlessly as in those of an unreal past. *H. Evershed.*

New Garden Plants.

EPIDENDRUM MARMORATUM, *A. Rich. et Gal.*[*]

It is a great satisfaction to introduce a plant to universal knowledge that has been named, and left inextricable for thirty years. Œdipus himself, provided he had been an Orchidologist and obtained American (!) Orchids to judge, would not have recognised it, and the less so as the flowers are called violaceous, which they are not. Dr. Lindley, when writing his most useful monograph of Epidendrum, did not know the plant, and had only the "diagnosis" of A. Richard to quote. The plant had been gathered by Galeotti in Mexico, near Oaxaca, bearing No. 5040. The remarks from late Galeotti's own hands are "Fleurs violettes et blanches. Oaxaca. Trés rare." Galeotti appears to have gathered probably not more than three or four flowering plants. A figure of it exists in the *Orchidographie Mexicaine* of this author, of which I appear to possess the single existing copy, obtained from the late Galeotti when I purchased his Orchid Herbarium. Copies of those engravings were presented by me to the late Dr. Lindley, in whose Herbarium they may be seen. I seldom saw him so pleased as when I gave him those documents, to disentangle such riddles. I do not consider the representation a good one, and have tried to represent the plant in a more faithful manner for my *Xenia*. When M. Roezl last time visited western Mexico he gathered an "Epidendrum (?), blanc et rouge." The plants came over in the winter of 1872-73, and M. Ortgies sent me six living, well-looking plants, yet they may have suffered from frost. Four died soon, as well as all the plants of Lælia albida, a plant by no means so very "cool" as it is said to be. Two of the Epidendra kept alive and made very nice breaks, which, however, developed exceedingly slowly. One has just nicely flowered. I have not the least knowledge of its having flowered anywhere else, perhaps in consequence of my having given the name before the sale to M. Ortgies.

The plant has rather thick fusiform bulbs, reaching one span in height. One to three oblong leaves, usually two, are to be seen on a bulb, each 2 inches long by 1 wide, or nearly so. The peduncle is broad, sword-shaped at its base, then terete and nodding. The scariose bracts are acuminate and equalling a third of the stalked ovary. The flower-stem is very dense, by no means so lax as represented by Richards' artist. They are as large as those of Epidendrum nutans; their colours are charming, being of a pellucid very delicate crystalline white, adorned with port-wine coloured blotches and streaks; on the sepals and petals those blotches and streaks stand in rows, making one think of Hebrew letters. On the lip, which is very convex, they fill the intervals of the radiating blunt keels, and border them. The anterior part of the column is dark, blackish brown-purple, while the base is green, just as green as the very basis of sepals and petals. I need not say that the plant has an adnate, nearly circular lip, since it ranks under section Osmophytum. We grow it with Masdevallias, Odontoglossums, Oncidia, Cyrtochili, Lælias, and Australian Dendrobia. I hope it may flower at many places. It is no grand thing, but one of those Orchids where the multitude of nice flowers make a certain good *ensemble*. In colour it may be compared to those of the old Paphinia cristata, though they are more gay in our plant. *H. G. Rchb. f.*

DENDROBIUM FALCONERI (*Hook.*) ALBIDULUM.

This interesting novelty has white flowers with pallid tips to the petals. The lip is also pallid, purplish at its apex, and yellow at the base. Even that very dark blotch in the basilar centre of

[*] *Epidendrum marmoratum*, A Rich. Gal.—Osmophytum rhizomate scandente, radicibus adventitiis tenuibus filiformibus; pseudobulbis fusiformibus vulgo diphyllis; foliis oblongis obtuse acutis; pedunculo basi ensiformi, supra teretiusculo nutante; bracteis scariosis lanceo-acuminatis ovariorum pedicellatorum tertiam æquantibus; sepalis cuneato-oblongis acutis; lateralibus extus carinatis; tepalis minoribus ecarinatis; labello subquadrato obtusangulo convexo apice emarginato, utrinque lobato; callis angulatis geminis in ima basi; carinis obtusis latis ad undecim a basi in medium; columna crassa utrinque unidentata.—*Epidendrum marmoratum*, A. Rich.;

the lip is not kept. I have to thank for it H. G. Elliott, Esq., The Crescent, Downs' Park Road, Clapton. *H. G. Rchb. f.*

DENDROBIUM FALCONERI.

No sooner have the majority of the superb varieties of D. Wardianum gone out of flower than we are once again charmed with another of the same family—in some respects similar, in others very different—which I doubt not will now be adding richness to many a collection, and giving great satisfaction to those who have charge of them, as well as many others who will now, perhaps for the first time, have an opportunity of gazing upon it. Here again I must refer to the sale at Stevens' rooms in April, 1875, when I venture to say more genuine surprise was felt and expressed than at any sale that has taken place there in recent years, for then every one present seemed astonished at the strength and vigour of the various subjects that were offered for competition, and instead of disappointment and annoyance succeeding, as is sometimes the case when buying and growing imported plants, the results have been altogether the other way. Witness the success that has followed in the case of D. Wardianum, and the high praises that have appeared in the pages of the *Gardeners' Chronicle* this spring respecting it. And still, in my opinion, these are far below what it deserves, and I look for it attaining greater results than it has done at present. I see nothing to prevent this species bringing growths 3 to 4 feet long, and to produce flowers three-parts of the length of the growth, and then we shall enjoy it far more than we have had the opportunity of doing at present. We have, amongst many others, two plants in 12-inch square baskets, with about twenty leading growths apiece, and already some of the new shoots are 30 inches long, and the number of leaves that have yet to develope give promise of another foot or more in length. These are growing upright, are stout, and in every respect satisfactory.

But I am digressing somewhat. At the same time and place D. Falconeri was disposed of, and here again in a number of instances were growths 5 to 6 feet long, with a great quantity of subsidiary shoots coming away from the main growths in all directions: on these latter were a great number of old flower-spikes, giving evidence of its freeness of blooming when luxuriating freely and naturally at home, and causing many to wonder whether it would under artificial treatment flower in any way at all approaching the free manner it had certainly done in its native habitat.

The method we have adopted here and the results that have followed may be of interest, and I now purpose giving them. As soon as I could get to them on arriving home I fastened some on bare blocks of Apple-wood, and hung several in the East India house; one I hung in the coolest end of the Cattleya-house, and one for a short time was hung in the Odontoglossum-house—this, however, grew so little that I put it into more heat, where it soon grew more freely. I also made up three plants in pots and tied the bulbs up about 18 inches high, and that part of the bulb that was still hanging down I twisted round and also tied to stakes, so that the plant looked more like a bard-wooded plant than an Orchid. These three in pots I stood on the shady side of the Dendrobium-house, and were well supplied with water during the growing season at the roots, and the syringe was freely used among the bulbs and shoots twice-a-day. Those on blocks were also well syringed, and all grew very vigorously—the new shoots from the base on some measuring 2 feet, whilst at the same time great numbers of side shoots and young roots broke away over the whole of the plants.

This treatment was continued during the whole of the season, and by October the syringing was discontinued and the amount of water at the roots considerably lessened. Towards November, feeling very desirous of ascertaining under what conditions it could be induced to bloom, almost all the plants were placed in a cooler temperature; one from the East India house was taken and hung up in an Azalea-house, where the glass many a time during the winter stood at 36°. Here it hung for three months, and was watered only once. Another from the East India house was hung up in the Cattleya-house, and also kept very dry. One that was hung in the Cattleya-house at the first was permitted to remain in the same place, whilst those in pots were taken from the Dendrobium-house and stood in the Odontoglossum-house, where 45° was about the usual night temperature: these also were kept very short of water. The effect the change had upon them was similar in every case where they were wintered in a temperature so much lower than the one in which they had grown. A great quantity of the leaves fell off, and the bulbs thickened up considerably, becoming hard and solid. Several were kept in the East India house and Dendrobium-house, and though now breaking very freely are showing no signs of flower. Now as regards bloom. The one that had been wintered in the Azalea-house was about the early part of March hung up again in the East India house, where, under the influence of heat and increased moisture, it soon commenced to show signs of bloom in a number of places on both the old and new bulbs, and ultimately we were rewarded in this instance with over forty blooms of fine colour and richness. This is the plant we exhibited at the Town Hall, Manchester, on the 25th of last month. The one from the East India house, wintered in the Cattleya-house, is now flowering with about twenty blooms. The one that has always remained in the Cattleya-house is showing about eighteen blooms, which will be open in about a fortnight. The three wintered in the Odontoglossum-house were taken back into the Dendrobium-house, where now we have one with over fifty blooms, the other two with about twenty blooms each. The flowers on these three are much larger than those on blocks, some we have measured being 4 inches across, whilst at the same time some of the smaller blooms on blocks have been much deeper in colour. This is not the case with all, as you may see by those I send with this. [The blooms sent are cut from those in pots, and we consider them large and well coloured.] The results obtained satisfy me, most conclusively, that whilst growing it enjoys a good share of heat and moisture, and that when the growth is finished it must be rested very cool and kept almost entirely without water for from three to four months, and although the cessation of water may cause the leaves to fall off, providing two or three are just kept on the points of the growths when heat and moisture is given these shoots will start again, and the plant will speedily regain an appearance of freshness and activity. *W. Swan, Fallowfield.*

THE GLADIOLUS.

Much has been said and written on the disease, or malady, or weakness, or exhaustion, or whatever it may be called, in the Gladiolus; but from forty-five years' experience in its cultivation and propagation, I say advisedly that I have never discovered the so-called disease in this plant. The failures in its successful cultivation which we frequently hear of do not arise from disease, but simply from wrong treatment, and not from anything inherent in the plant. A horticultual writer has authoritatively written that this plant is infested with a disease, and that this disease is contagious. Nothing can possibly be further from the point. The Gladiolus has a prolific tendency, and it is well known that decay follows reproduction. I will give a few notes of my experience, and commence with raising this plant from seed. The seedlings, if well cared for, will bloom the second year, but more generally the third year. Those which bloom the second year, as a matter of course, bloom before the corm has attained maturity. Now if you wish to kill, or have a decayed bulb, allow it to bloom; let it carry all its flowers, and fertilise every bloom so as to produce all the seed possible. The result will be, in nine cases out of ten, decayed bulbs, the strength of the plant being exhausted by reproducing the seed, and little or no spawn will be formed at the base of the corm. But if you wish to preserve the bulb, do not let it bloom before it has arrived at maturity. As soon as it commences to show its spike for bloom cut it off, and you will save your bulb, as the reproducing power by seed is taken from it; and this prevention of its seeding will in most cases cause it to produce spawn or bulblets, and form a healthy bulb.

Another cause of weakness or decay is produced by planting in an undrained, wet, cold, heavy soil in autumn, or in early spring before the soil is warmed by the sun. The bulbs naturally have a tendency to vegetate early, the fibrous roots strike into an uncongenial soil, the result being that the fibrees perish, and, as a matter of course, the plants languish, turn yellow, and prematurely die down, forming a very small corm. The next year, if the same treatment is followed, the corm generally dies right out. But if you take this weakly, unhealthy corm, plant it in a sandy, moderately dry, healthy soil, and do not allow it to bloom, it will be restored to health; and the second year, if due attention be given to it, will produce a strong well-developed bulb.

Another cause of decay I have observed is when the bulbs are taken up in quantities and stored away in a wet state, lying thickly together with the air excluded; thus many of the corms will become spotted, some will turn black, and frequently the whole corm will perish. The same result occurs when some of the delicate sorts are allowed to remain late in the ground before lifting, the outer skins perish, and the corms become spotted. In other cases, where large quantities are placed together, even in a dry state, a portion of the corms will become affected by dry rot, similar to that which is frequently met with amongst Tulips and Crocus bulbs, so that when pressed between the finger and thumb, they have the appearance of dry lime. There are also instances of seedlings dying before blooming: the cause of this, I have no hesitation in saying, arises from their being the offspring of weakly and sickly parents, or from being planted in uncongenial soil. Again, it frequently occurs that a bulb will throw up two spikes—one of the spikes will carry its bloom well, the other languish, turn yellow, and produce a rotten bulb; this no doubt arises from overtaxing the plant the previous year, it not having stored up a sufficient amount of food to enable it to withstand a second production of bloom and seed, hence the weaker of the two spikes succumbs.

I have never known fungi or contagious diseases attack the plants when in a healthy state, as we find to be the case with the Potato. I believe, therefore, that it is not inherent or contagious. It is quite possible that when the corm is exhausted and decaying, a fungus may be discovered preying in or upon it. If we supply the plant with all its requirements—a feat in itself very simple, being clearly shown by our annual exhibits cut from an open field of 5 acres—we should rarely hear of the mismomer, disease. I say, give the plant the attentive cultivation it deserves, and we can produce spikes of this grand flower of the highest standard of perfection in the open air of this climate. *J. Kelway, Gladioli Villa, Langport.*

THE ANERLEY DRACÆNAS.

Some time since (*Gardeners' Chronicle*, 1875, iv. 615) we gave an account of a marvellously fine collection of seedling Dracænas, which had been raised by Mr. Bausé, at Mr. Wills' nursery at Anerley. That account referred to a selection of a considerable number of the finest of the varieties which had at that time broken into colour. As was to be expected, however, amongst the thousands of judiciously crossed seedlings Mr. Bausé had obtained, the first selection by no means exhausted all the gems that were worth preserving, and a subsequent visit has enabled us to confirm Mr. Wills' opinion that a further selection from amongst Mr. Bausé's fondlings should be made. The twelve following varieties, some of which formed part of the collection shown at Brussels, have accordingly been selected to be grown on, along with the previously selected set, of which, we believe, some half a dozen kinds are to be let out immediately. We shall describe them in alphabetical order:—

37. D. Alexandræ (nigrescens ♀, regina ♂).—A fine and vigorous-growing variety, with spreading leaves of a deep clear green marked with a broad white margin or with conspicuous sectional streaks, the heart or central ones being often wholly coloured white, except when here and there a flush of the ground colour reappears. The leaves are lanceolate oblong and acuminate, a foot long by about 4 inches broad, and supported on longish white-edged foot-stalks. It is one of the finest of the sorts with white variegation.

38. D. aurantiaca (concinna ♀, regina ♂).—A very fine and effective variety of the narrow-leaved series, the habit of the plant being erect and slender, the leaves long, narrow, erect at the base, and thence arching gracefully. The leaf-stalks are erect, and edged with rose-colour. The leaves themselves are green, broadly edged with a band, ¾ inch wide, of bright orange or flame colour, pallid

Gal. Orch. Mex. in Annales Sciences Nat. 1845, p. 21, No. 44; Icon. ined. tab. 13; Lindl. Folia i., Epid., No. 142, p. 42.—Flores albo-crystallini maculis striisque rufo-purpureis picti. In Mexico occidentali. Galeotti, 5010; Roezl.—*H. G. Rchb. f.*

in the young central growth, and flushed with a salmony hue, thence deepening as it gains age into an intense flame or orange tint. The young free growth is more or less wholly suffused with this orange tint. A most telling novelty.

39. D. CUPREA (concinna ♀, regina ♂).—A handsome and novel variety of the narrow-leaved flame-coloured series, taller in habit, more slender, and longer-leaved than D. aurantiaca. It is of erect growth, with the leaf-stalks erect, and margined with salmony rose, the leaves widening out into a narrow, linear lance-shaped, arching blade, which is green, distinctly edged, and here and there streaked or suffused with a coppery orange-red. It is a very elegant plant for light decorations.

40. D. GIGANTEA (excelsa ♀, regina ♂).—One of the largest-growing of all the Anerley hybrids, of a bold and widely spreading but dense habit, the leaves large, oblong, shortly-acuminate, recurved, of a dark bronzy green with coloured footstalks. The young leaves have a creamy variegation flushed with pink, changing as it acquires age to a deep bright rose, through varying shades of magenta-pink. The mature leaves are fully 7 inches broad. It is a plant of noble aspect, with bold semi-drooping foliage.

41. D. IGNEA (concinna ♀, regina ♂).—A very striking novelty, of medium stature and development, belonging to the flame-red series. The leaves are lanceolate acuminate, arching, with erect rosy edged foot-stalks, the blades green, broadly edged with a band, ¾ inch wide, of flame-colour or deep salmony red, breaking out into streaks and sectional markings in the free young growth. It is extremely elegant, distinct, and effective.

42. D. MAJESTICA (concinna ♀, regina ♂).—A free-growing, tallish form, with fine and effective variegation. The leaves are oblong-lanceolate acuminate, 4 inches broad, with erect foot-stalks 4 to 5 inches long, green, edged with salmony rose, the leaf-blades being very distinctly bordered with a ¼-inch wide band of bright flame red, most developed at the base, but forming a tolerably regular margin. We regard this as one of the very finest of the whole series, well deserving the name assigned to it.

43. D. NITZSCHNERII (terminalis ♀, regina ♂).—A noble-habited plant, with very broad oblong shortly acuminate, recurved leaves, which in the younger central growths are much but irregularly variegated, with a creamy margin, more or less suffused with magenta-pink, especially near their base, the colour strengthening with age into a rich rosy pink, with which the older leaves are narrowly bordered. The foot-stalks of the leaves are also edged with rosy red. It is a sterling variety of the broad-leaved series, with light-coloured variegations passing to rosy red.

44. D. PURPURASCENS (ferrea ♀, regina ♂).—One of the bold-habited free-growing series, with oblong acuminate, spreading leaves, the younger ones more erect. They are of a dark bronzy green, with a very bold and broad variegation, marginal and sectional, of deep rosy red, which in all the younger stages has a decided purplish tint. This pale purplish hue flushing the greenish white of the youngest central growth gives it a very distinct and pleasing aspect, and renders it a telling and effective plant.

45. D. RECURVA (nigrescens ♀, regina ♂).—This variety is remarkable amongst the broad-leaved vigorous-growing forms, for its close and compact habit, the leaves recurving closely over each other, almost as much so, though in a different way, as in D. voluta. The leaves are broad, oblong, shortly-acuminate, deep green, variegated with broad sectional streaks of magenta-pink, and margined, as is the foot-stalk of the leaf, with a narrow band of the same rosy tint. The habit and style of growth are remarkably distinct.

46. D. REGALIS (ferrea ♀, regina ♂).—This is one of the bolder forms, forming a fine-looking massive plant, with a tendency to grow up, being of remarkably vigorous habit. The leaves are oblong, shortly acuminate, densely set, of a dark bronzy green, unequally but distinctly margined with magenta-rose; the leaf-stalks have a narrow border of the same colour, while the young central portions are bordered with creamy white, soon taking on a flush of light rose. The broad, well-coloured foliage is very effective.

47. D. SEYFARTHII (Cooperi ♀, regina ♂).—A bold and vigorous variety, with densely-set recurved leaves, which are oblong, shortly acuminate, dark green, with a freely distributed creamy and pale bright green variegation, the coloration passing through pink to deep magenta-rose, the coloured portions being more or less spotted with green, which is retained in age. The older leaves have a narrow edge of bright rose. It is in the way of Thomsoni, but differs in the coloured parts being maculated with green.

48. D. THOMSONI (terminalis ♀, regina ♂).—A fine habited variety, with broad oblong, shortly acuminate, deep green leaves having a border about an inch wide of pale magenta-rose, the colouring being creamy with a flush of magenta in the well-developed central younger portions, and deepening with age to the magenta tint above described. It is a variety of great merit, both on account of its stocky dense habit, and its broad marginal variegation.

Of the foregoing twelve varieties, D. gigantea, D. Nitzschnerii, D. recurva, D. Seyfarthii, and D. Thomsoni belong to the broad drooping-leaved red series; D. regalis, D. majestica, and D. purpurascens to the broad spreading-leaved red series; D. Alexandræ to the broad spreading-leaved white series; D. ignea to the medium spreading-leaved red series; and D. aurantiaca and D. cuprea to the narrow spreading-leaved red series.

A very distinct group, in which the variegation is of a most effective flame-red colour, is formed by D. majestica (broad-leaved), D. salmonea and D. ignea (medium-leaved), and D. aurantiaca and cuprea (narrow-leaved). These are certain to become favourites for greenhouse decoration. *T. Moore.*

THE BIJOU LEMON.

WHEN in the orangery in the Sawbridgeworth Nursery, lately, Mr. Frank Rivers called our attention to this beautiful little Lemon, a representation of which is annexed (fig. 123). As will be seen from the illustration, it is very small—say about the size of a Tangierine Orange, but it contains more juice than many of the larger kinds. It is on account of this latter quality that we desire to recommend it to those who grow Lemons for home consumption. The leaves are small, ovate-lanceolate in form, tapering towards the base, and of a very dark green colour; the tree is a good bearer, and would make an admirable and useful screen for the back wall of a vinery.

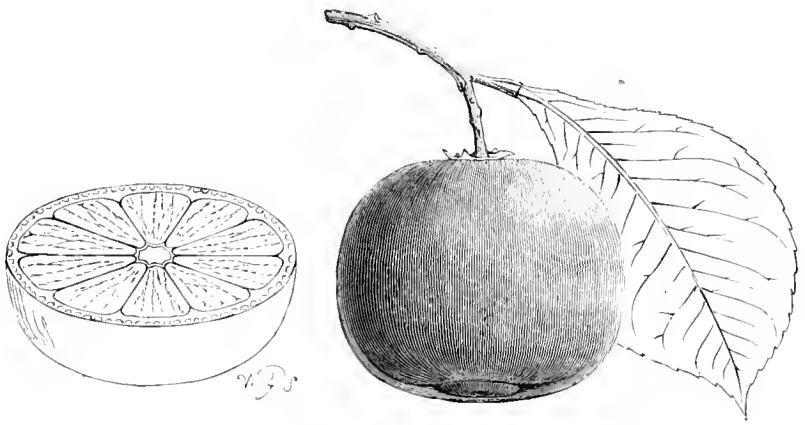


FIG. 123.—THE BIJOU LEMON.

BLANDFORDIA FLAMMEA, VAR. PRINCEPS.

OF this fine variety, introduced from New South Wales by Mr. Bull, Mr. Baker in the *Botanical Magazine*, tab. 6209, thus writes:—"Botanically not more than a variety of B. flammea, *Bot. Mag.* t. 4819, from which it differs by its larger flowers, with the tube of the perianth narrowed gradually from the throat to the base, and passing so gradually into the pedicel that is difficult to see without cutting it open where one stops and the other begins, and by its included pistil. For horticultural purposes it is a much finer plant, the bright crimson of the tube and pedicel forming a very effective contrast with the bright yellow of the segments, so that, size of flower and colouring both taken into account, it may safely be said to be for decorative purposes the finest of the known Blandfordias."

Having seen the plant on more than one occasion we can quite confirm all that Mr. Baker has written concerning it. We can scarcely mention any more brilliant greenhouse plant, and the cultivation is very simple. If planted out it, like others of its kind, would thrive better than in pots. For our illustration (fig. 123) we are indebted to Mr. Bull.

CALYSTEGIAS.

HARDY, enduring, quick-growing climbing plants, are great *desiderata*, especially to those who reside in villas, or semi-detached houses, and such as possess a considerable extent of walls, or much fencing, which at varying points come immediately into view. That much may be done to neutralise the unsightliness of such objects, by planting permanent evergreen and other kinds of climbing plants, shrubs, &c., is admitted, but this does not always meet the case, and hence it may be well to draw attention to one of the hardiest and freest amongst summer climbers.

Several species of Calystegia, known better perhaps as "Bearbinds," conform well to the character above indicated. The reader must not, however, confound these Calystegias with Convolvuluses, as, though they are most intimately related to them, they are not identical. I do not doubt but that this matter of identification has something to answer for, as a reason why so useful a genus is not better known, and more commonly grown.

Of double Convolvuluses many, no doubt, have heard; some may have seen them, but upon reference to their tradesmen's catalogues they have failed to find them, and hence the want of a well-deserved popularity in the case of the plants themselves. Calystegia pubescens flore-pleno is then the double blush variety, which at a few yards distance gives the appearance of "wreaths of Roses," and whether used as a covering for bare walls, as a wreath to a dwelling-house doorway, or twined over arches, pillars, trellises, verandahs, or window-boxes, or for growing in pots for summer decoration, indoors or out, is most useful. The variety above-named is the double-blossomed form of the downy Chinese species. It attains to a height of 12 or 14 feet, blooms very freely, and is an excellent plant for withstanding the accumulations of dust, and the dryness of wayside houses.

Calystegia sepium incarnata is a rose-coloured variety of our common British Bindweed, the normal or white form of which often produces a very lovely display upon hedgerows, and such foster-trees as it climbs upon, even though the term Devil's-bit be given to the often very troublesome roots. I may also note a variegated form, which exists in the hands of the nursery trade.

Other meritorious species are:—C. dahurica, possessing large satiny rose flowers with white stripes; C. spithamæa and C. oculata, of more lowly growth, yet twiners; to which may be added our native Sea Bindweed, C. Soldanella, an evergreen trailing-plant, of a delicate flesh colour.

The former or climbing species, of which the double-blossomed one is the best, will grow freely in any and every position where a moderate depth of soil exists, and, if once planted, they are not likely to be again lost, as they are true to the character of this class generally—that of extending and holding its own, often under the most severely adverse circumstances. *William Earley.*

The Villa Garden.

Bedding-out: Preparation of the Beds.—It is obvious that bedding plants cannot be expected to do well unless the beds are specially prepared to promote their well-being. Really bedding plants are great feeders, much more so than is generally supposed; and yet Villa gardeners will often thrust the roots of plants into their beds in a most unceremonious fashion, caring little, or rather thinking little, as to the conditions necessary to their well-being, and who wonder that they take on a miserable appearance before the summer is half over. This, we regret to have to state, is no ordinary occurrence: it seems to be supposed that bedding plants must do well under any circumstances, but this is a grievous mistake. If the beds are not so prepared as to promote a healthy and free growth, they cannot be expected to do well.

We will suppose that the beds have been lying unoccupied during the winter and spring. Now in cases where there is no attempt at spring decoration of the flower garden, the usual rule is to dig the beds deeply during the winter, at the same time mixing in with the soil a good dressing of rotten manure. Flower beds need to be dug deeply and manured deeply also, for the roots of Calceolarias, Pelargoniums, Verbenas, Ageratums, and other strong growing plants, go down deeply into the soil in search of nutriment, which is as necessary for them as for vegetable crops in the kitchen garden. Then further, during the spring, when the weather is dry, the beds are forked over once or twice, and the soil beaten well to pieces, in order to have it as fine as possible. Especially is this necessary in the case of heavy soils, which, in the case of a spell of dry weather, like that through which we have been passing, actually needs a good deal of beating about to make it workable. Advantage should be taken of passing showers, in order to crumble the saturated lumps to pieces with a rake. So much then for beds that have been lying empty through the spring.

We have, however, so frequently advocated the filling of beds in small gardens with spring-blooming plants, that we would fain believe our advice has been followed in many instances. If this be the case, Daisies, Violas, Silene, Forget-me-Not, Limnanthes, and other things, will now be at the height of bloom, clothed in their most charming floral garb. The season has proved such a late one that spring gardens are very late indeed in becoming effective in point of floral display, and the rain which has fallen during the last few days will freshen the plants up, and they will be very pretty and bright all through June. It would be a pity to disturb the beds when at their best, and we would counsel a little extra waiting rather than an untimely waste of floral wealth.

But this pause or term of waiting should not be an idle one. There is work to be done—preparatory work—which will greatly hasten matters when the time to plant comes round. In the first place, the question of the disposal of the spring-flowering plants now in the beds must be considered. On all occasions when we have advocated the employment of spring-flowering plants in the garden, we have also contended for the necessity of setting apart a small plot of ground as a reserve garden in which to plant the spring things during the summer, at least those of them that are not raised from seed. Let this piece of ground be forked over, and at the same time let some material from the compost heap be mixed in with it, and also a reserve of fine light soil—such as refuse potting soil—should be put on one side, to place about the roots of Daisies, Violas, &c., when they are taken from the beds, divided, and planted up for the summer. In the second place, some leaf-mould or the fine siftings from the compost-heap should be got ready for use with the bedding plants, when they are put out in the beds. This is of far greater importance in the case of beds the soil of which is rather heavy and has dried in lumps. As the use of spring flowers retards planting, so when planting takes place it is of great value to have at hand some fine good soil, to place about the roots of the plants, so that they can quickly lay hold of it and not suffer a check. When the hole is made in the bed to receive the plant, a coating of this soil should be placed below and round the roots, between them and the rougher soil, and the whole be pressed firmly about them. This will prove to be of material assistance to the plants. All the plants to be used for the summer display should be exposed as much as possible now that the weather has become warmer, and on no account allowed to suffer from drought at the roots.

Fig. 124.—Blandfordia flammea var. princeps.

The Rose Maggot.—This pest is just now infesting the growing Roses with more than usual pertinacity, and its ravages appear to be greatly favoured by the prevailing drought, and recent cold drying winds. Our own Roses, and those of our neighbours, are badly attacked by it—scarcely a point but what appears to be affected by it. What we are doing in the matter may be of service to others, if the process be set forth. In the first place all the plants have been gone over and carefully hand-picked; the grub is picked off and destroyed. Then a thick solution of soft soap and water is made, and each shoot carefully cleansed in it, and left with a good coating of the saponaceous compound adhering to the leaves. Then we have loosened the soil about the roots of the plants and mulched them with some strong moist manure, freely watering with water during the time of drought. We are thus encouraging a robust growth, and by so doing drive the plants out of that state of paralysis into which they have fallen through being infested with grub. The loss of the Rose bloom is one of the greatest calamities that can befall a Villa gardener.

Weeding.—At the time of thinning all growing weeds need pulling out. Being in a small stage of growth they will soon come out by the roots after a shower, and they should be thrown away on the rubbish heap to rot. If left in the ground they establish themselves quicker than the growing crops and choke their growth, besides which they impart to a garden a slovenly appearance. "Ill weeds grow apace," states the old proverb, and not only do they grow fast but they seed themselves also, and spread in all directions. If the garden can be thoroughly cleared of weeds during the month of May it will greatly assist in keeping it tidy all the summer.

Florists' Flowers.

The true Dwarf Purple Queen Stock is not only one of the hardiest of all its class, but scarcely behind the best imported summer kinds in the production of double flowers. In a large bed raised from seed saved indiscriminately, and not subjected to any particular thinning or selection, just seventy-five plants in the hundred are double—a proportion that ought to satisfy the most exacting, having regard, at the

same time, to the necessity for the production of seed. This Stock is of a rich, deep, violet-purple hue; is very dwarf and compact, seldom exceeding 15 inches in height when in full bloom. In some cottage gardens in the neighbourhood of Feltham, Middlesex, it is well-grown, the double flowers being cut in bunches for market. When grown in bulk it is a capital successor to the dark Wallflower, and furnishes an immense amount of deliciously-perfumed flowers all through the month of May. As a bedding plant for public parks and gardens it is most effective, and produces a mass of colour that would rival any other bedding plant for the time being. Plants lifted with good balls of earth early in April, and carefully potted, would prove acceptable for many purposes when in flower.

—— At the last moment, the annual exhibition of the ROYAL NATIONAL TULIP SOCIETY, which was announced to take place at the Botanical Gardens, Old Trafford, on Friday, May 26, has been postponed till Tuesday, May 30, when it will take place in the Town Hall, Manchester, in conjunction with an exhibition of the Botanical and Horticultural Society. The reason for its postponement is the certainty that, owing to the long spell of cold dry weather, and the lateness of the season, there could be no display of Tulips worthy of the name of the National Society; and, indeed, it is very doubtful indeed if some of the more remote of the northern growers will be able to exhibit at all. The general opinion of the cultivators has been ascertained, and the exhibition is now definitely fixed for May 30. The Northern Counties Exhibition of Tulips will be held at Gorton, near Manchester, on the following day, and on Thursday, June 1. Mr. Samuel Barlow's annual Tulip dinner will take place at Stokehill House, Chadderton, which is the occasion of a *réunion* among the leading Tulip cultivators in the country, and is always pleasantly anticipated by them. On the whole, the Tulips are looking well, considering the character of the weather during the past three weeks, but they are very late in opening.

A SYNOPSIS OF THE KNOWN SPECIES OF IRIS.—IV.

THE present paper will contain the Xiphions of the section Gynandriris and the acaulescent species of the section Juno. The species not hitherto dealt with are as follows:—

SECTION GYNANDRIRIS.—Inner segments of the perianth erect; filaments united in a tube in the lower half.

The only species— 10. X. SISYRINCHIUM.

SECTION JUNO.—Inner segments of the perianth minute, spreading horizontally, thrust between the outer ones; filaments free.

Key to the Species.

Acaulescent species.
- Flowers very large, deep violet. 11. X. ALATUM.
- Flowers smaller, yellowish or whitish.
  - Leaves linear. 12. X. PERSICUM.
  - Leaves lanceolate. 13. X. PALÆSTINUM, 14. X. CAUCASICUM.

Species with a distinctly produced stem.
- Tall, with narrow leaves. 15. X. AITCHISONI.
- Dwarf, with broad leaves.
  - Leaves ½—¾ inch broad at the base. 16. X. STOCKSII.
  - Leaves 1—1½ inch broad at the base. 17. X. AUCHERI.

10. *X. Sisyrinchium*, Baker, in Seem. Journ. 1871, p. 42; Hook. fil. in Bot. Mag., t. 6076; *Iris Sisyrinchium*, Linn. Sp Plant., 2d edit., p. 59; Sibth. and Sm. Fl. Græc., vol. i., p. 30, t. 42; Cav. Ic., 274, t. 193; Red. Lil., t. 29; Thunb. Diss., No. 27; Ait. Hort. Kew., vol. i., p. 174; *Gynandriris Sisyrinchium*, Parl. Nuov. Gen., p. 49; Godr. Fl. Franc., vol. iii., p. 246; Klatt, in Linnæa, vol. xxxiv., p. 577; *Moræa Sisyrinchium*, Gawl. in Bot. Mag., t. 1407; Gen. Irid., p. 42; *Iris ægyptia*, Delile, Frag. Fl. Arab., p. 6; *I. fugax*, Tenore, Fl. Neap., vol. i., p. 15, t. 4; *Moræa fugax*, Tenore, Syll., p. 26; *M. Tenoreana*, Sweet, Brit. Flow. Gard., t. 110; *Gynandriris monophylla*, Klatt in Linnæa, vol. xxxiv., p. 578.—Bulb globose, eatable, ½—1 inch thick, coated with slightly reticulated brown wiry fibres. Stem terete, flexuose, ½—1 foot high, branched when fully developed, and producing several sessile clusters of flowers from the main stem. Leaves two, nearly opposite, produced near the base of the stem, narrow, linear, glabrous, rigidly coriaceous, strongly ribbed glaucescent, ⅛—¼ inch broad, ½—1 foot long. Spathe valves lanceolate, ½—2 inches long, ventricose, membranous at the flowering time, several barren ones on the stem below those that contain the flowers. Flowers usually two to a spathe, very fugacious. Ovary subsessile, cylindrical, ½—¾ inch long; tube filiform, about an inch long; limb deep lilac-blue, 1—1½ inch deep; falls obovate, ½ inch broad, with a spreading lamina shorter than the erecto-patent claw, which is narrowed gradually from the tip to the base, the throat marked with a yellow-white spot and often slightly pubescent; standards oblanceolate, erect, plain lilac-blue, ⅓—½ inch broad, rather shorter than the falls. Filaments twice as long as the anthers, usually united to one another in the lower half, free in the upper; anthers ligulate, ¼ inch long. Stigmas, including the crests, as long as the standards. Capsules membranous, oblong, an inch long, included in the spathes.

Ranges from Portugal and Spain through the Mediterranean region, to the Holy Land, Beloochistan and Afghanistan. It is an old and well-known species, figured by Dodonæus in 1583, and by Lobel in 1591. It has the smallest and most fugacious flowers of any of the Xiphions, and for this reason has never been much of a favourite with cultivators. It flowers in the Mediterranean region from February to May. It appeared lately in the *Botanical Magazine*, from specimens furnished by the late D. Hanbury. Its best place is probably in the genus Moræa, where it has been already classified by Gawler, but all the other Moræas are plants of the Cape. G. monophylla, of Klatt, is to my eyes simply a dwarf undeveloped state of this species, not a proper variety, and I differ from Dr. Klatt in referring to this species certain Cape specimens.

11. *X. alatum*, Baker, in Seem. Journ. 1871, p. 108; *Iris alata*, Poiret, Voy. Barb., vol. ii., p. 86; Bot. Reg., t. 1876; Lam. Encyc., vol. iii., p. 302; Ker, Gen. Irid., p. 68; *Thelysia alata*, Parl. Fl. Ital., vol. iii., p. 317; *Coresanthe alata*, Klatt, in Linnæa, vol. xxxiv., p. 575, in part; *Iris scorpioides*, Desf. Fl. Atlant., vol. i., p. 40, t. 6; Red. Lil., t. 211; *Juno scorpioides*, Tratt, Answ., vol. i., p. 135; *Costia scorpioides*, Willk. in Bot. Zeit. 1860, p. 131; *Iris transtagana*, Brotero, Fl. Lusit., vol. i., p. 52; *Iris trialata*, Brot. Phyt. Lus., vol. ii., p. 44, t. 95; *Iris microptera*, Vahl. Enum., vol. ii., p. 142; *Thelysia grandiflora*, Salisb. in Trans. Hort. Soc., vol. i., p. 303.—Bulb ovoid, 1½—2 inches thick, with many brown membranous coats, and a basal tuft of fleshy cylindrical fibres. Leaves about half a dozen in a basal rosette, falcate, sub-erect, lanceolate, clasping the base of the spathe, an inch broad at the base, under a foot long at the flowering time, narrowed gradually to an acuminate point. Stem none, so that the spathe is sessile in the centre of the rosette of leaves, usually one, rarely two, flowered. Spathe valves lanceolate, membranous, 3—4 inches long. Ovary subsessile in the spathe; tube cylindrical, 3—6 inches long; limb bright lilac-purple, 3 inches deep; falls oblong, cuneate at the base, an inch broad, bright yellow at the throat; glabrous; inner segments oblanceolate-spathulate, an inch long, spreading horizontally. Anthers yellow, ½ inch long, equalling the filament. Stigmas, including the crest, nearly as long as the outer segments. Capsule oblong, 2 inches long, nearly sessile in the centre of the rosette of leaves.

Extends from Spain and Portugal to Sicily and Algeria, flowering from October to December. It is a most striking species, with a bright-coloured flower, often 8 or 9 inches long. It was figured by Clusius under the name of Iris bulbosa latifolia lusitanica prima. The group of Xiphions, to which this and all the following belong, has been proposed as a genus, or sub-genus, under five different names by as many different botanists—Juno by Trattinick, Thelysia by Salisbury, Scorpiris by Spach, Costia by Willkomm, and Coresanthe by Alefeld; so that the synonymy of the species, which I shall not attempt to follow out in full detail, is almost as extensive as that of some of the Ferns.

12. *X. persicum*, Miller, in Gard. Dict., edit. 6; Baker, in Seem. Journ. 1871, p. 109; *Iris persica*, Linn. Sp. Plant., edit. 2, p. 59; Bot. Mag., t. 1; Red. Lil., t. 189; Gawl. Gen. Irid., p. 69; *Costia persica*, Willk. in Bot. Zeit. 1860, p. 132; *Coresanthe persica*, Alefeld, in Bot. Zeit. 1863, p. 296; Klatt, in Linnæa, vol. xxiv., p. 574.—Bulb ovoid, an inch thick, with copious brown membranous tunics, and a tuft of rather fleshy fibres from the base. Leaves 4—5 inches in a basal tuft, linear, recurved, 2—3 inches long at the flowering season, ½ inch broad at the base, narrowed gradually to the point, deeply channelled down the face, obscurely ciliated on the edge. Stem none, so that the spathe is sessile in the centre of the rosette of leaves. Spathe valves tight-clasping, about 2 inches long. Ovary subsessile in the spathe; tube 2—3 inches long; limb 1½—2 inches deep; falls oblong-spathulate, ½ inch broad, cuneate at the base, pale yellowish lilac, with a bright yellow beardless keel, much undulated towards the edge; inner segments oblanceolate, about ½ inch long, spreading horizontally. Stamens ⅜—½ inch long, equalling the filaments. Stigmas, including the crests, about as long as the falls.

Extends from Asia Minor to the south of Persia, where it reaches a height of 6000 feet amongst the mountains. It is very fragrant, with a scent like that of Violets, and flowers with us in February or March. It is mentioned by Rudbeck, and figured by Morison, and was introduced into English gardens about 1627, for Henrietta Maria, the Queen of Charles I. This, and the last, and the next also as soon as it is introduced, are well adapted for flowering in vases, like Hyacinths.

13. *X. palæstinum*, Baker, in Seem. Journ. 1871, p. 108; *Juno palæstina*, Klatt, in Bot. Zeit. 1872, p. 498.—Bulb ovoid, 1—1½ inch thick, with copious, membranous, brown tunics. Leaves about half-a-dozen in a basal tuft, lanceolate falcate, clasping the spathe at the base, narrowed gradually from the base to the point, 3—4 inches long at the flowering time, ¾—1 inch broad at the base, minutely ciliated on the margin. Stem none, so that the spathe is sessile in the centre of the cluster of leaves; valves of the spathe whitish, lanceolate-acute, 3 inches long. Ovary sessile in the spathe; tube 2—3 inches long; limb pale yellow, or with a slight lilac tinge, 1½—2 inches deep; falls oblong, with a cuneate base, about ½ inch broad; inner segments ½ inch long, spreading horizontally. Anthers ½ inch long, about equalling the filaments. Stigmas, including the two deep crests, as long and as broad as the falls.

A native of Palestine, flowering in January. I have seen specimens from three places: the neighbourhood of Hebron, gathered by Mr. Lowne; rocky ground at Scanderoun, near Saida, gathered by M. Gaillardot; and the plain of Sharon, gathered by Miss Osborne and the late Mr. Hayne. It has never yet been figured or introduced into cultivation. It is most like *X. alatum*, but the flowers are smaller, and yellow instead of purple.

14. *X. caucasicum*, Baker, in Seem. Journ. 1871, p. 109; *Iris caucasica*, Hoffm. Comm. Soc. Phys. Med. Mosc., vol. i., p. 40; M. Bieb. Fl. Taur. Cauc., vol. i., p. 33, vol. iii., p. 45; Sweet, Brit. Flow. Gard., t. 255; Led. Fl. Ross, vol. iv., p. 100; *Thelysia caucasica*, Parl. Fl. Ital., vol. iii, p. 317; *Costia caucasica*, Wilk. in Bot. Zeit. 1860, p. 132; *Neubeckia caucasica*, Alefeld, in Bot. Zeit. 1863, p. 297; *Coresanthe caucasica*, Klatt, in Linnæa, vol. xxiv., p. 575.—Bulb ovoid, an inch thick, with a basal tuft of cylindrical fleshy fibres and copious brown membranous tunics produced up the neck. Stem 1—3 flowered, at first none, or very short. Leaves 4—5, sharply falcate, lanceolate, narrowed gradually from the base to a long point, 3—4 inches long, ½—¾ inch broad at the base, furnished with a distinct pale minutely ciliated horny border. Valves of the spathes pale green and scariose, lanceolate, acute, ventricose, 1¼—1½ inch long. Spathes not more than one-flowered. Ovary subsessile in the spathe, cylindrical, half an inch long; tube 1—1½ inch long, exserted from the top of the spathe; limb always pale yellow, 1¼ inch deep; falls obovate, half an inch broad, reflexing only in the upper third, the permanently erecto-patent claw half an inch broad at the top, narrowed gradually to the base; inner segments oblanceolate unguiculate, half an inch long, spreading horizontally. Stigmas broad, pale yellow, including the deltoid crests, nearly as long as the falls. Anthers ⅜—½ inch long, rather shorter than the filaments. Capsule oblong, 1¼—1½ inch long, clasped tightly by the withered relics of the spathe.

A native of the Caucasus and the mountains of Armenia, Kurdistan, and the northern provinces of Persia, ascending to an elevation of 7000 or 8000 feet. This has been in cultivation in this country for many years, but has never been common. It flowers in February and March, and is perfectly hardy, but, unlike its near neighbour, X. persicum, is destitute of scent. *J. G. Baker.*

Garden Operations.

PLANT HOUSES.

GREENHOUSE HARD-WOODED PLANTS.—Oranges. These plants when, as most generally, they are grown for decorative purposes, usually get looked upon as purely greenhouse subjects, and are treated accordingly, without any attempt to give them even a little extra warmth whilst they are growing; in fact, it is no uncommon occurrence to see them turned out-of-doors before their growth is completed, not alone in the warmest and most favourable parts of the country but even where these conditions as to climate are not present. The result is that they never look so well as they otherwise would, often getting into an unhealthy state from which it is difficult to get them to recover, even where fruit for mere appearance sake is not so much valued as a green healthy condition of the leaves, and the production of a crop of flowers, although the

latter may be always looked for in proportion to the more or less fully matured state of the leaves and wood. A little reflection upon the conditions under which Oranges grow naturally will suffice to show any one that it is no wonder plants so treated are generally in anything but a satisfactory state. It is nothing less than the comparatively strong vigorous nature of the Citrus family that enables them to live at all under such management. Another cause of ill-health is the bad condition the roots often get into through the soil becoming sour. This frequently may be traced to the drainage becoming foul through worms getting into it. To sum up the case—it is with these, as with many other plants that are known to bear a considerable amount of indifferent usage, their ability to stand neglect and adverse conditions is taxed further than they can bear. The usual advice given where Oranges get out of order is to re-pot or tub them, removing as much of the old effete material and diseased roots as can be done, and to replace them in smaller with good sweet soil, and to accommodate them with bottom-heat. In this, as in most other matters, prevention is preferable to cure, and where there are any symptoms of the soil getting out of condition, or the drainage defective, this should immediately be seen to. As a certain consequence, wherever worms are present, the drainage is sure to get foul, and the soil to become soddened. During the time the plants are making their growth, and until the leaves and wood are fully matured, they should be kept in heat, and freely syringed overhead like a Camellia. If the pots are full of roots manure-water will at this time greatly assist them, and if a moderate quantity of soot is added to the liquid it will not only be so unpalatable to the worms as to drive them out, but its effects will also be apparent by the dark healthy green colour it will give to the leaves. If through this time they can be accommodated with a gentle bottom-heat from a moderate bed of tan, or pipes under other plunging material, it will assist them much more than the generality of plants grown either for their flowers or fruit. Where Oranges are cultivated for their fruit they should have bottom-heat for the greatest portion of the year, not alone to impart flavour to it, but likewise to get it to ripen in a reasonable time after flowering. Another essential in the cultivation of the Citrus family is to keep them clear from insects; if scale, to which they are so very subject, is not kept well under, the leaves get so foul through the dirt that sticks in the excrement as to be unable to perform their allotted functions, and have an unsightly appearance.

Soft-wooded Greenhouse Plants.—Chrysanthemums. The strong-rooting, robust nature of these is such that it is quite unnecessary to give them many shifts; plants that were struck about the commencement of the year in small pots and since moved into others, 5 or 6 inches in diameter, will now have filled these with roots. On no account allow them to remain too long before moving them into those in which they are to flower, for if they get at all pot-bound the result will be a loss of the bottom leaves, and a hardened condition of the wood that will effectually prevent their ever attaining the strength they otherwise would. The ease with which these can be grown after a certain fashion, or, more correctly speaking, the difficulty there is in killing them, is the cause of their being so often seen indifferently bloomed, as compared with the condition they can be produced in with a moderate amount of attention, and which they so well deserve, as for decorative purposes, either in the shape of plants or cut flowers, they stand unrivalled through the autumn and on up to Christmas. But to produce the greatest quantity of well-developed flowers the cuttings should be struck early, and not left, as often advised, until spring. Under the latter system the foliage can more easily be kept fresh down to the base, but they will not produce an equal number of flowers. Where a portion are wanted to bloom in a small state—say in 6-inch pots—the best plan is now to plant some out in rich soil in an open situation, leaving a 6-feet space between them every way, and when the flowers have set towards the end of summer, to bend down the shoots and layer them. After they have taken root, sever them from the old plant, and pot them. If they are well attended to, they will not lose a leaf. If the weather is fine, the different varieties of Salvia grown for autumn and winter blooming, should be moved into pots proportionate to the size the plants are required, and stood out-of-doors. They ought to be put into good loam, made moderately, but not too rich, as if too much manure is used for such things at first, the effect is the production of so much growth early in the season as it is afterwards difficult to support in a way to keep the foliage healthy, without using too large pots. Assistance can be better given them later on with manure-water. They should have a good light situation, but be sheltered from strong winds, which are apt to break them, despite sticks and ties. Plunge the pots in ashes, with a sufficienth depth of the material under them to keep out worms. Attend well to stopping the shoots in the first stages, so as to lay the foundation for shapely specimens. *T. Baines, Southgate.*

FLOWER GARDEN.

So long a continuance of cold north-easterly wind, accompanied, as it has been, with frosts almost nightly, having hitherto prevented much progress being made in the planting out of the summer bedders, now that the weather has changed for the better earnest efforts should be put forth to get it accomplished. As remarked in a former Calendar, the way in which the plants are planted has much to do with the after-success of them, and this being the case no pains should be spared to perform the work well; especially see that every plant is well watered previous to being turned out of its pot, for if transferred to the ground in a dry state in that state the ball will remain, and it is obvious that this must deter the growth of the plant. In the absence of rain each bed as planted should have a thorough watering, and if the plants are put out sufficiently thin to admit of it, a surface mulching also of old Mushroom-bed dung or other short manure. Such a mulching is of great service in starting into successful growth Violas, Calceolarias, and Verbenas. For gross-growing sub-tropical plants the advantages of mulching cannot be over-estimated, and these should always be thus treated as soon as planted. Manure as a mulching is sometimes objectionable, particularly if the beds where it is used are near the house, or when the birds scratch it about and cause untidiness; in such cases the best mulchings are cocoa-nut fibre refuse, or tanner's bark fresh from the pits. Short grass, such as the mowings from the lawn, is sometimes used, but I consider it objectionable, as it causes much litter when it gets dry and the particles blow about. If the weather be showery take advantage of it to plant out Asters, Stocks, Zinnias, Phlox Drummondii, and other half-hardy annuals, all of which make a good display in the autumn. The present is also a good time to plant out Antirrhinums, Pentstemons, Wallflowers, and Sweet Williams—classes of plants that when once planted take care of themselves, and ought to be more extensively grown. At the present time there are no border flowers to equal the Pyrethrums, their varied colours and Chrysanthemum-like flowers being simply invaluable for bouquet-making or for glasses in rooms, for which purpose they are well adapted as they keep fresh a long time; large clumps of them throw up an immense number of flower stems, which it will be necessary to tie up to preserve them from injury. Other kinds of herbaceous plants should also have timely attention as to staking and tying. Phloxes, Potentillas, and Asters (Michaelmas Daisies) all now require stakes. There is always, so to speak, a "loop-hole" for consolation in the worst kind of weather, and such has been the fact with reference to the late easterly gales, as they have enabled us to clear shrubbery clumps of weeds by hoeing them; and those who have not taken advantage of this should do so on the first opportunity, as, now that Rhododendrons, &c., are coming into bloom, all else about them should wear a pleasant aspect. *W. Wildsmith, Heckfield.*

FRUIT HOUSES.

Cherries.—These will be ripe now, and be found a valuable acquisition to the dessert. To preserve the fruit in a plump condition for a considerable period onwards it will be necessary to shade a portion of the trees during intense sunshine, particularly where the trees were trained perpendicularly, as in this position its full force quickly operates. Keep a free circulation of air through the house constantly, and damp the floor occasionally, but keep the fruit perfectly dry; and after it is gathered apply the syringe freely over the trees, in order to maintain the foliage in a healthful state until its functions are completed. Stop all growths which are not needed for furnishing the tree at the fifth or sixth joint.

Plums.—As the fruit of these trees occupies considerable more time to ripen than Cherries, if they are not located together, more heat may be tolerated; but it should nevertheless be attended with a slight admission of air at all times. Continue to ply the syringe over the trees until the colouring process begins, using on every occasion clear water—rain-water is best for the purpose. Now stop all exuberant growths, as well as others which are not ripened; and see that watering is attended to with regularity, using in the case of trees in pots some stimulating agent in a mild form on every occasion of watering. *G. T. Miles, Wycombe Abbey.*

KITCHEN GARDEN.

The strong north-east winds, and consequent cold weather that prevailed during the earlier part of the month, has considerably retarded the growth of tender vegetables, and most things are therefore in a more backward condition than is usual at this time of year. Excepting the above-mentioned drawback the drying weather has had a very beneficial effect on most soils, which are now in a more friable, healthy condition than they have been in for a long time. Independent of the destruction of seed-weeds that may be accomplished by a free use of the hoe, the advantages to be derived from frequently stirring the surface of the ground among growing crops can scarcely be overrated, and the above tool should therefore be in almost constant use, insuring, as it does, perfect aeration, at the same time rendering the plants more independent of assistance by way of watering than they otherwise would be. A loose pulverised surface, such as may be produced by a proper use of the hoe, is the best preventive to the escape of moisture from the soil, as it always evaporates at a rapid rate under the strong influence of sun and air, when not intercepted in this way. Root crops should now receive their final thinning, for which work make choice of showery weather, as then they draw much easier, and the rain will act beneficially in settling the soil round the roots of any that may have become disturbed during the operation.

A sowing of Veitch's Autumn Giant Cauliflower should now be made, which, with the necessary protection, will afford a supply from September to Christmas, to be then succeeded by Snow's or some other approved early Broccoli that ought now to be got out in a warm sheltered position. As small heads of these and other kinds are generally preferred to large ones, the ground in which they are to be planted should not be over rich; and to insure a firm compact, sturdy growth, it should be made as solid as possible by treading, or, better still, if it can be arranged for those that have to stand the whole of the winter to follow some light crop just cleared off without fresh digging or loosening the soil. This will have a dwarfing effect on the plants, and cause their stems to become hard and woody, in which condition they will endure almost any amount of frost. Broccoli are too frequently planted in loose rich soil, and much closer together than they should be, whereby they are drawn up and form gross sappy stems and leaves, that are totally unable to endure severe weather. Where ground is at all rich it is a good plan to grow most of the Brassica tribe at wide distances apart, and plant some low-growing summer crop, such as Potatos, between, by which both are considerably benefited, as they get plenty of light and air. Brussels Sprouts and Broccoli particularly do well in this way, and may be grown on the same ground for years by shifting the rows, so as to change the position of the crop each alternate season. The former of these should be got out at once, in order to secure fine large sprouts, which can only be done by affording the plants plenty of room and a long season's growth for their stems to become sufficiently strong to carry them.

Lettuce seed should now be sown in drills where it is intended to grow the plants, so as to save tran-planting during the summer months. Choose a rich, deep soil for the purpose, and a convenient position for supplying them with water, should such a course be necessary, as their quality and size depend very much on the rapidity of their growth, in which they should never be checked. In sowing such small seeds as these, and others of a like character, at this late season, the drills or beds should be previously watered if the soil is at all dry, in order to get them to germinate freely. If sown in small beds, as is generally the case with Cauliflowers, an old mat thrown over the surface will be found of the greatest assistance in maintaining a proper amount of moisture, the escape of which it effectually prevents. Vegetable Marrows that have been standing under temporary shelter so as to be properly hardened, should now be got out in sunny exposed situations, and where access can easily be had to them for the purpose of supplying water, of which when growing freely, they can scarcely have too much. Heaps of decomposing rubbish may with advantage be made use of for growing these on, or any temporary hot-bed, or old manure-heaps may likewise be utilised. In ordinary seasons Gherkin and Ridge Cucumbers do well by sowing the seeds under handlights or *cloches* in soil that has been trenched and heavily manured, provided the position in which they are placed is a warm and well sheltered one. In planting these on ridges of fermenting materials, it is a good plan to sow seeds in each alternate hand-light instead of planting the whole, as the former frequently came stronger and succeed the others in bearing. Tomatos should at once be got out in vacant places between fruit trees on south walls or other sunny positions where they can be afforded the necessary support. The increasing demands for these renders it somewhat difficult to find sufficient room on the walls, and where that is the case a good warm corner of the garden should be chosen in which to plant and train to stakes or neat hurdles so as to augment the supply. If stood on the border in bottomless pots, such as is used for blanching Sea-kale, and kept well supplied with water, they may be thrown into a bearing state much quicker than if allowed to grow in the rampant way they generally do when planted out. A few treated in this way are sure to come in useful for lifting to place under glass to ripen late in the autumn after those in the open are destroyed by frost. *J. Sheppard, Woolverstone Park.*

THE

Gardeners' Chronicle.

SATURDAY, MAY 27, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, May 30 — Royal Aquarium, Westminster, Flower Show (two days). Sale of Orchids, at Stevens' Rooms.
WEDNESDAY, May 31 — Undercliffe Horticultural Society's Show.
THURSDAY, June 1 — Sale of Plants, Orchids, Ferns, &c., at Stevens' Rooms.
FRIDAY, June 2 — Manchester Botanical and Horticultural Society's Exhibition (eight days).

THE activity of the Director and Staff connected with the various departments of the ROYAL GARDENS, KEW, have frequently been commented on, and have of late received fresh illustration in the publication of a thick part, completing the second part of the second volume of the invaluable *Genera Plantarum*, and which brings the work down to the end of the Corollifloral division of Dicotyledons. The first part of the second volume of the *Flora of British India* has also been issued, and a new part of the *Icones Plantarum*. The Flora of Mauritius, by Mr. BAKER, is, we believe complete, and in the hands of the printer. A new fireproof herbarium is in course of construction—not before it was needed; and a new physiological laboratory, which we trust will supply a greatly needed want, approaches completion. On all these matters we shall have occasion to speak hereafter.

In the garden itself the Palm-stove is in course of rearrangement, and though we have to lament the loss by effluxion of time and natural term of a noble Arenga, yet other grand pecimens have been better displayed than heretofore by the judicious removal of a number of ugly, uninteresting deciduous trees. A grand Pandanus at one end of the Palm-stove is a case in point. At the opposite end some noble Cycads have been brought to the front, so as to display their massive trunks, and to allow their majestic crowns of foliage to be well seen over the heads of the lower vegetation. The group of Cycads at the Richmond end of the building is also so striking in aspect, that it is matter for astonishment that gentlemen with conservatory accommodation do not make more use of these plants. The Succulent-house is just now in excellent order. In the grounds during the past winter much has been done in the pleasure-grounds in varying the flat level surface by throwing up undulating mounds, the sides of which are occupied by beds of shrubs and under-shrubs, arranged according to their natural orders. A fine collection of Helianthemums and Cistuses has been got together here, which, when established, may serve to bring these brilliant plants into notice again. In the herbaceous ground, Sarracenia purpurea is flowering in the open air. Of the rockwork we have occasion to speak frequently, as it is usually well stocked with interesting and beautiful plants. We could wish that this were extended, and that the ugly framework intended for shading purposes were removed. In the Temperate-house the Araucarias and Dracænas are very striking objects, and the Camellias are in fine condition.

Attempts are being made also to re-introduce those fine Proteads, which our forefathers apparently cultivated better than we do. An interesting collection of Grevilleas, represented by small flowering plants, is now to be seen in one of the wings of the Temperate-house, and on the opposite bench a number of Eucalypti of various species, kept headed down so as to keep them within moderate dimensions.

One great improvement we must also mention, viz., the lowering of the mound at the end of the broad walk. Previously this obstructed the view of the lake and of the trees and shaft beyond, but by lowering it the effect produced as the visitor comes up the walk, or as he looks across the lake from the direction of the pleasure-ground, has been greatly enhanced. To our thinking a still greater improvement would be effected if the vase were also removed. It is, especially now, too small for its position, and would look better elsewhere.

—— ON the really momentous question of the RIVERS POLLUTION BILL the *Daily News* very opportunely remarks that last year the subject occupied a place in the Queen's Speech, and the Government was warmly congratulated by the mover and seconder of the Address on having taken up a question of such urgent importance. A Bill was introduced, but unfortunately it was not destined to form part of the legislation of the Session. This year the subject was not mentioned at all in the Speech from the Throne, a circumstance to which Lord HARTINGTON made pointed allusion in his remarks on the Address. Mr. DISRAELI, however, stated that if it was any satisfaction to the noble Marquis to know, he might inform him that a measure for preventing the pollution of rivers had been prepared, and would be submitted to Parliament. Between three and four months have elapsed since this announcement was made, and the Bill apparently still remains in the pigeon-hole to which it was consigned last session. The delay has given rise to no little dissatisfaction on both sides of the House, and we understand that some fifty or sixty members of Parliament have sent to the Prime Minister a memorial calling upon him at once to redeem his promise. These hon. gentlemen, it would appear, largely represent constituencies which are injuriously affected by the present lax state of the law with regard to river pollution. It seems strange that this kind of pressure should be necessary in the case of a Bill which more than fifteen months ago figured in the Queen's Speech as a measure of prime necessity.

—— Mr. C. B. PLOWRIGHT, surgeon, of King's Lynn, writes as to the two fungi, FUSISPORIUM SOLANI AND PYTHIUM EQUISETI, that he has repeated Mr. SMITH'S experiments with the first on the old Potato material preserved from last year, and that he has obtained results exactly according to those described and illustrated in our last number. Mr. PLOWRIGHT writes that he has seen the Fusisporium in all stages direct from the resting-spore. Mr. PLOWRIGHT has been equally successful with the latter fungus, Pythium Equiseti. This he has raised artificially on Equisetum arvense by following the method indicated by Mr. SMITH. Mr. PLOWRIGHT says that he now has the threads, oogonia, antheridia, and zoospores of this parasite, exactly as figured and described in our last number, p. 656.

—— We are glad to see that British Horticulturists have recognised the propriety of doing something to commemorate the memory of LOUIS VAN HOUTTE. Not only was the man himself worthy of any tribute we can pay to his memory, but there is a peculiar appropriateness in taking part in such a manifestation, were it only to show that we are not unmindful of the good feeling the Belgian horticulturists are never tired of showing to us. A meeting is called for June 2, at 2 P.M., at the Royal Horticultural Society, for the purpose of giving effect to this intention.

—— The anniversary meeting of the LINNEAN SOCIETY, held on Wednesday last, Professor ALLMAN in the chair, was well attended, among those present being the venerable Ex-President, Mr. BELL. The financial position and general condition of the Society were represented as very satisfactory. The President's address was devoted to a crisp, lucid exposition of the lowest forms of life, so far intermediate between the vegetable and animal kingdoms that it is questionable to which they belong. The life history of several of these organisms was graphically detailed, the President winding up with a glowing peroration on the marvellous nature and properties of protoplasm, a structureless compound of oxygen, carbon, hydrogen, and nitrogen, in which "the great equation of life was observed in its simplest condition." But although life was a property of protoplasm, and manifested in a most vivid and active manner in it, yet, said the President, the psychological phenomena of consciousness and will were not to be considered as properties of protoplasm, but as distinct things. Among the organisms whose life history was happily depicted in a few well chosen sentences, was that of the Æthalium, which spreads in tan beds to the wholesale destruction of plants plunged in it. The President's address will be hereafter published.

—— In our number for October 9 last, Mr. OLLERHEAD, gardener to Sir HENRY PEEK, Bart., Wimbledon House, described a ROSE HURDLE, which he had designed and brought into use, and an illustration of which was then given. We now reproduce the latter (fig. 125), and accompany it on the opposite page with an illustration (fig. 126), prepared from a photograph, of the hurdle in use, feeling certain that such an admirable contrivance has only to be seen to be duly appreciated by Rose growers. Mr. OLLERHEAD describes the sides of the hurdles as being made of ½-inch round iron, 5 feet high, with claws or feet 1 foot long, and braced together at the top and bottom, as shown in the figure, with rods ⅜ inch thick, and 18 inches long. The diamond network is made of No. 9 bright wire, 5 inches apart, the wires being

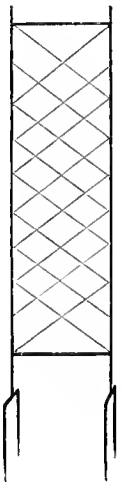


FIG. 125.—OLLERHEAD'S ROSE HURDLE.

twisted around the sides of the hurdles, and where they cross each other they are tied with lacing-wire, so as to make the whole of sufficient strength to resist any pressure in tying strong shoots.

—— We regret to see announced the death of Mr. HENRY KINGSLEY, brother of the late Canon of Westminster. Although best known as a novelist, Mr. KINGSLEY was possessed of good taste in gardening matters, and wrote on them with force and justice.

—— Complaints frequently reach us from cultivators of flowers to the effect that their WALLFLOWERS, recommended as being from a fine dark strain, have come nearly yellow and striped, which is disappointing. It is not a question of the strain of seed so much as one of the time of transplanting. In some parts of the county of Middlesex Wallflowers are largely grown for market purposes, and the practice is to sow the seed in January or early in February, and then to plant out in May between lines of dwarf Peas, French Beans, or any other dwarf crops that can be removed soon after midsummer. As this is invariably a showery time of the year, the plants soon establish themselves, and instead of making a main stem and one or two side branches only, as they will sometimes do when transplanted very late, they make a dwarf and very bushy growth, filling out considerably all round, and if the autumn is mild and fairly dry will come into flower in November. During the winter, in favourable weather, and in spring, these plants yield a large number of flower-heads suitable for bunching for market purposes, and of a rich dark colour. When it is necessary to transplant Wallflowers to the spring garden, it should be done in October or November at the latest, and then with the largest possible balls of

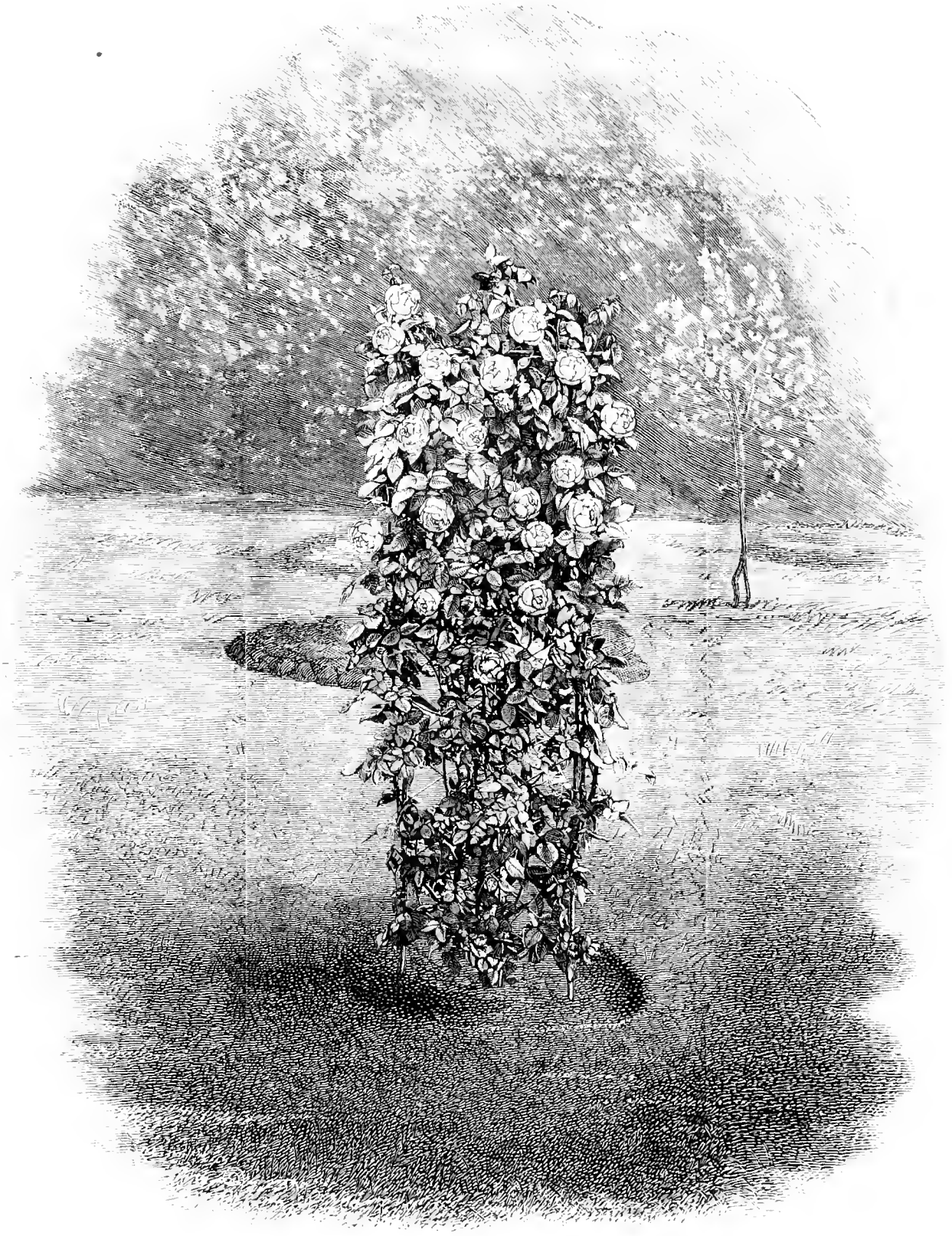


Fig. 126.—An improved support for roses.

earth adhering to the root. When transplanted as late as March, the plants have no chance of rooting into the soil before dry weather sets in, and then it is the flower becomes only partly striped with dark, to the loss of that rich colouring so much esteemed in the Wallflower. At Belvoir Castle, Mr. W. Ingram makes considerable use of the yellow and dark Wallflowers in his spring arrangements, and in order to secure a good mass of roots, when the plants are pricked out from the seed-beds, they are planted in shallow trenches, at the bottom of which ordinary bricks or tiles are placed to prevent the plants throwing down a main tap-root. They thus form excellent balls of roots, and at the time for transplanting the plants are moved to their positions with a great deal of soil adhering to the roots, and do not suffer the least from the change, either in growth or colouring of the flowers. The Wallflower is such a general favourite, and is of so great service in the spring, that no apology is needed for cultural hints in relation to it, though it is such a common flower.

—— The first exploratory campaign for the season of the Worcestershire Naturalists' Field Club took place on Tuesday, May 16. The muster of members was, we understand, not so good as usual for a May meet, but those who did attend spent a

most enjoyable day. The route taken was through the western districts, and soon after four o'clock the party found themselves at the North Malvern Hotel, where they partook of a substantial dinner under the presidency of Mr. EDWIN LEES, who in the course of the evening called attention to the researches that had been lately made in the botany of Worcestershire by several of their members—particularly by the Rev. J. H. THOMPSON and Dr. FRASER. The former observer had found Brassica Cheiranthus, a very local plant, in considerable plenty on a sandy common near Kidderminster, and also Rumex maritimus in great abundance at a neighbouring pond. Both botanists had also noticed hundreds of the littoral plant Erodium maritimum in Habberley Valley and adjacent lanes; while their worthy secretary, Mr. HAYWOOD, had this day brought to the meeting Doronicum Pardalianches, which he had gathered near the old bridge at Powick; and he had also made a fortunate find of some quantity of Ornithogalum nutans in an orchard and lane at Hartlebury. Thus, their flora by sagacious observation was being added to year after year, and he had therefore determined to print a supplement to the volume of the *Botany of Worcestershire*, which was distributed to the members a few years since. This was the more necessary as he had recently seen a work by Mr. H. C. WATSON, entitled *Topographical Botany*, in which all the native plants of Britain were scheduled in counties—a very good plan—but through want of any communication with the botanists of the Club, many plants found in Worcestershire had been omitted, so that this required to be remedied, for they certainly had in their Club as faithful and careful observers as any provincial society could boast. Mr. LEES then referred to the foreign plants that in some curious way had got into this country, whose immigration ought to be noticed. This very spring Mr. THOMPSON had conducted him to waste lands and rubbish heaps near Hoo Mill, in the vicinity of Kidderminster, where some quantity of Alyssum calycinum was growing, and also the alien plants Xanthium spinosum, Polypogon monspeliensis, and Medicago denticulata. The spread of the American Water-weed (Udora canadensis) they all were familiar with, but it was remarkable how it had got into the most remote brooks and ponds, as he had observed the other day.

—— M. CASIMIR DE CANDOLLE has lately published a memoir on the structure and movements of the leaves of DIONÆA MUSCIPULA (Venus' Fly-trap), in which, after alluding to what has been done by other observers, he describes the minute structure of the plant and mode of development of the leaf, and he alludes to the explanations which have been proposed to account for the movements of the leaves in question, and gives the results of his own observations. It must suffice here to give the general conclusions at which M. DE CANDOLLE has arrived:—1. The animal matters absorbed by the leaves are not directly made use of by them, and are not necessary to the development of the Dionæa. 2. The marginal appendages form with the margin itself a "member" distinct from the rest of the leaf, and hence the reason why their movements do not take place simultaneously with those of the two halves of the blade of the leaf. 3. The star-shaped hairs, like the glands, are epidermal productions only, while the parenchyma of the leaf has a share in the development of the sensitive hairs. 4. Stomata exist on both sides of the winged petiole, while on the blade of the leaf they occur on the lower surface only. 5. The anatomical structure, like the development of the different parts of the leaf, favour the hypothesis that the movements of the two halves of the leaf result from variations in the degree of turgescence of the cellular portion of the upper surface of the leaf. 6. The sensitive hairs are conductors, which permit the impressions they receive to act directly on the cellular tissue of the leaf beneath the epidermis.

—— A correspondent of the *Revue Horticole*, writing from Havana, gives some interesting details as to the growth of AGAVES. In Cuba the Agaves flower when they are seven to eight years old, and attain dimensions in proportion to the fertility of the soil in which they grow. If the seeds fall in the chinks of the rocks, the plants remain small; if, on the other hand, the soil is rich, the plants thrive accordingly. In Agave coccinea, americana, and yuccæfolia, and in Fourcroya the seeds germinate within the capsule, fall to the ground, and form a young progeny around the mother plant. If the central flower-stem be destroyed, eighteen or twenty lateral ones are produced. Fasciation also occurs (an instance of which was lately shown at the Linnean Society). We strongly suspect that what M. LACHARME means by the seeds germinating within the capsule are the bulbils or buds, which are so commonly produced on the inflorescence of Fourcroya.

—— Professor MCNAB is delivering a course of four lectures on ELEMENTARY BOTANY, at the Royal College of Science, Dublin. The subjects treated of are "How Plants Feed," "How Carnivorous Plants Feed," "How Plants are Constructed," and "How Plants are Fertilised." Indications of the progress of science are afforded even in this elementary course, *e.g.*, we find a summary of our knowledge as to carnivorous plants, with the distinction between those that absorb putrefying matter and do not digest it—as Utricularia and Sarracenia, while others absorb and digest it, *e.g.*, Drosera, Dionæa, Nepenthes, &c.

—— From the *Gardeners' Monthly* we learn a piece of information which we either did not previously know or had forgotten—that the BOTANIC GARDEN, CAMBRIDGE, U.S., now under the management of Professor SARGENT, was established three-quarters of a century ago by the Massachusetts Society for Promoting Agriculture. The same Society has offered prizes of 3000 dollars for plantations of various trees of not less than 10 acres in extent. The object is to encourage the planting of the large tracts of barren waste now so common in the New England States. The trustees have also reprinted and circulated Professor SARGENT'S *Essay on Tree Culture*, to which we have already called attention.

—— We understand Mr. THOMPSON, who succeeded Mr. E. BENNETT last year in the management of the Hatfield gardens, is leaving, and will be succeeded by the foreman from Linton Park, near Maidstone.

—— At the exhibition of the Reading Horticultural Society on the 18th inst. Messrs. J. STANDISH & Co., Royal Nurseries, Ascot, exhibited some bunches of their EARLY ASCOT FRONTIGNAN GRAPE, one of the latest of the seedlings raised by the late Mr. JOHN STANDISH. It had been cut from an early vinery, where it was growing with Black Hamburgh, and was some days earlier in ripening than that variety. The bunches were of good table size, and nicely furnished with attractive-looking plump berries, which were finely flavoured. Those who have a liking for richly-flavoured Frontignan Grapes cannot fail to be highly pleased with this variety. It was awarded a First-class Certificate of Merit.

—— M. MAX CORNU, a botanist well known for his researches in mycology, has been selected to deliver the course of BOTANICAL LECTURES at the Jardin des Plantes, Paris, in place of the late Professor BRONGNIART.

—— We have received, through the kindness of Colonel WILDER, a report of the last meeting of the AMERICAN POMOLOGICAL SOCIETY, held at Chicago, 1875. The perusal of this report gives us a vivid idea of the magnitude of the Society's operations, and the zeal with which its work is carried on. We know of nothing to approach it in Europe. The report before us contains the summary of the business of the meeting, attended by delegates from most of the States of the Union; various essays on certain points of fruit-tree culture, to some of which we may hereafter refer; and last, not least, a most valuable (for America) catalogue of fruits, authentically named, with their synonyms, a brief description and indication of the value in which the particular fruit is held, as judged by a committee, in the several States, grouped under a northern division, between 42° and 49°, a central division, between 35° and 42°, and a southern division, between 28° and 35° lat.

—— The RETURN of the CHALLENGER from its voyage of three years, during which its officers have been engaged in scientific inquiries in various parts of the world, has been announced. Several memoirs relating to the work of the Expedition have already been published in the *Journals* of the Linnean and other societies, but we presume that a narrative embodying the general results of the expedition will be soon forthcoming. The full details will necessarily demand a long time for their due publication.

—— His Royal Highness the Prince of WALES presided on Wednesday last at Marlborough House over a meeting of Her Majesty's Commissioners for the Exhibition of 1851. The Commissioners resolved to offer to the Government to provide a building for a LIBRARY OF SCIENCE, to be erected between the National History Museum, now in course of construction, and the Science Schools of the Government, which are in active operation. The building will also be devoted to collections of scientific apparatus, and probably to a laboratory for physical research. The Commissioners took into consideration the rapid growth of science schools in the chief provincial towns of the kingdom, and determined to vote a considerable sum for the purpose of enabling successful scholars in provincial schools of science to receive the advantages of the scientific teaching and practical laboratories in the metropolitan institutions and the kindred institutions in our large towns.

—— The annual dinner of the ROYAL AGRICULTURAL BENEVOLENT INSTITUTION was held at Willis' Rooms, on Wednesday evening, under the presidency of Lord CHESHAM. The attendance was rather small. The Chairman, in proposing the toast of the evening, "Prosperity to the Royal Agricultural Benevolent Institution," said that it now had 378 pensioners on its books—viz., 166 men, 35 married people, and 177 widows, involving a cost of nearly £8000. In addition to this they were educating 48 orphans of unfortunate farmers, and teaching them to farm better and, he hoped, more successfully than their fathers, at a cost of something like £1000 per annum. Mr. J. J. MECHI, the founder of the Institute, responded in one of his happy and genial speeches, urging every person present to make the good deeds of the Institution more widely known; and he hoped then they might sometimes see its name in the list of charitable bequests from deceased persons, published weekly in the *Illustrated London News!* The Marquis of HUNTLY subsequently referred to the fact that the Institution was not sufficiently known; and he proposed that a debtor and creditor account for each county, which the Secretary had drawn up for him, should be published. Essex was a county receiving £908 in pensions, and yet it only contributed £750 to their funds. On the other hand, Middlesex had only one pensioner drawing £40 a year, while it contributed considerably over £500 per annum to the Institution. If facts of this nature were only made known, he believed they would obtain many more subscribers. The Secretary announced subscriptions to the amount of nearly £9900.

—— The FLORAL DECORATION at the GUILDHALL on the occasion of the reception of the Prince of WALES was entrusted to Mr. B. S. WILLIAMS, of Holloway, who also supplied the bouquet presented to the Princess, 200 other bouquets for the ladies, and 350 "button-holes" for the gentlemen. The Princess' bouquet consisted principally of Phalænopsis grandiflora, Odontoglossum Alexandræ, Vandas, &c. Between thirty and forty van-loads of decorative plants, such as Tree Ferns, Azaleas, Palms, and Orchids were required on the occasion. The ball-room and the approaches to it were decorated by Mr. WILLS.

—— We noted the following ORCHIDS IN FLOWER in Mr. H. G. ELLIOT'S collection at Downs' Park Road, Clapton:—Cattleya gigas, a fine form with two beautifully coloured flowers; Dendrobium Falconeri, some of the flowers of which measured 5 inches across; Saccolabium præmorsum, S. curvifolium; a fine variety of Phalænopsis grandiflora, P. amabilis; Dendrobium cariniferum; Lycaste Harrisoniæ; a nice variety of Dendrobium eburneum; Cattleya Mossiæ; Dendrobium lituiflorum, three spikes with nearly 100 flowers; Cattleya Mendelii; Cypripedium caudatum with "tails" 2 feet 6 inches long; a well marked variety of Odontoglossum Roezlii; Phalænopsis Luddemanniana, several spikes; Odontoglossum Alexandræ, with a prettily spotted lip; O. Pescatorei with a good spike; and O. citrosmum roseum with a fine spike of its delicate rosy-tinted flowers.

OLD SNEED PARK, NEAR BRISTOL.

Bristol, a city and county in itself, boasting a history of about 2000 years, has become one of our greatest commercial emporiums. Its surroundings are celebrated for an invigorating atmosphere, fine scenery, and delightful views. In the vicinity of Clifton there have sprung up during the last few years many noble mansions, crescents, malls, and terraces, with gardens and pleasure grounds, varying according to requirements, and kept for the most part in a good state of cultivation.

The subject of this notice, Old Sneed Park, is the seat of F. Tagart, Esq. In days gone by it possessed no horticultural pretensions whatever, but during the last few years great changes and improvements have taken place. The old mansion has been thoroughly renovated, and many stately rooms added, not the least noticeable feature being the very handsome *loggia*, with its marble floor and elaborate decorations, supplemented by some charming statuary of several thousand pounds' value.

Situate in a beautifully undulated park, and occupying an unusually elevated position, it commands extensive views, ranging over the famous Leigh woods, along the rocky banks of the tidal river Avon, across a stretch of country to the Bristol Channel, and thence to the hills of South Wales. The pleasure-grounds, although rather contracted, are picturesque; they consist of front and back lawns, with a long terrace walk in gravel. From this upper level a descent of some 20 feet is made by a handsome flight of stone steps to a fine grass walk shaded by a Yew hedge of great age and beauty.

The kitchen garden is very compact, and occupies a good position. It slopes well to the south, and has good drainage. The hothouses form a very striking feature of this establishment, and, being well stocked, constitute a special attraction. Those in the upper garden, six in number, being of the ordinary type, and erected about a year ago, call for no special remark. In the lower garden, however, we find what may be designated a first-class range of houses, recently built by Messrs. J. Weeks & Co., of Chelsea, and which shows the adaptation of their improved form of iron and slate foundations upon an extended scale. For an illustration of this mode of construction we refer to fig. 127, which is a section of one of the vineries. It will be observed that each of the iron standards, having a flange at top and bottom, is placed beneath a mullion, so as to take the direct pressure of weight. The top flange is secured to the wood-plate by means of stout screws, while the bottom one rests on a block of concrete. The slate panels are plain or perforated at pleasure, and act as hit-and-miss or flap ventilators. The advantages claimed for this invention are lightness and elegance of construction, economy of space and cost, great facilities for repairs or removal, and the readiness with which (in cases of vineries and Peach-houses) new borders can be made and old ones renovated.

Judging from the examples before us, we are not inclined to dispute the justness of the claim. The inmates of these houses appear in the best possible condition of health. In the Palm-house there is a fine pair of Latania borbonica, measuring about 12 feet through, also a pair 10 feet high and 7 feet through, a fine plant of Astrocaryum mexicanum, and Seaforthia elegans, 10 feet high and 9 feet through. Among the foliage plants is a handsome specimen of Dipladenia brearleyensis, supposed to be the finest in the country, and which took the 1st prize at the great show of the Bath and West of England Society at Clifton a year or two back. Among the Orchids were Vanda suavis, an excellent plant, with seven long spikes, each having from eight to eleven flowers; Oncidium altissimum, well grown and trained to the roof, was at least 10 feet in length, with 300 flowers just opening; Oncidium Lanceanum bore a 5-feet spike and about eighty flowers; and there were two unusually fine Aerides, together with Dracæna amabilis, D. regina, Croton majesticus, and Dieffenbachia Bowmanni, all well grown.

The Peach-houses and vineries bear witness to the skilful treatment to which they are subject, the various trees and the Vines being in a high state of cultivation.

In the Cucumber-house a constant supply of fine fruit has been cut during the winter, Munro's Duke of Edinburgh being a great favourite here. The forcing of Strawberries, Roses in pots, and French Beans is conducted with much success, and every branch is so well carried out that Mr. Miller is to be congratulated upon the success attending his efforts. He is indefatigable in giving everything his personal attention, and, aided by the liberality of a generous employer, is able to work out his arrangements in an excellent and creditable manner. *C.*

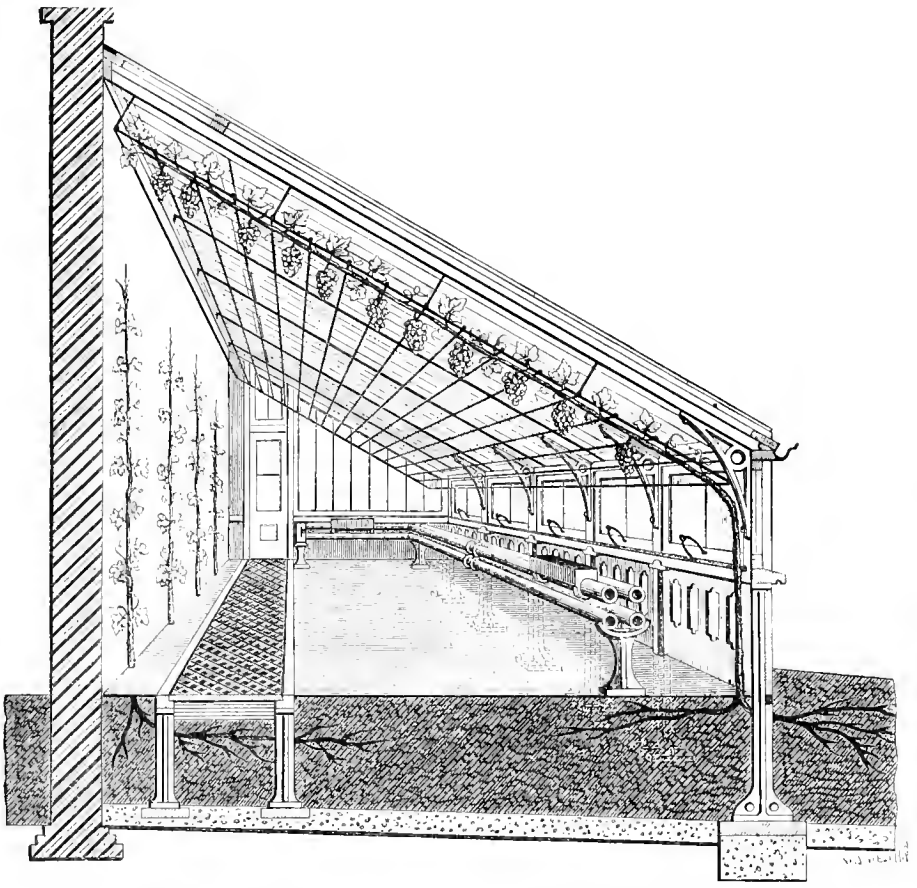


Fig. 127.—VINERY AT OLD SNEED PARK, WITH IRON AND SLATE FOUNDATION.

SCIENTIFIC APPARATUS AT SOUTH KENSINGTON.

We extract from the official catalogue the following particulars relating to some instruments, &c., likely to be of interest to physiologists and scientific horticulturists:—

In the Arithmetical Department, No. 48 is an apparatus for the Sorting or statistical treatment of large numbers of Seeds, &c., to sort them rapidly into classes differing by regular gradations of magnitude, with the view of testing how far the relative numbers in the several classes accord with the results of the law of error or dispersion. (Francis Galton, F.R.S.) It consists of a box, with bars parallel to one another, and having a bevelled edge, fixed horizontally across its top. There is also a frame of other bars, held together like those in a gridiron, that lie on the top of the box between these. Consequently, when the frame is pulled forwards as far as it can go, each of its bars closes along its whole length against one of the fixed bars, and when it is pushed gently back the framework bars separate simultaneously and equally from the fixed bars, and any objects that may have been laid in the bevel between their edges, and are small enough, will drop through. The framework is moved by a screw turned by a ratchet wheel, which is itself moved by the to-and-fro action of a handle between stops, one of which is adjustable at pleasure. Hence every time the handle is worked the space between the bars is widened by a definite space, and all the seeds, &c., whose diameter is greater than the original and less than the final space, will drop through. A tray, divided into compartments, slides beneath the box; it is pushed forward through the space of one compartment before giving a fresh movement to the handle, and thus the seeds become sorted into the different compartments.

In the Chemical Department we find (No. 2741) a specially made balance and other appliances used in an investigation by Messrs. Lawes and Gilbert to determine the amount of water given off by plants during their growth. See *Journal of the Horticultural Society of London*, vol. v., p. 38, 1850, and vol. vi., p. 227, 1851. The experiments were continued to 1858, inclusive. (John Bennet Lawes, Esq., Rothamsted, near St. Albans.) The balance, which was made by Mr. Oertling, of London, was constructed to turn with less than one grain, when loaded with 50 lb., or even more, on each side. This it accomplished, but it was found that the quantity of water given off by the plants during their growth was so great that such accurate weighing was not necessary. In fact, during the whole period of growth, as much as 15 to 20 lb. of water was in some cases given off from a single jar of plants, and during the most active periods of growth as much as from 1500 to 2000 grains per day. In the earlier experiments the vessels in which the plants were grown were made of glass, but afterwards of zinc. There was no opening at the bottom for drainage. The top was closed by a glass plate, firmly cemented to the rim, but having a hole in the centre for the plants to grow through, and another smaller one nearer the side by which to supply weighed quantities of water as needed, but which was, at other times, closed by a cork. To prevent, as far as possible, evaporation from the soil other than through the plant itself, small pieces of glass were laid over the centre hole, close up to the stems of the plants as they grew. Each jar held about 42 lb. of soil. A standard leaden counterpoise was kept in the weight pan, and only the deviations above or below its weight were determined; a set of weights, from 10,000 grains down to one-tenth of a grain, being provided for the purpose. The weighings were generally taken at intervals of ten days, but sometimes at shorter periods.

The list of plants experimented upon included Wheat, Barley, Beans, Peas, Clover, Mangel Wurzel, Turnips, and various evergreen and deciduous trees.

2742. Case of casts of white Silesian Sugar-Beet, illustrating the influence of different manures on the amount of produce, and on the percentages of dry matter and of sugar in the roots. First season of the experiments, 1871.

2743. Table of average results obtained on growing the crop five years in succession on the same land. (John Bennet Lawes, Esq., Rothamsted, near St. Albans.) Experiments conducted on the farm of John Bennet Lawes, Esq., Rothamsted, near St. Albans.

2744. Apparatus used in an investigation by Messrs. Lawes, Gilbert, and Pugh, to determine whether plants assimilate free or uncombined nitrogen; with drawings of some of the plants grown. See *Philosophical Transactions*, Part 2, p. 493, 1859; and *Journal of the Chemical Society*, new series, vol. i.; entire series, vol. xvi., 1863. (John Bennet Lawes, Rothamsted, near St. Albans.) The tap being opened, and water allowed to flow from a raised reservoir into the large stoneware Wolfe's bottle, air passes from it by the small leaden exit tube, through two glass Wolfe's bottles containing sulphuric acid, then through the long tube filled with fragments of pumice saturated with sulphuric acid, and, lastly, through a Wolfe's bottle containing a saturated

solution of ignited carbonate of soda ; and, after being so washed, it enters the glass shade, from which it passes by an exit tube through an eight-bulbed apparatus containing sulphuric acid, by which communication with the unwashed external air is prevented. Entering with the shade at the side opposite to this exit tube is a tube for the supply of water or solutions to the soil, but which is at other times closed. In front of the shade is a bottle connected by a tube with the bottom of the earthenware lute-vessel, for the collection of the condensed water, which is from time to time withdrawn from the bottle by suction, and returned to the soil. The shade enclosing the pot and plant stands in the groove of a specially made, hard-baked, glazed, stoneware lute-vessel, mercury being the luting material. Carbonic acid is supplied as occasion may require, by adding a measured quantity of chlorhydric acid to the bottle containing fragments of marble, the evolved gas being, as will be seen, washed through one of the bottles of sulphuric acid, through the long tube, and through the carbonate of soda solution, before entering the shade. The short leaden pipe, bent and opening downwards externally to the large stoneware bottle, passes nearly to the bottom of it inside, and is a safety tube for the overflow of the water when the vessel is full, and so to prevent it passing into the wash bottles, &c. When full, the cork near the bottom of the stoneware vessel is withdrawn, and the water flows by means of a drain back into a tank, from which it is pumped into the raised reservoir for re-use. It will be observed that, by the arrangement described, the washed air is forced, not aspirated, through the shade, and the pressure being thus the greater within the vessel, the danger of leakage of unwashed air from without inwards is lessened. In 1857 twelve sets of such apparatus were employed, in 1858 a larger number, some with larger lute-vessels and shades, in 1859 six, and in 1860 also six. The whole were arranged side by side in the open air, on stands of brickwork, as indicated.

In the BIOLOGICAL DEPARTMENT, in addition to numerous microscopes and microscopical apparatus from various exhibitors, and carpological specimens from Kew, we note, No. 3851, an apparatus for representing the mechanical principle of the circulation of the sap in plants, exhibited by Professor Jessen, but which we have not yet been able to examine.

No. 3852 is a plan of the Institute of Vegetable Physiology in the University of Breslau, founded in 1866 for the purpose of conducting experiments in vegetable physiology, of undertaking original researches, of preparing the necessary "demonstrations" for the use of the Professor in his lectures, and for the purpose of facilitating the practical instruction of the pupils and the promotion of original research.

3904. Sketch of an apparatus for investigating the influence of temperature on the life of plants and animals. (Dr. W. Velten, Physiologists' I. R. Station for experiments relating to Forests, Vienna.) The apparatus consists of a box of zinc, with double partitions, the upper and sides perpendicular thereto being replaced by parallel glass plates. The space between the partitions must be filled with fluids, while that in the centre is destined for the objects to be experimented on. The whole is surrounded by a wooden cover suited to receive a refrigerator. The box is heated from below, and the temperature remains constant by means of a thermo-regulator brought into connection with the apparatus. At the sides are openings into which the hands should be placed, when encased in india-rubber gloves only, in order to work without great change of temperature in the apparatus itself. By means of the same apparatus the influence of various-coloured light can be determined as well as that of gas, &c., at different degrees of temperature.

3910. A very large case on the south-western staircase, divided into compartments, shows graphically the relative proportions of different species of grasses, &c., in the experimental pasture land at Rothamsted, according to the nature of the manure used. The experiments were made in Mr. Lawes' park, Rothamsted, near St. Albans, commencing in 1856, at which time the character of the herbage was apparently pretty uniform over all the plots, and there were fifty species or more growing together. There are about twenty experimental plots, from a quarter to half an acre each ; two being left continuously without manure, and each of the others receiving its own special manure year after year. Under this varied treatment changes in the flora, so to speak, became apparent even in the first years of the experiments ; and three times since their commencement, at intervals of five years—namely, in 1862, 1867, and 1872, a carefully averaged sample of the produce of each plot has been taken and submitted to careful botanical separation, and the percentage by weight of each species in the mixed herbage determined. Partial separations have also been made in other years. The specimens exhibited in the case show the botanical composition of the herbage on twelve selected plots, in the seventeenth season of the experiments, 1872 ; and the quantities represent the relative proportion by weight in which each species was found in the mixed produce of the plots. The mean produce of hay per acre per annum has ranged on the different plots from about 23 cwt. without manure, to about 64 cwt. on the plot most heavily manured. The number of species found has generally been about fifty on the unmanured plots, and has been reduced to an average of only twenty, and has sometimes been less on the most heavily manured plots. Species belonging to the order Graminaceæ have, on the average, contributed about 62 per cent. of the weight of the mixed herbage grown without manure, about 55 per cent. of that grown by purely mineral manures (that is, without nitrogen), and about 93 per cent. of that grown by the same mineral manures, with a large quantity of ammoniacal salts in addition. Species of the order Leguminosæ have, on the average, contributed about 8 per cent. of the produce without manure, about 26 per cent. of that with purely mineral manures, and less than 0.01 per cent. of that with the mixture of the mineral manures and a large quantity of ammonical salts. Species belonging to various other orders have, on the average, contributed about 30 per cent. of the produce without manure, about 19 per cent. of that with purely mineral manures, and only about 7 per cent. of that with the mixture of the mineral manures and a large amount of ammonical salts. Not only the amount of produce, but the number and description of species developed, have varied very greatly between the extremes here quoted, according to the particular character or combination of manure employed, as is strikingly illustrated by the arrangement of the specimens in the case. (See *Jour. Roy. Ag. Soc. Eng.*, vol. xix., p. 552 ; vol. xx., p. 228 and p. 398 ; vol. xxiv., p. 131. Also, *Jour. Linn. Soc.* (Botany), vol. xv., p. 17. A full report of the results over twenty years is in course of preparation.)

(To be continued.)

Home Correspondence.

Roses in Round Baskets.—It will be unfortunate if the admiration excited by the effect of the round baskets of Maréchal Niel Roses, shown at the first Aquarium exhibition, leads to an attempt being made by any society to adopt this shape of stand for all the classes of a Rose show. Mr. Wills and ourselves thought, when looking at a box of Maréchal Niels shown by us at South Kensington, how well a round basket of this particular Rose would look, and having some hundreds of fine flowers we carried out the idea somewhat carefully. The baskets used were 2 feet wide, ordinary nursery rounds, made without handles, and of rather well selected unpeeled rods, and these we found looked even better than baskets made of peeled rods. They were filled with cocoa-nut fibre raised to a point in the centre, and covered with moss. They held about thirty-six flowers each. Seen from all parts of the hall the effect of the yellow masses was striking. At the second show, where most of the baskets were of flowers of mixed colours, we personally thought the effect not nearly so remarkable, and we drew the conclusion that these baskets must be used only for the classes of "so many flowers of one sort." (A basket of dark, with a ring of light coloured Roses, as exhibited, was a failure in effect.) This leads us to say that for these classes it will be feasible to use baskets, if provided by the society. Twenty-four or thirty-six blooms may be easily transferred to a basket from a box by exhibitors from a distance, while in the short time allowed for arrangement it would be almost impossible to transfer the blooms of, say, the seventy-two varieties, arranging them with the care exhibitors have hitherto exercised. From what we have heard expressed by amateurs and others, any attempt to enforce such an arrangement would, we fear, lead to a thin show, from the absence of some of our leading exhibitors. We throw out these remarks as a caution to societies not hastily, nor without full consideration, to adopt for all classes a novel plan well suited for one or more. *Paul & Son, The "Old" Nurseries, Cheshunt.*

Strawberry Show at Manley Hall, Manchester.—Whether Strawberry shows have ever been held elsewhere I do not know. To my own experience the spectacle of a beautiful display of this fruit at Manley Hall, Manchester, on Friday and Saturday last, was perfectly novel, and at the same time a great treat. The gardens at this celebrated place are maintained in all their beauty and productiveness, as regards high-class fruit, the best descriptions of vegetables, and a sufficiency of choice flowers to keep the great conservatory always gay and delightful, with Arums, &c., for interspersing among the verdure of the two glorious ferneries. But my object is to speak particularly of the Strawberries. It has already been stated in the journals that the Manchester Botanical and Horticultural Society awarded them the first honours at their show at the Old Trafford Gardens on Easter Monday. A 1st prize was certainly well deserved again last week. The plants were all of the variety Vicomtesse Héricart de Thury, 300 in number, and on every plant were from fifteen to thirty ripe Strawberries—an average, say, of over twenty. They were excellently ripened, of good colour, and very neatly balanced amid the rich green leaves by means of concealed pins—a practice, I dare say, common enough with Strawberry cultivators, but very interesting to a non-professional observer, and speaking much for the care and skill bestowed on his work by Mr. Potts. These 300 plants were disposed upon an ascending series of narrow steps or stages placed at the end of the great drawing-room in the Hall, so that all were seen at one view. The general effect was striking ; the atmosphere was filled with the agreeable perfume, and it was very pleasant to numbers of the visitors to find that at the close they would be able to purchase as many as they pleased of these beautiful objects at a very moderate price per pot. The grounds surrounding Manley Hall bid fair this year to attract a constantly increasing number of visitors. The people of Manchester have reason to rejoice that through the liberality of Mr. Ellis Lever such a place is open to them. Messrs. Waterer, of Bagshot, it is now well known, will this year hold their great annual exhibition of Rhododendrons in the Manley Hall grounds ; the plants are all in their places, and look most promising. *Visitor.*

The Rose Shows and the Late Season.—The ungenial weather of the past few weeks has rendered it quite impossible for the promoters of early exhibitions to anticipate the result of their season's arrangements with anything like complacency or pleasure. It is not unfrequently the case that some of the larger metropolitan shows are much too early in the season for provincial competitors, but on all hands it is admitted that this year the Crystal Palace show is at least three weeks earlier than it should be, that is, if it is desired that it should be anything like a success. We believe the Birmingham Rose Show to be the best of any in the country, and that is invariably fixed fully three weeks after the date this year appointed for the Palace show. It is quite true that these early appointments may suit those large Rose growers who depend for their early blooms upon specimen plants grown under glass, but we think it only fair that those who cut their blooms from plants grown in the open ground, with no protection but the "canopy of heaven" should, at least, be entitled to some consideration as well, inasmuch as their productions are indisputably truer examples of what Nature herself can do without unnecessary coaxing or coercion by man. *James Hain, Hereford.*

The Weather and the Fruit Crops.—At last the wind has veered round out of the east, and last night we had nice rain from the south-west. To-day the wind is due west, and we have had several refreshing showers. Seldom or never have they been more welcome. A month or more of easterly winds has dried the life almost out of many plants and flowers. Vegetables and fruits also are now rejoicing in the rain and welcome change of weather. Apricots have suffered severely. We have managed to pull a crop through with glass copings and protections of boughs. Peaches and Nectarines have set well. Plums seem a thin set in some instances, also there was little bloom. Apples a fair crop. Pears generally thin : there was but little blossom, and consequently could only be a thin set. Cherries a fine bloom, and set. Small fruits varied ; in many places the Gooseberries and Currants were much frozen and nearly gone—where they have escaped there is a full crop. Strawberries here have suffered much from the wet and the frost, and the bloom is not an average. *D. T. Fish.*

Dionæa Muscipula (Venus' Fly-trap).—Some plants of this were received here last year from North Carolina, which were packed in sphagnum moss, and attached to each plant was a small portion of sandy peat. They were potted in the same kind of soil and slightly watered until they began to grow, when they were removed to a warm vinery. Not having a stove here, and the winter at hand, our only alternative was to lower the temperature and reduce the moisture they had been subject to during the summer months, and by means of which they were preserved alive in winter. At present they are growing and flowering in a warm vinery close to the glass, with the addition of a hand-light over them, which is lifted up occasionally, but, notwithstanding their exposure, no insect or creeping thing has entered their traps. Leaf feeders they may be, but it is not indispensable to their existence that insects should be entrapped by them. *John Cail, Inverary Gardens.*

The Almond Tree Controversy.—In order not to be outdone on the score of politeness, I have to thank Mr. Leo Grindon for his good advice, as he has thanked me for pointing out his error (p. 664). Good advice should always be well received, no matter from what quarter it comes ; indeed I have begun to read up for a thorough practical article for *Gardeners' Chronicle, entre nous,* on the Fig. Now as we read that Adam, the first of gardeners, named all the beasts, we may infer, without proof, that he was well up in plants, at all events that he knew the Fig, and although translators have cavilled about the manufactured article, whether the Fig leaves were made into aprons or breeches, the Fig tree itself was never in dispute. There is a translation of the Old Testament called the "Breeches Bible," where we read "They sewed Fig leaves and made themselves breeches." If I were allowed to suggest a theme for Mr. Grindon's studies, as he has so playfully done to me, I would call his attention to that black-letter copy, not in "petulance, but the reverse." Mr. Grindon forgets the great

praise that we all give him for his excellent articles, and it is only in the case of "not proven" that a friendly neighbour steps in to save the character of a brother contributor. As regards myself I feel "put to silence," but I cannot be held responsible for what my erring brother "Ebor" may break out into. "What will my Lady O'Shaughnessy say?" but should he, as Byron has it, "smear the page with gall instead of honey," all I can say is—don't give him money. In conclusion, one word: the botany of Eden is in your line, my kind friend—use it freely, but leave the Fig to me. I had almost forgotten the advice about the biography that you wished me to read; I will attend to that too, beginning with Lady Mary, and coming down to the boyhood of men of our time. *F.*

Influence of Foreign Pollen on the Progeny of Plants.—In your issue for November 28, 1874, p. 689, you kindly allowed me to describe some results obtained, as I thought, by the application of pollen taken from other plants, and applied to flowers which had already been fertilised by their own pollen. I also at the same time detailed some attempts made to fertilise blooms of the blue-flowered Geranium pratense with the pollen of various variegated varieties of the Zonal Pelargonium. This was done, not so much in expectation of obtaining a cross between the two genera (which I had but little hope of being likely to accomplish), as to illustrate an idea which I entertained, viz., that the progeny of some plants might be to some extent influenced (without, however, entailing upon it what appears to be the inevitable inheritance of hybridity, namely, sterility) by the use of pollen furnished by plants between which and the intended seed-bearing plant there did not exist the necessary degree of affinity required to be likely to lead to the production of a cross, or hybrid production between them. On this account I used exclusively the pollen of variegated Zonal Pelargoniums, thinking that, should the condition of variegation be in any instance induced in the offspring it would to some extent warrant the assumption of the pollen applied having had the effect of in some degree feeding or nourishing the ovules. As was stated in the communication alluded to of November, 1874, this experiment did not lead to any appreciable result; but a subsequent attempt has, as the accompanying leaves will show, been more conclusive as to the feasibility of my premises, as I have now secured several plants of the Geranium pratense, with variegated or golden margined foliage, as well as some with bronzy coloured leaves, the pollen of bronze zonal varieties of the Pelargonium having also been applied to some of the stigmas of the Geranium blooms. I am now anxious to ascertain if variegation has ever before been observed in the foliage of Geranium pratense, for if this has been the case it will, of course, detract considerably from the importance or value of this experiment, while, on the other hand, if this condition has never before been observed in the foliage of this plant, it will then be no more than reasonable to suppose that the application of pollen from variegated Pelargoniums has in this instance been the cause of its development. The plants in question have not as yet flowered, and their doing so will of course be watched with some degree of interest, as it is possible that some diversity in the colour, form, &c., of the flowers may also be developed. Care will also be taken to ascertain if the variegated plants will produce fertile seeds or otherwise. The idea of obtaining a variety of Pelargonium with blue flowers has generally been regarded as something so utopian or chimerical as hardly deserving of serious consideration, and, although admitted to be a desideratum, is, nevertheless, considered as one very unlikely to be realised. If, however, the condition of variegation can be induced by the agency of pollen from a distinct but kindred genus of plants, it does not appear to be so very unreasonable to suppose that the blue element contained in the flowers of Geranium pratense, and possibly some other plants, may by a similar process be conveyed to the flowers of some of our Zonal Pelargoniums. It is possible that I may ere long be able to show what may justly be considered as a step in this direction; but I had better not yield to the pardonable weakness of "counting my chickens before they are hatched"—but *dum spiro spero. P. Grieve, Culford, Bury St. Edmunds.* [The appearance of the leaves sent was such as to justify the inference that a true cross had been effected, the leaves having the form of those of G. pratense, while the colour was that of a yellow-leaved Pelargonium. Eds.]

Newton's Improved System of Ventilating.—An interesting experiment in ventilating is now being carried out in connection with Messrs. Barr & Sugden's roof conservatory in King Street, Covent Garden. It will be remembered that when Mr. Joseph Newton described this structure in our columns last year (vol. iv., p. 781), he stated that Taylor's ventilating apparatus had been fixed in connection with the hot-water pipes, and by that means either moist or dry air, according to the requirements of the inmates, could be constantly and efficiently supplied. Taylor's apparatus consists of long, shallow, and partially covered zinc trays, bent at the bottom to fit on the pipes, and through which the fresh air has to pass before it gets into the house. If a dry heat only is required, no water is put in the trays, and if the pipes are warm, so is the air in its passage warmed in proportion. If a moist atmosphere is required, water is poured into the tray, and the air not only becomes warmed, but laden with moisture. Theoretically this arrangement seemed to be a happy thought, but in practice it was not found to work well. In the first place the trays do not hold a sufficiently large volume of water, and consequently, unless closely watched, the water soon evaporates. Secondly, from so small a volume of water being used it becomes overheated, and the air passing over it carries into the house too much moisture, and so causes drip; and, thirdly, there is no means of regulating the supply. Mr. Newton, who has long paid a considerable amount of attention to the subject of heating and ventilation, was commissioned by Mr. Barr to take the matter in hand with a view to effecting an improvement on Taylor's system, the result being the apparatus shown in fig. 128. This consists of a galvanised iron water-box, 4 feet long, 12 inches wide, and 6 inches deep, with an air regulator at one end and a tray about 3 inches deep on the top. The addition of this tray was an afterthought, but when filled with cocoa-nut fibre it is found a very useful contrivance for supplying bottom-heat to pots of seeds which are being tested for their germinating powers, and under certain circumstances is useful also for propagating cuttings. This part of the contrivance need not be further alluded to, as it does not affect the principle of ventilating. Now the advantage of this water-box over Taylor's is that it holds a much greater body of water, and so the risk of over-heating is lessened; and this possibility is still further reduced by not placing the box directly on to the pipes, which Mr. Newton has not done in this case. Then, again, it requires much

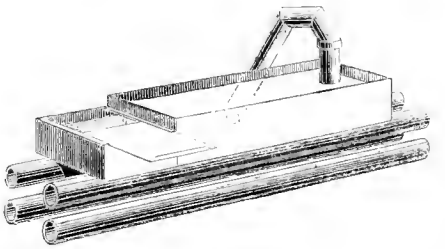


Fig. 128.—Newton's ventilating apparatus.

less attention, and by the aid of the regulator the supply of either air or moisture is completely under command, and there is no drip. Other advantages claimed by Mr. Newton are (1), the purifying of the air in its passage over the water, which, being the heavier body, attracts the floating impurities in the air; (2), that it is portable, and with little trouble can be fixed anywhere, and used anywhere where hot-water pipes are employed; (3), that by its use almost any climate can be imitated; (4), in winter sufficient moisture may be circulated through the atmosphere to enable the use of the syringe to be dispensed with; (5), in summer it can be used as a cooling ventilator; and (6), that it adds to the heating-power of the pipes employed.

Sending Plants by Post.—In a letter received to-day from M. Jean Sisley, of Lyons, France, forwarding the enclosed circular sent to him, and signed by Mr. Tilley, the Post-office Secretary, on which is written the addendum, "Plants cannot be forwarded," M. Sisley says:—"I suppose it refers to some Zonal Pelargoniums." This is something new—"Plants cannot be forwarded," when it is daily done in England, France, and everywhere. I hope that you will protest against this *abus d'autorité*. I have had once to protest against the same fact here, and then the matter was remedied. As the same box, with the like kind of contents packed in a similar manner, has frequently passed between Stamford and Lyons, and *vice versâ*, without interruption hitherto, it seems singular that ultimately an official should be found to condemn it, and the Secretary thereupon to fix his mandate that "Plants cannot be forwarded." I have searched through the current edition of the *British Postal Guide*, and can find no direct prohibition of plants. If now prohibited the matter ought not to be left in doubt, and the next edition should show the prohibition clearly. The contents of the package consisted of four small Pelargoniums, packed in a round-ended tin box. The plants had round the roots a little very slightly moistened moss, the moisture being less than usual, as the postage paid, 6*d.*, was less than the usuaul charge for transmission of the package on previous occasions. As the matter is of some importance to the botanic and horticultural world you may, perhaps, deem it worthy of notification. To my knowledge, many thousands of plants similarly packed have passed without interruption. Unfortunately there is no remunerative redress in this country, although this unreliability on the part of the officers of the department is costly and annoying to the public, and must affect the business of the office. Perhaps the official who condemned the package was more choleric or tender-skinned than others of his brethren. *B.* [The only instances we know in practice of refusal to forward such packages by post have been those in which the packing has been carelessly done, so that other letters might have been injured. Eds.]

Orchids in Flower at Moat Mount.—The following Orchids are now (May 22) in flower in Mr. Serjeant Cox's Orchid flower-house:—

Cattleya Mossiæ
,, delicata
,, Leopoldi
,, intermedia
,, Forbesii
Lælia purpurata
,, grandis
,, cinnabarina
Brassia maculata
Epidendrum species
,, vitellinum
,, crassifolium majus
Vanda suavis
,, cristata
,, tricolor
Saccolabium curvifolium
,, ampullaceum
Maxillaria sanguinea
,, tenuifolia
Mormodes species
Cypripedium niveum
,, longifolium
,, Hookeriæ
,, barbatum
Dendrobium albo-sanguineum
,, densiflorum
,, marmoratum
,, Dayanum
,, thyrsiflorum
,, Paxtoni
,, japonicum
,, crystallinum
,, Dalhousianum
,, fimbriatum oculatum
,, transparens
Dendrochilum longifolium
Oncidium flexuosum
,, sphacelatum
,, obryzatum
,, barbatum
,, species
,, sarcodes (true)
,, cucullatum grandiflorum
Calanthe veratrifolia
,, Masuca
Ionopsis paniculata
Trichopilia crispa
,, marginata
,, coccinea
Sobralia macrantha (twelve flowers)
Phalænopsis Luddemanniana
Odontoglossum Alexandræ
,, Andersoni
,, cordatum
,, hystrix
,, Roezlii
,, Ehrenbergii
,, gloriosum
,, maculatum
,, hastilabium
,, nubigenum candidulum
,, luteo-purpureum
Warscewiczia discolor
,, alba
Masdevallia caudata
,, Lindeni
Phajus grandifolius
,, Wallichii
Lycaste Skinneri
,, aromatica
Pescatorea cerina
Utricularia montana

Xanthium spinosum: Canine Madness.—In the *Journal des Débats* M. Henri de Parville recently mentioned that a physician of Podolia (S.W. Russia) had announced the discovery of a specific remedy for canine hydrophobia in Xanthium spinosum, which had effected indisputable cures. He was to send samples of the plant to Paris for trial there. There have been so many supposed specifics for canine madness that a new one, however well authenticated, is sure to be coldly received. Nevertheless, the discovery of an efficient remedy would be so great a blessing to humanity that, as no chance of finding it should be neglected, the *Gardeners' Chronicle* may think fit to take note of this new antidote, which seems to have saved many lives, in Podolia at least. *E. S. D.* [We are afraid "seems" is still the best word to use in this case. Eds.]

Mignonette Pepper (see p. 670).—This is so called because it is ground coarsely into morsels about the size of a Mignonette seed. It can be bought at Cobbett's, in Pall Mall, and probably of other good grocers. I know nothing of Pabrika Pepper. *J. R. H.*

—— Mignonette is an old-fashioned French term for ordinary pepper, ground a little more coarsely than usual, to be eaten with oysters, or to season *ragoûts*, and is not applied to any different species or substitute for pepper. "Mignonette" means simply "little favourite;" we apply it to the sweet smelling plant, which the French, with greater precision, call Reseda. And as we know no Mignonette but that, confusion is apt to arise when the name is given to anything else, although it might be with equal fitness conferred on one of the Prince of Wales' baby elephants. *E. S. D.*

Saponaria calabrica for Spring Bedding.—Perhaps some of your readers may not be aware that one of the prettiest flower garden plants for spring decoration, namely, Saponaria calabrica, is quite hardy. I sow in a bed the latter end of August and plant out as soon as the beds are clear of summer bedding, and from the middle of April until cleared away to make room for the more tender plants it continues one mass of bloom. *W. A. Emery, Kilkea Castle Gardens, Maryney.*

Wild Flowers.—Why are not some of our native wild flowers more extensively cultivated in garden ground? The common Speedwell, for example, would look lovely as a border plant grown in masses. Most botanical works say "it flowers in June and

July," but the hedge-banks near Liss are in some spots blue with its bright blossoms now, May 19, and I picked a few sprays of it in April, but it is so very fragile when cut that it does not add to the lasting beauty of a wild nosegay. The Red Catchfly, or as some call it, the Campion, is another very striking plant, and it looks exceedingly well in a garden. It is one of our brightest spring wild flowers, unsurpassed by its relative, Ragged Robin, which requires rather moister soil than is usually to be found under cultivation to show it off to advantage. The Dandelion is in truth a very common plant :

> "How many plants, we call them weeds,
> Against our wishes grow ;"

but this is one I could wish to see cultivated in gardens for very many reasons, since it is both useful and ornamental : it comes into bloom in March and continues until late in the autumn, from the middle of April until the end of May its bright yellow blossoms would form a striking object in the border. But it will probably be urged against the cultivation of this plant that its means of propagation are so various, the seeds being wafted far and wide by the wind, and the root so full of life—the least part of it giving rise to a new plant—that when grown in gardens it usually becomes troublesome ; still, despite this objection, I am very partial to the *Dent du lion*. Its valuable qualities are better recognised by the French than by us ; they blanch its leaves and use it as a salad, make sandwiches of it, and dry the root as a substitute for coffee. Germans boil the latter and serve it like salsafy. Various other spring wild flowers could be mentioned did space admit that would considerably add to the beauty of our gardens, and that certainly would, if they were foreigners, command a high price and be eagerly sought after. *Helen E. Watney.*

Flowering Echeverias —The secunda section of the genus Echeveria furnishes a quantity of useful bloom for cutting at this time of the year, as the first bloom is invariably the best and strongest, although flowers will be produced more or less all through the summer. In length of stem, stoutness, durability, and gracefulness there are special features that render these Echeveria blooms peculiarly attractive and useful, and they possess still farther the recommendation that they can be produced in great quantity in a moderate space and in a cool temperature. I find the variety known as secunda major to be most productive of flower, not only producing more stems than other kinds, but also in every case there are two racemes to each stem, whilst others only produce one. Secunda major is a robust kind and hardier than secunda glauca, but is not so effective for bedding, as it is deficient in colour. Curiously enough, whilst I have secunda, secunda major, secunda glauca, and secunda minima in full bloom, I have not a single flower or evidence of one upon the strong plants of secunda globosa, a variety that has the same glaucous hue as secunda glauca, but has broader leaves and flatter habit, and is evidently a capital bedding kind. If this variety should at all times display less tendency to flower than other sorts of the same section, it should render it popular with connoisseurs in summer bedding. *D.*

Precocious Shoot of Silver Fir.—I beg to enclose a sprig from an abnormal growth upon a branch of a Silver Fir standing in a churchyard in Sussex. On May 13 the young shoots were an inch or two long while the buds of the tree had not burst. The leaflets of some of the shoots are arranged as symmetrically round the stem as are those of P. cephalonica or P. Pinsapo, and the last year's growth is entirely bare ; in short the peculiarities are so great that the rector supposed it to be a different species from the parent tree. *H. K.*

The Twentieth of May.—This date seems to be associated in the popular mind either with some doubtful weather or inevitable change. For many years we have had good reason to regard May 20 with dread, because we have seen and felt the effects of the sharp frosts with which its dawn has been ushered in. On the past 20th we had a frost sharp enough to produce ice the thickness of a shilling ; still the effects generally, owing to the dry, active air that prevailed, were not disastrous, such tender things as Potatos escaping with little injury. In this neighbourhood weatherwise people have for some time past declared that there would be no improved change in the weather until after the 20th. Singularly enough the afternoon of that day proved to be exceedingly warm, and was followed by a change of wind. And now on the 22d we at last have the welcome and reviving showers. No doubt for this season all further danger from frost is past, and we may at length hope that summer is at hand. *A. D.* [On the east side of London on the evening of the 22d a very heavy hailstorm was experienced instead of a welcome shower. Eds.]

—— The night of the 19th was very severe, and on the morning of the 20th the ice was as thick as a halfcrown piece in tubs of water, and the Lucerne and Rhubarb were lying flat on the ground, and my Potatos felt it very much ; in fact, my crops suffered more on that night than on any other night this month. *C. Osman, Sutton.*

Odontoglossum vexillarium.—This rare and beautiful Odontoglossum, which has been mentioned in the gardening periodicals at different times by Professor Reichenbach and others, may be grown successfully in the Cattleya-house (contrary to Mr. Richards' rule, as laid down in *Gardeners' Chronicle* of this month, p. 598). A splendid example is to be seen in Mr. Michael's collection with three spikes from one pseudobulb, with nine, eight, and seven well developed buds on each spike, which will be open in a day or two. Also a fine growth of Dendrobium Bensonæ, with thirty-six magnificent flowers. This plant was grown in the vinery last season without any shading, standing near the glass on the front stage. *F. Newman.*

Narcissus biflorus.—I send you herewith a few cut spikes of Narcissus biflorus ; this is found growing wild near Colchester, the locality is known only to three persons—the owner of the estate on which it is found, a reverend gentleman, and myself, and for obvious reasons the gentleman owning the estate does not wish the exact locality made known, for on another point of his estate he had at one time a great quantity of Osmunda regalis luxuriating which has now dwindled down to perhaps fifty specimens through as he expressed it, his being "too garrulous." But to return to the Narcissus biflorus : it is very evident from the fact that it extends in patches over 20 to 30 acres of ground, that it has not escaped from a garden, and again there are no traces of there ever having been any garden or houses in the neighbourhood where it might have been grown. Smith in his *English Flora* mentions it as having been found near Hornsey Church, at Thorne in Kent, and about Berkhamstead. I shall be glad to learn from any of your readers if it is still found there or elsewhere, and if we may not consider this a native plant? *Fred. H., Colchester.* [It is not considered an aboriginal native by any of our authorities. Eds.]

Evergreen Oak.—I send a specimen of the foliage of a self-sown Oak, now about 15 feet high, and preserving its leaves till the present time. A month ago there was hardly a withered leaf, the whole was as green as the piece herewith sent ; it is growing in a plantation of Cedars and other ornamental trees. It was planted about twenty-five years ago, and is a perfectly healthy tree. *Original Subscriber.* [Q. sessiliflora often keeps its leaves in this manner. Eds.]

The Squares of London.—May I ask you to give me a corner of your journal to point out what an extraordinary condition one of the gardens is in, just at this time, belonging to Euston Square? The garden of which I am now speaking is the one on the left-hand side of the Euston Road, in going from King's Cross to the Hampstead Road, and near to Gordon and Tavistock Squares. I had occasion the other day to pass through Euston Square, and I must say that I was not a little astonished to find it in such an extremely untidy state, presenting more the appearance of a wilderness than anything else I can compare it to. This square is filled with heaps of gravel, rubbish, and I know not what besides ; here and there a broken garden seat may be seen, and the iron railings and gates surrounding the garden are very much broken. It appears to me to be a most strange thing how a place of this description can be tolerated and be permitted to exist in close proximity to so good a neighbourhood. It presents a remarkably striking contrast to the garden on the opposite side of the square, which is kept in beautiful order. One of the gardens in Cadogan Place, Sloane Street, I found in a similar condition to the one I have just referred to in another part of the metropolis. *Nathaniel Waterall, London, May* 18. [The gardens on the Thames Embankment and in Leicester Square are also not creditable to those who have the management. Eds.]

Slugs : a Raft for Aquatics.—Here are two gardening notions worth, I think, bringing before your readers. Where herbaceous plants increase slugs seem to follow them : they troubled us here. At first we set Cabbage leaves as traps, these diverted them from the plants, and many remained to be killed in the morning ; but some plants were overlooked, and so unprotected. So I thought of a suggestion made to me some years ago by the Rev. H. Ewbank, of Ryde, that zinc collars would keep off the enemy. Messrs. Braby & Co., Fitzroy Works, Euston Road, cut me strips of many shapes and many depths. We find that a strip 4 inches deep of "9½ hole" pierced zinc is an effectual protection : it can be pierced by galvanised iron wire. Notion No. 2 is to utilise an open water-tank ; we have a large one at the cottage garden, and have constructed a raft which rises and falls with the water: on this are placed pans of Bog Bean and Saracenia purpurea, and as they look promising we shall try a number of marsh and water plants. *George F. Wilson.*

Growing Bedding Pelargoniums Without Pots.—I took a large quantity of cuttings in September and kept them in pots and boxes until March, when I had some turf cut and put in a long vinery. We cut the turves up into small pieces, about 2½ inches long, 2 inches wide, and 1½ inch thick. We kept the grass side down, and cut the turves the long way, but not quite through, then laid the roots in the long way, and pressed the turf together as tight as possible. The turves must be very damp, and then the balls will keep together. They can be stored anywhere, just the same as pots, but I found that they did exceedingly well on the floor of the vinery, where there was plenty of moisture and heat. I only kept them in the vinery ten days, and they were well established. My man and myself could plant one thousand of these a day. The plan has been admired by every one that has seen them growing. I do not want to do away with pots, but I always found plenty of other things for pots in the spring. *E. R. Webber.*

The Poultry Yard.—I have read "O.'s" paper on this subject with much attention, having always been under the impression, until I saw his assertion to the contrary, that the hen, or other sitting bird, always turned the eggs (natural instinct inducing them to do so). I have had a great deal to do in a small way with the rearing of poultry, and I never thought of interfering with the feathered *maters*. A good sitting hen, in the general acceptation of the word, will leave her nest daily until within the last forty-eight hours or so of hatching, and then I have known hens, when taken off the nest by force, sulk and forsake the eggs entirely. The best and strongest chickens I have ever seen are those hatched in a perfectly natural state. I have known hens make a nest in a field or garden, and bring home fifteen or sixteen healthy chicks, and this proved to me early in my poultry experiences that the less they are interfered with during the period of incubation the better, provided the poultry house and yard were kept clean and proper food supplied. *H. E. Watney.*

Foreign Correspondence.

Royal Botanic Garden, Singapore.—The garden just now is very gay, the wet weather we have been experiencing for the last few days having started everything into fresh life and vigour after the recent drought of two months. The Orchids, in the open ground especially, are very fine. First and foremost comes Vanda Hookeri, large clumps of which are complete masses of bloom ; V. teres is not so free blooming with us, but the individual flowers are much larger and more showy. On one clump of Renanthera arachnies I counted yesterday over 200 panicles just ready to burst into bloom, and this is far surpassed by another clump near it. A specimen of R. coccinea is also in bloom, and a specimen with panicles of small brick-red flowers. Nothing seems to suit these plants like the full blaze of the sun, which also holds good with the Arundinas, Grammatophyllum speciosum, Bromheadia palustris, and Paxtonia rosea. Saccolabium violaceum and Harrisonæ have been very gay on the trees where they have been established, and also numerous specimens of Phalænopsis grandiflora var. aurea. The last are not quite so satisfactory as might be wished, as, although they make an immense quantity of roots, the leaves seem to get beautifully less. The plan I have found to succeed best with then is to place four or five plants in a basket made of the Cocoa-nut husk ; the show we have now with about 200 of these is magnificent. With us Phalænopsids are represented in bloom by P. amabilis, P. grandiflora and its variety aurea, P. Schilleriana, P. Luddemanniana, P. rosea, P. sumatrana, and P. violacea ; P. Lowii does not succeed well with us. I have recently received a nice lot of P. sumatrana and P. violacea from Palembang ; the foliage of these two are almost exactly alike—so much so, in fact, that the Malays are unable to distinguish any difference ; but they differ considerably in the scape, which in P. sumatrana is almost terete, while in P. violacea it is flattened considerably. Although a shy bloomer I think it one of the prettiest of the genus, the bright reddish-violet of the base of the sepals and tepals being so very distinct from any of the other species. Perhaps I have said enough to set the Orchid hunters

on its track, and shall be calling down the anathemas of Professor Reichenbach. Amongst other Orchids at present in bloom I may mention Aerides suavissimum and A. quinquevulnerum, Bromheadia palustris, Calanthe veratrifolia, Coelogyne cinnamomea, C. testacea, C. Cummingii, C. longifolia, C. Lowii, and C. ochracea; Cypripedium niveum, Stonei, Hookeriæ, and Lowii; Dendrobium crumenatum, D. cretaceum, D. Dayanum, D. Veitchianum, D. Pierardi, D. macranthum, D. sanguinolentum, D. Farmeri, and D. secundum; Eria flava, E. velutina, and E. multiflora, Eulophia graminea, Grammatophyllum speciosum, Oncidium flexuosum, Saccolabium Huttoni, S. Harrisonianum and its variety violaceum, Vanda gigantea and V. limbata.

Several others are also showing bloom, as two or three plants of Renanthera Lowii and Saccolabium Cruikshankii. A plant of R. Lowii was in bloom here in November last with eight racemes, four of which had over forty flowers each. Saccolabium Cruikshankii I think is the prettiest of the genus; I shall not soon forget the first time I saw it in bloom on my arrival here last July. Our climate seems too hot for such Dendrobes as Bensonæ, Parishii, Boxalli, and Falconeri, as they get gradually less until they refuse to break. I notice, in a recent issue of an English contemporary, some remarks about the Amherstia nobilis in Burmah. We have here between twenty and thirty specimens of this gorgeous plant, which are now beautifully in bloom; we find its propagation very easy by the following method:—We cut up a Bamboo into lengths, so that the partition at the joint will serve for the bottom, and then split it down on one side, using the other side as a kind of hinge, and cut a place in the bottom through which to pass the branch. The branch is first notched in the same way as for layering, and inserted into the Bamboo, which is closed, tied round, and filled with light sandy soil, and stakes are driven into the ground to support it. In about two months the Bamboo pot will be filled with roots, when it may be removed with the branch and both planted together. It also seeds pretty freely with us.

The Bougainvilleas, especially B. glabra, are also very fine just now, as also are large specimens of Jonesia Asoca, J. declinata, Spathodea campanulata, Poinciana regia, P. pulcherrima, and Brownea coccinea. A specimen of Martinezia caryotæfolia, about 4 feet high, was attacked by ants about eight months since, which completely destroyed the central bud, but I was much surprised to see three fine buds break from near the top, all of which have now developed into branches nearly a foot in length. The borders of the jungle in most places are very gay just now with the beautiful Ixora Griffithii, and other members of the same genus. I hope at some future time to send you an account of one of the most beautiful gardens in the Straits Settlements, belonging to the Honourable Ho Ah Kay Whampoa, C.M.G.

H. J. Murton, Royal Botanic Gardens, Singapore, S.S., April 19.

Philadelphia Exhibition: *Horticultural Department: Ornamental Trees and Shrubs.*—In this section there are two English exhibitors—Messrs. Veitch & Sons, of Chelsea, and Mr. A. Waterer, of Knap Hill. Messrs. Veitch contribute a fine miscellaneous group of Coniferæ, Rhododendrons, and Hollies, amongst which are some well grown specimens; the Rhododendrons are especially fine, and there are some good examples of the rarer Conifers. Messrs. Waterer also have a fine collection of Rhododendrons, which it was intended should have occupied a tent by themselves, but owing to the unfinished state of the structure they were not planted in time for the opening ceremony. There are also some good groups of Conifers from several American houses, amongst which Messrs. Hooper Bros., Messrs. Parsons, Mr. Buist, Mr. Meehan, Messrs. Millers & Seivers were among the most prominent. This part of the exhibition is very well arranged, and great credit is due to Mr. Miller, the chief of the Bureau of Horticulture. There are a few collections from various other countries, but of no great interest.

Hothouse Plants.—In this section England is only represented by one exhibitor, Mr. Williams, of Upper Holloway, London, N., who stages a large collection of new and rare plants of recent introduction, amongst which are some fine specimens of Crotons, Dracænas, Nepenthes, Ferns, Palms, &c. These plants, considering the time they were packed—viz., sixteen days—stood the journey remarkably well: out of eight cases only six plants were unfit to stage. The American exhibits in this department are not as numerous as might have been expected from a country so much devoted to horticulture. Mr. Such, of South Amboy, fills one of the hothouses with plants, amongst which are some very fine specimens of the following plants:—Ceroxylon niveum, Areca Verschaffeltii, Croton angustifolius, Anthurium Scherzerianum, Geonoma Schottiana, Cycas circinalis, Ficus Parcellii. These plants were all well grown and in first-class condition. M. Lacharme, from Havana, also filled one of the hothouses, but his plants were much damaged by the sea-voyage, owing to the want of sufficient packing. There was a fine collection of succulents in this group, and some fine examples of Palms and other foliage plants. Mr. Sturtevant staged a nice little collection of Orchids in flower, including some good varieties of Cattleya Mossiæ.

Garden Appliances, Tools, &c.—There is a first-rate show of goods in this section, such as Fern-cases, jardinettes, garden statuary, vases, &c. Messrs. Barnard, Bishop & Barnard, of Norwich, and Mr. Drew, of Philadelphia, are among the most prominent exhibitors in this department. (*From our own Correspondent.*)

Reports of Societies.

Crystal Palace: *May 19 and 20.*—Following the example set this year by one or two other institutions of a similar character, the managers of the Crystal Palace extended their first exhibition of the season from one to two days, and we believe with great success financially. Of the merits of the show itself we must speak in terms of praise, as although it was not equal to the grand displays that were made here some few years ago, it was a great improvement on any that have been held during the last two or three years. In the nurserymen's class for twelve stove and greenhouse plants in bloom the only competitors were Messrs. Jackson & Son, Kingston, and Mr. B. S. Williams, Holloway, and the prizes of £15 and £10 respectively were awarded in the order named. Messrs. Jackson's plants were large in size, evenly matched, and well flowered; in fact, the best lot of plants we remember to have seen from the Kingston Nursery. The subjects exhibited by this firm were Epacris grandiflora rubra, Erica tricolor Wilsoni, Aphelexis macrantha purpurea, Clerodendron Balfourianum, Statice profusa, Hedaroma fuchsioides, Erica Cavendishiana, Ixora coccinea, Dracophyllum gracile, Anthurium Scherzerianum, and a grandly-flowered Imantophyllum miniatum, over 5 feet across. Mr. Williams has been such a liberal contributor to different exhibitions already this season, that we were not surprised to find his collection in hardly so good form as usual. His best specimens were of Anthurium Scherzerianum, Erica Cavendishiana, Ixora coccinea, and Azaleas Baron de Vriere and concinna, which were respectively of good size and quality.

The highest award in the amateurs' class, for nine stove and greenhouse plants in bloom, was taken by F. G. Wilkins, Esq., Leyton (Mr. Ward, gr.), whose specimens were in his usual excellent and severely prim style. Mr. Ward's best examples were of Erica Cavendishiana, large and well flowered; Statice profusa, from 4 to 5 feet over and profusely flowered; Hedaroma tulipiferum, a large and well bloomed plant; Erica ventricosa magnifica, well flowered, very fresh and brightly coloured; Franciscea confertiflora, a well furnished plant, nicely done; and a good Aphelexis macrantha purpurea. The 2d prize went to Mrs. Treadwell, St. John's Lodge, Lower Norwood (Mr. Peed, gr.), who had a fine lot of plants, including a large, well-flowered, and handsome specimen of Tetratheca ericæfolia; Epacris Eclipse, a very finely-flowered plant; and a finer specimen even than the Messrs. Jackson's of Imantophyllum miniatum. The 3d prize collection, from S. Ralli, Esq., Clapham Park (Mr. Legg, gr.), included some very nice, but not large plants. The next class, which was for six, and confined to amateurs, was not such a good one as those previously mentioned, and we need say no more about it than that the awards went to Mrs. Treadwell (Mr. Peed, gr.), and P. Crowley, Esq., Waddon House, Croydon (Mr. Strahan, gr.).

Fine-foliaged plants were well represented, Dracænas and Palms especially. In the open class for twelve fine-foliaged plants the 1st prize was awarded to Mr. J. H. Ley, Croydon; and the 2d to Messrs. H. & G. Wright, nurserymen, Lee, Kent; but with all due deference to the judges, who may have good and sufficient reasons for placing the awards in this way, we certainly think they should have been reversed. Mr. Ley's plants—nearly all Palms—of the same colour, and with only one properly labelled—had only size to recommend them; while the Messrs. Wright's plants had everything except size in their favour, being young, well grown, and nicely coloured where colour is expected, and as good as regards variety as any one could desire. In the amateur's class for eight, a capital lot of plants, including a very fine Cocos Weddelliana, a large Croton pictus, well coloured; Yucca aloifolia variegata, a well furnished specimen; a handsome Geonoma Seemanni, and beautiful examples of Dasylirion gracile, Pandanus Veitchii, Croton Weismanni, and Croton variegatus, shown by H. Bessemer, Esq., Denmark Hill (Mr. J. Harrow, gr.), were placed 1st, and P. Crowley, Esq. (Mr. Strahan, gr.), was 2d with large and well-grown plants, only wanting a little brighter colour. The finest half dozen Dracænas came from S. Ralli, Esq. (Mr. Legg, gr.); and next in order of merit came Mr. John Wills, Anerley and South Kensington, and Messrs. H. & G. Wright, Lee. This was a very good class, but as only well-known varieties were staged we need not repeat their names. The competition in the class for six Crotons was confined to H. Bessemer, Esq. (Mr. Harrow, gr.), and Mr. B. S. Williams, who had the prizes in the order named. Mr. Bessemer's plants, and especially those of C. undulatus, C. majesticus, and C. spiralis, were very brightly coloured. The Palms shown in an open class for six were a very creditable lot, but small. The prizes were awarded to Mr. Legg, Mr. Harrow, and Mr. Peed. Heaths were well represented, and especially so by F. G. Wilkins, Esq. (Mr. Ward, gr.), and Mrs. Treadwell (Mr. Peed, gr.). The former had the best six and the latter the best eight. The varieties shown by Mr. Ward were E. affinis, E. florida, E. elegans, E. depressa multiflora, E. ventricosa coccinea minor, and E. tricolor impressa—all of which were very nicely finished. Mr. Peed had also half a dozen good plants in this class, and came in 2d; S. Ralli, Esq. (Mr. Legg, gr.), being 3d. Azaleas were staged in considerable numbers, but not in a condition to call for much comment. Mrs. Torr, Garbrand Hall, Ewell (Mr. James Child, gr.), sent the best nine; R. Thornton, Esq., The Hoo, Sydenham (Mr. Ratty, gr.), the best six; and Mr. Turner, Slough, the best twenty in 12-inch pots. Orchids were shown in smaller numbers than usual. The best ten were contributed by Mr. B. S. Williams, and these included a Vanda suavis, with seven spikes, a fine Oncidium sphacelatum, and Dendrobium Falconeri, nicely bloomed. Messrs. Jackson came in 2d, their best specimens being those of Dendrobium Devonianum, and Cypripedium caudatum. In the amateurs' class for eight Orchids, F. G. Wilkins, Esq. (Mr. Ward, gr.), won the 1st prize, with a group which included Dendrobium Falconeri, fine in colour; a good Odontoglossum Pescatorei, Lycaste Skinneri, Oncidium serratum, Odontoglossum hystrix, and a fine mass of O. Phalænopsis. The other prizes went to Mrs. Torr (Mr. Child, gr.), and Sir F. H. Goldsmid, Bart. (Mr. Wheeler, gr.); Mr. J. Ward also staged the finest half-dozen, the choicest examples being of Odontoglossum Bluntii with six spikes, a charming piece of Epidendrum vitellinum majus and Odontoglossum bictonense, with eight good spikes. Show Pelargoniums were not so well represented as usual—we missed Mr. Ward's fine specimens; and as a result of the dull, cold weather, the plants staged were not half in bloom, though otherwise good. Mr. Turner took the 1st prize in the nurserymen's class for eight, and W. F. Watson, Esq. (Mr. James, gr.), was 1st in the corresponding class for amateurs. The prizes were also awarded in the same way in the classes for six Fancies. The competition in the class for nine Roses in pots was confined to Mr. Turner and Messrs. Paul & Son, Cheshunt; and the judges placed them equal 1st. The plants were not so large, as a whole, as those shown at the Aquarium on the previous Tuesday and Wednesday, but they were very fresh and well finished. The varieties staged by Messrs. Paul & Son were Madame de St. Joseph, Dr. Andry, John Hopper, Madame Villermoz, Céline Forestier, Camille Bernardin, Paul Verdier, Madame Margottin, and Souvenir d'un Ami. Mr. Turner had Madame Thérèse Levet, Madame Villermoz, Charles Lawson, Paul Verdier, La France, Edward Morren, Céline Forestier, Maréchal Vaillant, and Victor Verdier. The best twenty in 8-inch pots came from Mr. Turner, the Cheshunt plants coming in 2d, though both were remarkably good. A class for six, open to amateurs, brought no competition. W. F. Watson, Esq. (Mr. James, gr.), was, as usual now, well 1st with nine Calceolarias, the plants being all that could be desired and the quality of the flowers unsurpassed. A. Mongredien, Esq., Forest Hill (Mr. C. E. Waters, gr.), was 2d.

New and rare plants were fairly well represented in the class for nine, from which Dracænas and Crotons were excluded. The chief award went to Mr. B. S. Williams, who had nice examples of Woodwardia radicans cristata, Maranta Makoyana, Cycas intermedia, Kentia Mooreana, Pandanus Veitchii, Araucaria Goldieana, Adiantum gracillinum, and Polystichum lepidocaulon. Mr. J. H. Ley, Croydon, was awarded the 2d prize, having Calamus metallica, Zamia Lindeni, Geonoma gracilis, Cocos Weddelliana (hardly new or rare

now) Pritchardia macrocarpa, Cyathea Dregii, and Cycas Normanbyana. Mr. Wills, Melbourne Nursery, Anerley, was 3d, with nice fresh young plants of Paullinia thalictrifolia, Maranta Makoyana, Abutilon Sellowianum marmoratum, Pandanus Veitchii, Anthurium crystallinum, Artocarpus Cannoni, Nidularium spectabilis, Phyllotænium Lindeni, and Aralia elegantissima. There was a good competition with plants suitable for dinner-table decoration; and here Mr. John Wills was a good 1st, the next best coming from H. Bessemer, Esq. (Mr. Harrow, gr.), and Messrs. H. and G. Wright. Several plants were shown for certificates, and awards of this character were voted by the judges to Mr. John Laing, Stanstead Park, for Zonal Pelargoniums, J. Jenner Weir, Exquisite, and Purity, and for Caladium Madame de la Deransaye; to Mr. B. S. Williams, for Croton Disraeli, Woodwardia radicans cristata, Bertolonia Van Houttei, and Polystichum lepidocaulon; to Mr. John Wills, for Bertolonia Van Houttei; to Messrs. W. Paul & Son, for Rose Star of Waltham; to Mr. Hooper, Widcombe Hill, Bath, for Pansy Jupiter Black; and to Mr. G. Smith, Tollington Nursery, Hornsey, for Pelargonium Wonderful.

The miscellaneous class included several very fine groups of plants of a mixed character, the leading exhibitors being Messrs. Rollisson & Son, Mr. Parker, Mr. John Laing, Messrs. James Carter & Co., Mr. J. Wills, and Mr. J. H. Ley. Other subjects of interest were cut Roses from Messrs. Paul & Son, Cheshunt; Pansies, from Mr. Hooper; Calceolarias, from Messrs. Dobson & Son; and fern-cases, from Messrs. Dick Radclyffe & Co.

Royal Botanic: *May* 24.—It was very unfortunate that the first really good rain we have had for a long time should have fallen on the day selected for the first summer show of this society, and the more so as the show, though somewhat thin, was above the average of similar displays held here during the last few years. It rained almost incessantly the whole of the day, and promenading, which under more favourable circumstances is always most thoroughly enjoyed in these beautiful grounds, was out of the question, and the attendance was consequently a very meagre one. Among the visitors in the morning were Her Majesty Queen Mary of Hanover, and her daughters the Princesses Frederika and Mary; and the Duke and Duchess of Teck, who also made an inspection of the new wing that has been added to the conservatory, and which is to be opened on June 1. Messrs. G. Jackman & Son's exhibition of Clematises, favoured by the dull weather, is still bright and fresh.

Stove and greenhouse flowering and fine-foliaged plants were well represented—the proportion of really poor plants, which has generally been a large one, being this time reduced to a minimum. F. G. Wilkins, Esq., Leyton (Mr. Ward, gr.), occupied the leading place in the class for ten, showing a very effective group, somewhat similar to that staged by him on the previous Saturday at the Crystal Palace. Second in this class came R. Spode, Esq., Hawkesyard Park, Rugeley (Mr. Chapman, gr.), with a capital lot, including very fine examples of Dracophyllum gracile, Erica eximia superba, E. odora rosea, 3 feet through, and well flowered; a sweet-scented variety, too seldom seen; and a good Darwinia tulipifera, &c. The next best collection came from H. Wetenhall, Esq., Seven Sisters Road, Holloway (Mr. Jones, gr.), and consisted of nice half specimens, the finest of which were Franciscea confertiflora, Dendrobium nobile, about 3 feet through; and Darwinia tulipifera, with the largest and richest coloured flowers in the show. Mr. Spode's gardener beat Mr. Ward in a class for six, with a fine lot, which included large and well-flowered examples of Azalea Mars, Erica Cavendishiana, Chorozema Chandleri, a large bush, with perfect foliage and most profusely flowered; Clerodendron Balfournianum, and Anthurium Scherzerianum. Mr. Ward's most noteworthy plants were of the seldom shown Ixora salicifolia, well done; Erica tricolor impressa, from 3 to 4 feet over, and beautifully flowered; and Anthurium Scherzerianum Wardii, whose fine spathes quite put in the shade all others that we have seen. Messrs. Jackson & Son, Kingston, and Mr. B. S. Williams, Holloway, competed here as at the Crystal Palace, and with similar results. The plants were nearly the same, and the awards followed in the same order in the classes for twelve and six. In the class for six fine foliaged plants, Mr. B. S. Williams staged a large and very effective group, the most noticeable subjects in which were Maranta Veitchii, Pandanus Veitchii, a fine example, Croton pictus and C. variegatus, Latania borbonica, and Gleichenia speluncæ, about 4 feet through. Mr. J. H. Ley, Croydon, in the same class had a nice Cocos Weddelliana, Pritchardia pacifica, and Cycas circinalis.

To the corresponding class for amateurs P. Crowley, Esq., Waddon House, Croydon (Mr. Strahan, gr.), contributed good specimens of Croton variegatus and angustifolius, a handsome young plant of Calamus fissus, Rhopala corcovadensis, and a tall, well-furnished Dracæna australis. S. Ralli, Esq., Clapham Park (Mr. Legg, gr.), contributed the finest lot, which comprised a splendidly-grown pyramidal plant, about 5 feet high, of Croton Weismanni; Geonoma pumila, large and very handsome; Dracæna Shepherdi, a fine plant, from 6 to 7 feet high; Stevensonia grandifolia, Croton Johannis, beautifully coloured; and Alocasia Lowii, with fresh and finely-developed leaves. Large and very perfect specimens of Pandanus utilis, Theophrasta imperialis, and Dasylirion acrotrichum, were included in a group from H. Taylor, Esq., Avenue Road, Regent's Park (Mr. Hill, gr.). In a class for a dozen Agaves and Cycads, Mr. B. S. Williams was the only exhibitor. His collection included nice examples of Macrozamia spiralis, Cycas revoluta, Zamia Lehmanni, Dion edule, Agave Taylori, A. Ghiesbreghtii obscura, A. geminiflora filifera, &c., and the 1st prize was awarded.

The Orchids made a nice display on the slope usually devoted to them. The competition in the amateurs' class for six was very good; and the 1st prize collection, from F. G. Wilkins, Esq. (Mr. Ward, gr.), included one of the finest examples of Cypripedium Stonei we have ever seen. The plant was very fresh, and had twenty-eight fine flowers. Its companions were a finely-flowered Odontoglossum Phalænopsis, a good Dendrobium nobile; Odontoglossum Pescatorei with four spikes, Masdevallia Harryana, and Odontoglossum vexillarium with six spikes and two dozen flowers. Lord Londesborough (Mr. Denning, gr.) came in 2d with a fine plant of Vanda teres Andersoni, with about two dozen flowers; a well-flowered mass of Dendrobium Bensonæ, Cattleya Mendelii with six beautiful flowers, C. Wagneri, four flowers, and a fair C. Mossiæ. J. Hepburn, Esq., Sidcup Place, Kent (Mr. J. Loveland, gr.) was 3d, having amongst others Vanda suavis Veitchii with two very fine spikes, Anguloa Clowesii with fourteen flowers, and Cypripedium caudatum with ten flowers. F. A. Philbrick, Esq., Avenue Road, Regent's Park (Mr. Herries, gr.), contributed a very fine plant of Sobralia macrantha with four remarkably fine and richly coloured flowers; and W. Terry, Esq., Peterborough House, Fulham (Mr. Roberts, gr.), had, amongst others, a good piece of Vanda teres, with seven fine flowers, and the rarely shown Brassavola venosa. In the nurserymen's class for six, Mr. B. S. Williams came in 1st, and Messrs. Jackson & Son 2d, the former having nice examples of Oncidium sphacelatum, Vanda tricolor insignis, Lælia purpurata, and Cypripedium barbatum superbum, &c. A pan of Cypripedium spectabile, with eight very beautifully coloured flowers, was shown by J. Hepburn, Esq.

The dull weather has been unfavourable to the full and free development of the blooms of show Pelargoniums, and consequently these were not generally so bright and fully flowered as usual. J. G. Wilkins, Esq. (Mr. Ward, gr.), occupied his old place in the marquee, and also in the prize list, his plants being as usual remarkably fine. The best specimen of all was one of Rob Roy, about 5 feet over, and full of flowers. The others were about 4 feet over, and the varieties were Prince Leopold, Desdemona, Maid of Honour, Atalanta, Emperor, Warrior, Lady Canning, and Exhibitor. W. F. Watson, Esq. (Mr. James, gr.), had smaller plants, but they were well grown, though not at their best. Mr. Turner had also a similar group, in which the varieties, Countess, Isabella, and Ruth, were distinguishable for the purity and delicate softness of their colours. Azaleas, as a rule, were not well represented, and we need only say that the leading exhibitors were R. Thornton, Esq. (Mr. Ratty, gr.), Messrs. H. Lane & Son, Messrs. Ivery & Son, Messrs. Jackson & Son, and Mr. Turner. Heaths, too, though plentiful enough, were not so fine as usual. The season has been very much against them, and the flowers are coming so slowly that some of the best plants are not expected to be fully out before the shows are over, if the weather does not improve. Mr. J. Ward was, as usual, well to the front; and other prominent exhibitors were Messrs. Jackson & Son.

The competition with pot Roses was confined to Mr. Turner and Messrs. Paul & Son, Cheshunt, the former coming in 1st in the classes for nine and twenty respectively, though exceedingly fine displays were made by both growers. Amongst miscellaneous subjects may be noted a very fine group of new and rare plants from Messrs. James Veitch & Sons, including a beautiful collection of Japanese Acers; excellent groups of new plants, &c., from Mr. John Laing, Stanstead Park, Forest Hill, and Mr. J. H. Ley, Croydon; a good group of six old-fashioned hardy herbaceous plants from W. Terry, Esq. (Mr. Roberts, gr.), which gained a 1st prize; a nice assortment of hardy Ferns, from Messrs. Ivery & Son, Dorking; half-a-dozen handsome Clematises, from Messrs. Jackson & Son; a nicely-flowered lot of small Azaleas, from Messrs. Cutbush & Son; cut blooms of choice Pelargoniums and Roses from Messrs. W. Paul & Son; a box of beautiful blooms of Maréchal Niel Rose, from Messrs. H. Lane & Son; and a considerable number of Pansies from Mr. Hooper.

Botanical Certificates of Merit were voted to Mr. B. S. Williams, Messrs. Veitch & Sons, and Mr. J. H. Ley, for Aralia Veitchii gracillima; to Mr. Williams also for Photinia serrulata variegata, Araucaria Goldieana, and Cycas intermedia; to Messrs. Veitch & Sons also for Crotons Macafeeanus and Mooreanus, the latter evidently a broad-leaved form of Weismanni; Phyllanthus roseo-pictus, Rhododendron Queen Victoria, orange-red, showy and very distinct; Rhododendron Duke of Edinburgh, bright rosy salmon; Osmunda palustris, Bollea Lalindei, and Cypripedium selligerum.

Floral Certificates were awarded to Mr. Newell, gr. to E. W. R. Pratt, Esq., Ryston Hall, Suffolk, for Habrothamnus Newellii, which produces clusters of very dark crimson flowers; to Messrs. Veitch & Son, for Azalea Jean Vervaene; to Dr. Denny, for Zonal Pelargonium Marmion, a large and very fine bright scarlet; to Messrs. W. Paul & Son, for H.P. Rose Magna Charta, bright rosy pink, a large, full, and fine flower; to Messrs. E. G. Henderson & Son, for double Cineraria King Alphonse, and Prince Imperial, and for the strain of Mimuluses; to Mr. Hooper, Bath, for Pansy Jupiter Black, remarkable for its size and almost jet black colour; to Mr. J. Laing for twelve Caladium Madame Hervè, emerald-green, with a white centre and deep crimson ribs; for Caladium Madame de la Devansaye, large white, with delicate green venation, and a green margin and crimson ribs; for Pelargonium Exquisite, with a broad light chocolate zone and yellowish-green centre; and for Bronze Pelargonium J. Jenner Weir, something like the foregoing, but with a broader zone.

Reading Horticultural: *May* 18.—By general consent this was acknowledged to be one of the best exhibitions ever held in Reading. Some of the local exhibitors, for various reasons, did not on this occasion send their plants; but the exhibition was reinforced by contributions of stove and greenhouse plants from a distance—Worcester sending some subjects of great excellence, while from other parts, such as Devizes, Salisbury, and places as far remote, plants poured in.

The leading prize for twelve stove and greenhouse plants was won by Mr. Tudgey, gr. to F. G. Williams, Esq., Henwick Grange, Worcester, a rising young cultivator. His plants consisted of a splendid example of Anthurium Scherzerianum, finely grown and covered with massive spathes; Stephanotis floribunda, Hedaroma tulipiferum, Imantophyllum miniatum, Clerodendron Balfourianum, Phænocoma prolifera Barnesi, Erica tricolor coronata, Statice profusa, Dipladenia amabilis, and three others. The 2d prize went to Mr. Mearing, gr. to W. Whitley, Esq., Guildford, with a group only a little inferior to the foregoing. Mr. W. Lees, gr. to Mrs. Marsland, Reading, was 3d. Mr. Parham, gr. to G. May, Esq., Reading, had the best six—an excellent Epacris miniata, and a grand example of Lantana Camara, of large size and finely bloomed, being the leading plants; Mr. Higgs, gr. to Mrs. Crawshay, Caversham Park, Reading, being 2d. The best specimen stove or greenhouse plant in flower was a good Anthurium Scherzerianum, from Mr. Tudgey. One exhibitor had a fine plant of Lilium giganteum, a somewhat unusual subject at a flower show. Prizes were offered for groups of three, as also for a specimen Orchid—the best trio coming from Mr. Higgs, and the best specimen from Mr. J. Applin, gr. to H. A. Simonds, Esq., Reading.

The best nine Azaleas were staged by Mr. J. C. Higgs, the plants well bloomed and very fresh, and averaging 4½ feet in height. Mr. W. Lees was 2d, with some good plants. The best six in 8-inch pots were pretty standard plants from Mr. J. Millar, gr. to C. Ellis, Esq., Maidenhead, and there were a quantity of plants staged in this class. Show Pelargoniums were, as usual, well shown by Mr. J. C. Higgs; but the collection could be improved by the introduction of newer varieties. Mr. Basket had the best six Fancy Pelargoniums, Princess Teck being a very attractive variety. A pretty group of six Ericas came from Mr. J. F. Mould, Pewsey, Devizes; they were in good variety, healthy and nicely flowered, and quite put in the shade some large old plants that it was almost a pity to keep longer.

Good groups of foliaged plants are always to be seen at Reading. On this occasion the best collection of nine plants came from Caversham Park, Mr. Higgs staging capital examples of Alocasia Lowii, Theophrasta imperialis, Pandanus utilis, Araucaria Cookii, Alocasia metallica, Cordyline australis, Croton variegatus, Latania borbonica, and one other. Mr. J. Applin was 2d, and Mr. Tudgey 3d. Something like six collections competed in this group. The class for nine stove and greenhouse Ferns was well contested—the first three collections coming very near to each other; the best came from Mr. Applin, the next from Mr. Higgs, and the 3d from Mr. Tudgey.

Cut flowers were represented by Roses and bunches of stove and greenhouse plants, the latter a new feature, and a good one it proved. Mr. Tranter, of Henley, was as usual to the fore with Roses, the best bunches of flowers coming from Mr. Higgs. In the

classes for a group of three pieces with flowers and foliage, and two pieces with wild flowers, the competition was confined entirely to ladies; these classes always excite much interest, and excepting that the stands are invariably too heavily weighted with flowers, the productions were decidedly satisfactory.

An interesting feature was a group of plants staged by Messrs. J. Standish & Co., Royal Nurseries, Ascot. This included a variety of charmingly coloured Acers, a splendid example of Adiantum gracillimum, A. dissectum, and A. farleyense, Azaleas, Ericas, baskets of white Roses, some very fine Cinerarias, and some examples of the Early Ascot Frontignan Grape. Messrs. John Waterer & Sons had some Rhododendrons in flower, and Messrs. Phippen & Robinson a small group of Palms.

The show of fruit was small, but, on the whole, good. President was the best Strawberry, finely shown by Mr. J. Bellis, Sulhampstead Park; while Mr. W. Fowle, of Dagmersfield Park, had James Veitch very fine indeed. The season considered, vegetables were well shown, but it is at the August exhibition at Reading when vegetables are most conspicuous (*From a Correspondent.*)

Notices of Books.

THE last number of the *Bulletin d'Arboriculture* contains among other matters some interesting details on the great Orleans nurseries of MM. Trauson frères, Danvesse and Desfossés-Thuillier, a notice of the career of the eminent German pomologist, Dr. Lucas, together with a portrait.

—— A new part of Hooker's *Icones Plantarum* (Williams & Norgate) has just been published, containing twenty-five lithographed plates and descriptions of new and rare plants selected from the Kew Herbarium. For the most part they are of purely botanical interest. Pleiocarpa is remarkable among Apocynaceæ for the possession of three to five carpels instead of the normal number two. Heteroloma, a Lobeliaceous genus, is noteworthy for the peculiar horn-like appendages of the spur of the corolla. Monopyle racemosa is a new Gesnerad, described but not figured in this number, but which is stated to be in the possession of Messrs. Veitch. Gymnolæna Newii is an entirely new Asclepiad both as to genus and species, which has been found on Kilimangaro, a mountain in East Tropical Africa, ascended by the Rev. C. New.

—— Messrs. J. and A. Churchill are publishing in parts a series of coloured plates of medicinal plants, with descriptions of the principal plants used in medicine, with an account of their properties and uses, by Professor Bentley and Dr. Trimen. It is expected that about 300 plates will be issued. Of the utility of such a publication there cannot be two opinions, and from the tested reputation of the authors full confidence may be placed on the botanical accuracy of the text. The colouring of the plate before us, Barosma crenulata, is not quite satisfactory, and the analysis of the flower somewhat wanting in clearness.

The Weather.

DURING the week ending Saturday, May 20 in the vicinity of the metropolis, the reading of the barometer at the level of the sea decreased from 30.24 inches at the beginning of the week to 30.05 inches by the evening of the 14th, increased to 30.31 inches by the evening of the 19th, and then decreased to 30.18 inches by the end of the week. The mean reading for the week at sea level was 30.18 inches, being 0.08 inch lower than that of the preceding week, and 0.26 inch above the average.

The highest temperatures of the air observed by day ranged between 67½° on the 20th, and 56° on the 14th; the mean value for the week was 61¾°.

The lowest temperatures of the air observed by night varied from 36° on the 20th to 42° on the 15th; the mean value for the week was 39¼°.

The mean daily range of temperature in the week was 22¼°, the greatest range in the day being 31¼° on the 20th, and the least 18½° on the 18th.

The mean daily temperatures of the air were as follows:—14th, 45°.7; 15th, 48°.7; 16th, 49°; 17th, 48°.7; 18th, 47°.2; 19th, 51°.3; 20th, 50°.5; and the departures in defect of their respective averages were as follows:—5°.6, 3°.2, 3°.3, 4°.1, 6°, 2°.3, 3°.2. The mean temperature of the air for the week was 48°.7, being 4° below the average of observations extending over sixty years.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 131° and 134° on the 19th and 20th; on the 14th 85° was the highest reading. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 25¼° on the 14th, and 27½° on the 20th; the mean for the several low readings was 31½°.

The direction of the wind was from the N.E., and its strength gentle. The weather during the week was fine, though cloudy at times, cold and dry. No rain fell.

In England the highest temperature of the air observed by day was 71½° at Bristol. At Bradford, 56¾° was the highest temperature in the week; the mean from all stations was 64½°. The lowest temperature of the air was 29½° at Cambridge; at Plymouth and Liverpool 39° was the lowest temperature in the week; the mean from all stations was 35½°. The range of temperature in the week was the greatest at Bristol, 41¼°, and Cambridge, 40½°; and the least, 18¾, at Bradford. The mean range of temperature in the week from all stations was 29¼°. The mean of the seven high day temperatures was the highest at Bristol, 64°, and the lowest at Bradford, 53½°; the general mean from all stations was 59°. The mean of the seven low night temperatures was the lowest at Eccles and Newcastle-on-Tyne, both 37°, and the largest at Plymouth, 43¾°; the mean value from all stations was 40°. The mean daily range of temperature was the least at Bradford, 11°, and the greatest at Bristol and Cambridge, both 26°; the mean daily range of temperature from all stations was 19°.

The mean temperature of the air for the week was 48°, being 4¼° lower than the value for the corresponding week in 1875. The highest was 50½°, at Truro, and the lowest, 46½°, at Norwich and Bradford.

Rain fell at Bristol, Bradford, and Sunderland to the amount of one-tenth of an inch; at most other stations no rain fell; the average fall over the country was two-hundredths of an inch.

The weather during the week was fine, but cold and dry for the season. A solar halo was seen at Liverpool on the 20th inst.

In Scotland the highest temperature of the air ranged from 66° at Edinburgh and Greenock to 61¾° at Aberdeen. The lowest temperatures of the air varied from 33½° at Aberdeen to 41¾° at Leith; the average of the former was 63¾°, and that of the latter 36¾°. The mean range of temperature in the week was 27°.

The mean temperature of the air for the week was 49½°, being 2° lower than the value for the corresponding week in 1875. The highest was at Greenock, 51°, and the lowest at Aberdeen, 47½°.

The amount of rain measured at Leith was 0.08 inch, at Aberdeen was 0.03 inch, and at Greenock was 0.02 inch; at other stations no rain fell; the average fall over the country was 0.02 inch.

At Dublin, the highest temperature of the air was 65°, the lowest 32°, the range 33°, the mean 49°, and the fall of rain 0.07 inch.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, MAY 24, 1876.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
May	In.	In.	°	°	°	°	°	°			In.
18	30.04	+0.32	58.6	40.0	18.6	47.2	— 6.0	40.4	78	NNE; N.E.	0.00
19	30.10	+0.36	66.4	41.6	24.8	51.3	— 2.3	42.5	72	E.; ENE; E.S.E.	0.00
20	30.05	+0.31	67.3	36.1	31.2	50.5	— 3.2	36.4	59	E.; NNW	0.00
21	29.89	+0.15	69.2	43.3	25.9	54.8	+ 0.6	45.0	69	NNW; S.W.; S.S.W.	0.00
22	29.62	—0.12	63.4	43.9	19.5	51.4	— 2.7	45.7	84	S.W.; WSW	0.48
23	29.59	—0.15	61.5	47.2	14.3	52.6	— 1.7	45.4	77	S.S.W.; WSW	0.03
24	29.51	—0.24	51.3	42.9	11.4	47.5	— 7.1	43.5	87	SW.; S.; S.S.E.	0.51
Mean	29.83	+0.09	63.0	42.1	22.9	50.8	— 3.2	42.7	75	Variable.	sum 1.02

May 18.—Dull and cloudy till noon. Fine, but cloudy after. Cold.
— 19.—A fine day, partially cloudy. Strong breeze.
— 20.—A very fine warm day.
— 21.—Fine, but rather dull and cloudy.
— 22.—A dull day, fine at times. Frequent heavy rain after 5 P.M.
— 23.—Fine, but occasionally dull and showery.
— 24.—Dull, cloudy, cold, and wet throughout.

JAMES GLAISHER.

Enquiries.

He that questioneth much shall learn much.—BACON.

117. MILLER'S BURGUNDY VINE.—A correspondent wishes to know where he can obtain this Vine, having tried in vain through the ordinary channels.

Answers to Correspondents.

BLACK CURRANT BUD DISEASE: *W. D. & Sons.* The buds on the Black Currant shoots sent have been rendered abortive by the attacks of myriads of the extremely minute, white, elongated Acarid described in our article in *Gardeners' Chronicle*, 1869, p. 841. *J. O. W.* [We reproduce an illustration which represents, in the left hand figure, a bud highly magnified, with the outer scales partially opened, showing a few of the parasites, which, on an average, are individually not more than 1-200th of an inch in length, and 1-500th of an inch in width. The centre figure represents one of these little insects very highly magnified, as seen when crawling along, and the right hand

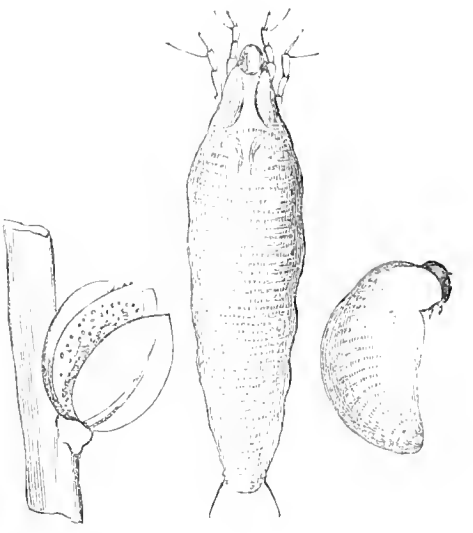


FIG. 129.—CURRANT-BUD MITE.

figure represents a very young animal when lying on its side in a state of inactivity." EDS.]

BOOKS: *C. Cooper.* 1. The first is 7s. 6d.; the second, 1s. 2. Loudon's *Amateur Gardeners' Calendar* (Warne & Co.).

CAMELLIA LEAVES: *W. T. T.* The leaves have the appearance of being attacked by red-spider. We cannot, however, find any traces of the Acarus, though there are, we believe, abundant indications of their eggs. If the house is free from red-spider, we are quite at a loss to account for their peculiar condition. *M. J. B.*

CONIFERS: *H. K.* You are right in saying that No. 1 is sold in Britain as Podocarpus andina, and No. 2 as Prumnopitys elegans; also that Parlatore and Gordon consider the two names synonymous. They are known and only known by these names all over Britain, for which wide-spread errors Mr. Gordon is responsible. No. 1 is Podocarpus chilina of Richard, or P. saligna of Don, and was introduced into Europe towards the close of last century. No. 2 is Podocarpus andina of Poeppig, or Prumnopitys elegans of Philippi. These were the first and duly published names of the plants represented by the specimens.

DAISIES: *N. E. L. L.* Fork out as many of the roots as you can, and then apply a dressing of nitrate of soda at the rate of 275 lb. to the acre.

FUNGI: *J. S., Merriott.* Your fungi are splendid specimens of the edible Morel (Morchella esculenta).

GRAPES: *F. S.* It is not natural for the bunches to be produced at the extremities of the shoots. It is simply a monstrosity.

HORSE CHESTNUT: *R. Mann.* The leaves of the Horse Chestnuts in Kensington Gardens are injured very much in the same way, and we imagine it is the effect of frost at night during the late severe easterly winds. It is not insect damage. *A. M.*

INSECTS: *Roberts.* It is not a fly, but the beetle named Otiorrhynchus sulcatus, whose ravages are so well known. *A. M.*—*R. N. Hooker.* Do not despair. The beetle that does this mischief (Sitona lineata) often seems likely entirely to destroy the crop by eating the young leaves of the Peas, but when the plants get stronger, and the tissues tougher, they get the better of it, and often do not seem much the worse. Perhaps our correspondent would not object to tell us a month hence how the crop looks; and if he can find the larva and trace its habits he will help to solve a problem which has not yet been determined by entomologists. *A. M.*

IVY-LEAVED PELARGONIUMS: *J. G.* The specimens arrived in such a bad condition that we could form no opinion of them.

NAMES OF PLANTS: *G. W. H.* The Bird-Cherry, Prunus Padus.—*K. F. J.* Pteris semipinnata. —*J. Young.* Asplenium marinum, Cystopteris Dickieana. —*D. W. P. B.* Pinus Pinaster. *A. M.—A Subscriber.* 1, Iris florentina; 2, Narcissus poeticus; 3, Pittosporum Tobira—*T.* The Iris from San Remo is a form of I. germanica with unusually large flowers.—*C. A.* The Bird-Cherry, Prunus Padus.—*J. F. C.* 1, Prunus Padus; 2, Cytisus supinus; 3 and 4, next week; 5 and 6, variegated forms of Hedera Helix; 7, Buxus sempervirens variegata; 8, indeterminable without fruit. —*W. S.* Possibly a variety of Gongora portentosa, but arrived in too decayed a state to name with certainty. — *Mrs. Rowland.* Euphorbia Bojeri. — *G. McF.* Ixia patens.—*J. Purvis.* 1, Barbarea præcox; 2, Sherardia arvensis; 3, Achillea millefolia; 4, Plantago lanceolata; 5, Geranium molle; 6, specimen insufficient.—*J. A. P.* Tulipa Hageri.— V. A., Prunus Padus; P., Coronilla Emerus.—*A. Boyle.* 1, Lunaria biennis; 2, Orchis Morio; 3, Teucrium lucidum.— *K. F. J.* 1, Digraphis arundinacea, the Ribbon-grass; 2, Veronica gentianoides; 3, Ribes multiflora. —*L'Allegro.* Asarum europæum.— *W. Nelson.* 1, Narcissus biflorus; 2, Ranunculus aconitifolius, fl. pl.; 3, Pulmonaria officinalis; 4, Probably Thuja Vervaeneana; 5 and 6, next week.

NEPAUL: *A Subscriber.* If you will take the trouble to look at the most elementary atlas, you will find that Nepaul is a district of the Eastern Himalaya Mountains of India.

PITTOSPORUM: *East Somerset.* What you send under the name of Pittosporum Maii is P. tenuifolium. See Hooker's *Handbook of the New Zealand Flora*, p 19.

TREE TRANSPLANTING: *R., Clapham.* See pp. 164, 1853; 821, 1856; 941, 1871.

VINES: *S. S.* There does not appear to be anything the matter with your Vine leaves. They are miserably small and sickly, as if grown on a starved, sickly plant.—*Black Alicante.* The decay is caused through a too close, humid, warm atmosphere. Its excessive luxuriance renders this variety peculiarly subject to this.

☞ FOREIGN SUBSCRIBERS sending Post Office Orders, payable at the post-office, King Street, Covent Garden, London, are requested to be good enough to write to the Publisher, at the office of this paper, 41, Wellington Street, Covent Garden, at the same time, to inform him of the fact.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "Editors," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. *Letters relating to Advertisements, or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

CATALOGUES RECEIVED.—Mr. E. Kruiff (Sassenheim, near Haarlem, Holland), Wholesale Catalogue of Dutch Flower Roots—Messrs. M. C. Alkemade & Son (Zeestraat, Noordwijk-Binnen, near Haarlem, Holland), Catalogue of Dutch Flower-roots and Bulbs—Messrs. Lévêque et fils (à Ivry-sur-Seine, près Paris), Catalogue of New Roses, &c.

COMMUNICATIONS RECEIVED.—D. T. F.—W. B. H.—R. D.—O.—J. G. B.—W. B. S.—L. H. G.—R. P. G.—J. R. J.—G. L.—G. E.—A. F.—J. W.—G. D.

DIED, May 13, at Victoria Street, Belfast, ROBERT B. MATTHEWS, Seed Merchant, aged 45 years.

—— On May 14, aged 58, at Cambusmore, Sutherlandshire, N.B., Mr. JOHN GORDON, formerly of Huntly, Aberdeenshire, but for the last twenty years gardener to the Hon. Mrs. Beatson, Cambusmore.

*** IMPORTANT NOTICE.—*The* AGRICULTURAL GAZETTE *is now* PUBLISHED *on* MONDAYS, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, May 25.

A steady business is doing, at last week's prices. The markets are well supplied with all classes of goods, more particularly from abroad. *Jas. Webber, Wholesale Apple Market.*

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz.	4 0	..	Lettuces, per score..	2 0	..
— Jerusalem, p. lb.	0 3	..	Mint, green, bunch	0 4	..
Asparagus (English), per bundle	.. 2 0	–12 0	Mushrooms, per pott.	1 0	2 0
— French ..	.. 2 0	– 5 0	Onions, young, bun.	0 4	– 0 6
— Giant ..	..18 0	–40 0	Parsley, per bunch..	0 4	..
Beans, French, p. 100	1 3	– 2 6	Peas, green, per qt...	3 0	..
— Longpod, basket	5 0	..	Potatos (new), baskt.	1 0	..
Beet, per doz.	.. 1 0	– 2 0	— new Jersey, p. lb.	0 6	– 1 6
Cabbages, per doz.	.. 1 0	– 2 0	— Sweet, per lb.	.. 0 6	..
Carrots, per bunch..	0 6	..	Radishes, per bunch.	0 1	– 0 3
— new, do.	.. 2 0	..	— Spanish, doz.	.. 1 0	..
Cauliflowers, p. doz.	2 0	– 4 0	— French ..	.. 0 6	..
Celery, per bundle..	1 6	– 2 0	Rhubarb, per bundle	0 6	– 1 0
Cucumbers, each ..	0 4	– 1 3	Salsafy, per bundle..	0 9	..
Endive, per doz.	.. 1 0	– 2 0	Shallots, per lb.	.. 0 3	..
— Batavian, p. doz.	2 0	– 3 0	Spinach, per bushel	3 0	..
Herbs, per bunch ..	0 2	– 0 4	Tomatas, per doz. ..	3 0	..
Horse Radish, p. bun.	3 0	– 5 0	Turnips, per bundle	0 4	..
Leeks, per bunch ..	0 2	– 0 4	— New French, do.	1 0	..

Potatos — Rocks, 105*s.* to 110*s.*; Regents, 140*s.* to 180*s.*; Flukes, 130*s.* to 160*s.*; Victorias, 120*s.* to 160*s.* per ton. Old stocks nearly exhausted.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1 6	– 5 6	Melons, each	.. 6 0	–12 0
Apricots, per box	.. 2 0	– 3 0	Nectarines ..	..10 0	–36 0
Cherries, per box	.. 3 0	– 6 0	Oranges, per 100	.. 6 0	–12 0
Cobs and Filbts., lb.	0 9	– 1 0	Peaches, per doz.	..10 0	–36 0
Figs ..	..10 0	–20 0	Pears, per doz.	.. 3 0	–15 0
Gooseberries, gr., qt.	0 9	– 1 0	Pine-apples, p. lb.	.. 1 6	– 4 0
Grapes, per lb	.. 3 0	–12 0	Strawberries, per oz.	0 3	– 1 3
Lemons, per 100	.. 6 0	–10 0			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	4 0	–12 0	Narcissus, single, 12 bunches ..	.. 2 6	– 6 0
Azaleas, 12 sprays	.. 0 6	– 2 0	— double, 12 bun.	9 0	–24 0
Camellias, per doz...	1 6	–12 0	Pelargoniums, 12 spr.	0 6	– 2 0
Carnations, 12 blooms	2 0	– 4 0	— Zonal do.	.. 0 4	– 1 6
Cineraria, per bunch	1 0	– 2 0	Pinks, white, p. doz.	1 0	– 2 0
Eucharis, per doz. ..	6 0	–12 0	Primula, dbl., p. bun.	1 0	– 1 6
Gardenia, per doz. ..	2 0	– 9 0	Rhododend., 12 hds.	1 6	– 6 0
Heliotropes, 12 spr.	0 6	– 1 0	Lily of Valley, 12 spr.	0 6	– 3 0
Roses, indoor, p. doz.	1 6	–10 0	Mignonette, 12 bun.	6 0	– 9 0
Spiræa, 12 sprays ..	1 0	– 4 0	Nemopaila, 12 bun.	1 6	– 4 0
Stephanotis, 12 sprays	4 0	–15 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	6 0	–18 0	Heaths, in var., doz.	12 0	–30 0
Azaleas, per doz.	..24 0	–60 0	Lily of Valley, doz.	12 0	–30 0
Begonias, per doz...	6 0	–12 0	Mignonette, do.	.. 6 0	– 9 0
Bouvardias, do.	..12 0	–18 0	Myrtles, do...	.. 3 0	– 9 0
Calceolaria, per doz.	9 0	–24 0	Palms in variety, each	3 6	–21 0
— herbaceous, doz.	6 0	–18 0	Pelargoniums, scarlet, per doz. ..	.. 4 0	– 9 0
Cineraria, per doz...	6 0	–18 0	— in variety, doz.	18 0	–36 0
Cyperus, do...	.. 6 0	–12 0	Petunias, double, doz.	9 0	–36 0
Deutzia, do...	.. 6 0	–18 0	Dracæna terminalis	30 0	–60 0
— viridis, per doz.	18 0	–24 0	Roses, Fairy, do.	.. 9 0	–15 0
Ficus elastica	.. 2 6	–15 0	— various, do.	..18 0	–30 0
Fuchsia, per doz.	.. 6 0	–18 0	Spiræa, per doz.	.. 9 0	–24 0
Genista, do...	.. 6 0	–18 0	— palmata, each	.. 2 0	– 5 0

CORN.

Trade at Mark Lane on Monday, though wanting much in animation, was firm, and in the value of Wheat an advance of about 1*s.* per quarter was established for the week. Barley experienced a slow sale, and prices showed no material change. Malt was dull and unaltered. Good Swedish Oats were bought at an advance of 6*d.* per quarter, but other sorts were as previously reported. Maize was taken off slowly, so also were Beans and Peas. Fine American flour was steady, but English of all kinds was supported with difficulty at the rates of last Monday.—Trade on Wednesday was quiet, and prices were much the same as on Monday. No change was reported in the value of Wheat. Barley was held for former prices, as also was malt. Oats were firm, with a moderate inquiry. Maize, Beans, and Peas were rather dull, and there was little disposition to operate in flour.—Average prices of corn for the week ending May 20:—Wheat, 44*s.* 11*d.*; Barley, 35*s.* 6*d.*; Oats, 26*s.* 6*d.* For the corresponding week last year:—Wheat, 42*s.*; Barley, 38*s.* 8*d.*; Oats, 31*s.*

CATTLE.

At the Metropolitan Market on Monday trade in beasts was not so brisk as of late, and prices on the average lower. Choice English sheep were especially scarce, and commanded higher rates. Trade was dull for lambs and calves, at lower rates. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.*, and 5*s.* 6*d.* to 5*s.* 10*d.*; calves, 5*s.* to 6*s.* 2*d.*; sheep, 5*s.* 6*d.* to 5*s.* 10*d.*, and 6*s.* 4*d.* to 6*s.* 10*d.*; lambs, 7*s.* 6*d.* to 8*s.* 8*d.*; and pigs, 4*s.* 4*d.* to 5*s.* 4*d.*—On Thursday the beast market was not largely supplied, and a firmer tone prevailed for the primest sorts, whilst inferior remained dull of sale at previous rates. Of sheep and lambs the supply was fair. For the former there was a good demand, and the finest brought higher rates, raising our top quotation. Calves met a moderate demand, but some very suitable in quality brought firm rates. There was some inquiry for small porkers.

HAY.

At the Whitechapel market on Tuesday there was a moderate supply of fodder, for all classes of which there was a steady trade at the following rates:—Prime Clover, 100*s.* to 150*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 130*s.*; inferior, 55*s.* to 75*s.*; and straw, 35*s.* to 48*s.* per load. On Thursday trade was rather dull, but prime dry qualities steady. Quotations:—Clover, best, 120*s.* to 150*s.*; inferior, 85*s.* to 95*s.*; hay, best, 112*s.* to 135*s.*; inferior, 55*s.* to 75*s.*; straw, 36*s.* to 48*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 140*s.* to 150*s.*; inferior, 100*s.* to 126*s.*; superior Clover, 150*s.* to 160*s.*; inferior, 110*s.* to 135*s.*; and straw, 46*s.* to 52*s.* per load.

POTATOS.

At the Borough and Spitalfields markets on Monday the supplies of Potatos were on a moderate scale, and, with a steady demand, prices were supported. Kent Regents, 130*s.* to 180*s.* per ton; Essex do., 110*s.* to 170*s.*; Victorias, 160*s.* to 195*s.*; Flukes, 180*s.* to 195*s.*; Rocks, 100*s.* to 120*s.*; Kidneys, 120*s.* to 140*s.*

COALS.

The demand for house coal at market on Monday was steady, at last prices. Wednesday's market was a quiet one, at the following quotations:—Hastings Hartley, 18*s.* 3*d.*; Walls End—Hetton, 20*s.* 6*d.*; Hetton Lyons, 18*s.* 3*d.*; Hawthorn, 18*s.* 3*d.*; Original Hartlepool, 20*s.* 6*d.*; South Hetton, 20*s.* 6*d.*; East Hartlepool, 20*s.* 3*d.*

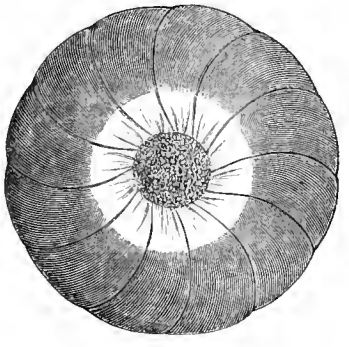
SUTTON'S

SUPERB STRAINS OF

FLORISTS' FLOWERS,

POST FREE.

The Finest Strain of Cineraria.



SUTTON'S SUPERB CINERARIA.

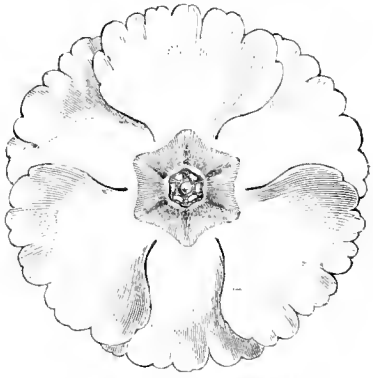
This will be found unequalled by any in cultivation, the seed having been saved from the finest named varieties only.

Price 2*s.* 6*d.* per packet, post-free.

From Mrs. A. ALLERTON, *Prittlewell, May* 8.

"Our Cinerarias this year (from your seed) are splendid; they far surpass any I saw at the Botanical Gardens yesterday."

The Finest Strain of Primula.



SUTTON'S SUPERB PRIMULA.

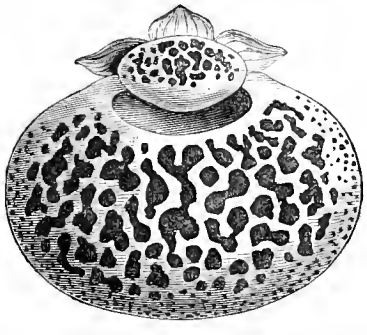
This choice stock has been carefully selected from the largest fringed flowers of good colour. Habit, robust; with bloom thrown well above the foliage.

Red, white, or mixed, 2*s.* 6*d.* per packet, post-free.

From W. EDWARDS, Esq., *Wellington, January* 21.

"I cannot help saying that the Primulas from your seed have always given great satisfaction, but this year more than ever."

The Finest Strain of Calceolaria.



SUTTON'S SUPERB CALCEOLARIA.

This splendid strain has been most carefully selected from the very finest collections in cultivation. The plants are compact in habit, with beautiful green foliage, and a profusion of bloom. The flowers are perfect in form and substance, and of every shade of colour.

Per packet, 2*s.* 6*d.*

From A. E. RUSSELL, Esq., *Dalnabreck, July* 10.

"My Calceolaria plants, from seed purchased of you last year, are particularly fine, of very compact habit, and beautiful in colour."

SUTTON & SONS,

THE QUEEN'S SEEDSMEN, READING.

"ARCHIMEDEAN" AMERICAN LAWN MOWERS,

Will Cut Long and Wet Grass (as well as Dry and Short) without Clogging.

They are especially adapted for Cutting Slopes, Steep Embankments, under Shrubs, and close up to Trees, &c.; and are also extremely light in draught, simple in construction, well made, and not likely to get out of order.

AWARDED

Grand Diploma of Honourable Mention, Vienna, 1873.
Silver Medal, Vienna, 1870.
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PATRONIZED BY

HER GRACIOUS MAJESTY THE QUEEN,
H.R.H. THE PRINCE OF WALES,
H.I.M. THE EMPRESS OF GERMANY,
H.I.M. THE EMPEROR OF AUSTRIA,
The late EMPEROR OF THE FRENCH,
THE VICEROY OF EGYPT,
And many of the Nobility and Gentry of Great Britain.

CAN BE USED EITHER WITH OR WITHOUT GRASS BOX.

OPINIONS of the PRESS.

"Far superior to any of ours."—*Vide the Field.*

"Remarkably easy to work."—*Vide the Gardener's Magazine.*

"The quickest, most simple, and most efficient mower ever used."—*Vide the Gardeners' Chronicle.*

"We feel bound to recommend it to our readers as one of the best mowers we have as yet made acquaintance with."—*Vide the Floral World.*

PRICES FROM ONE GUINEA.

Warranted to give satisfaction.

Delivered Carriage Free to all Stations.

Illustrated Catalogue post-free on application.

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JOHN G. ROLLINS & CO., Old Swan Wharf, Upper Thames Street, London, E.C.;
WALTER CARSON & SONS, La Belle Sauvage Yard, Ludgate Hill, London, E.C.; and 21, Bachelor's Walk, Dublin. *Selling Agents.*

IMPORTANT NOTICE.

THE STUDLEY ROYAL LAWN MOWER

Forwarded a Month on Trial to any Address, and can be sent back if not approved of and

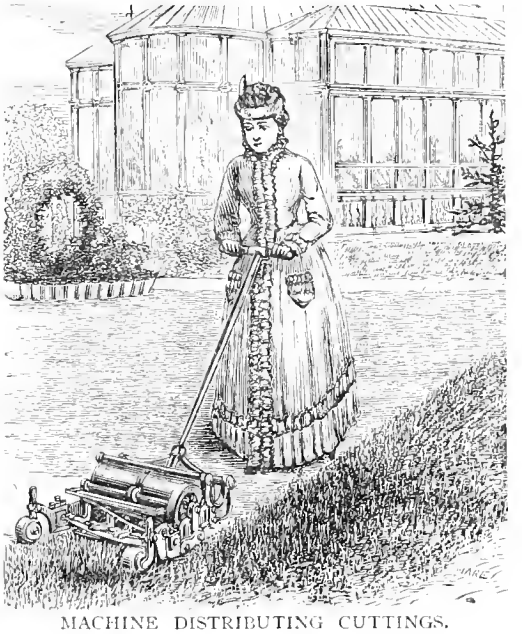
THE MONEY RETURNED.

PRICES.

	£	s.	d.
10-inch Machine	3	3	0
12-inch Machine	4	4	0
14-inch Machine	5	5	0
16-inch Machine	6	6	0
18-inch Machine	7	7	0
20-inch Machine	8	8	0
24-inch Machine	9	10	0
30-inch Machine	12	10	0

Grass Boxes, 12-inch, 7*s.* 6*d.*; 14-inch, 16-inch, 18-inch, and 20-inch, 10*s.* each.

Carriage paid to all principal Railway Stations and Shipping Ports in the Kingdom.



MACHINE DISTRIBUTING CUTTINGS.

TESTIMONIALS.

The Gardens, Kenmure Castle, New Galloway.
Mr. PARKINSON, *April* 25, 1870.

Sir,—I enclose Post-office Order for the Lawn Mower you sent me. I can give your machine a hearty recommendation for doing its work well, for one man can do as much, and with more ease, than two could do with the older sorts. Another great advantage is being able to cut the Grass when wet, for it is no easy matter Grass-cutting the hot days in summer.

Yours truly,
THOMAS DUFF, Gr. to the Honble. Mrs. E. Gordon.

The Gardens, Kirkhammerton Hall, near York.

Sir,—We tried the 20-inch Lawn Mower where the Grass was 5 or 6 inches long, and it did its work well and with much easier draught than any I have seen before. On a level lawn your 20-inch machine can be worked by one man. It will also cut wet Grass better than any machine I ever worked, and I consider it the best machine in use.

Yours respectfully,
ROBERT BUTLAND.

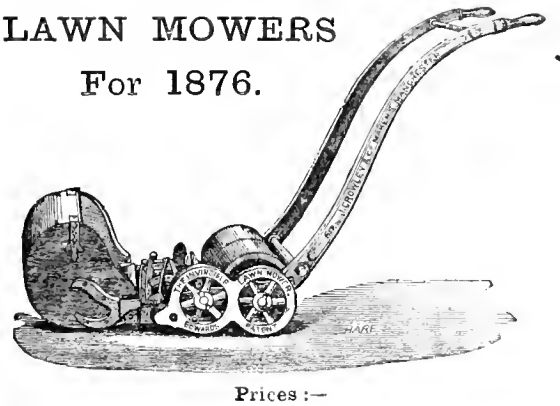
Baldersby Park Gardens, near Thirsk.

Sir,—Your Lawn Mower gives every satisfaction. It cuts long and wet Grass better than any machine with which I am acquainted, requires less draught, and cuts closer to a pedestal or a border.

Yours truly,
W. MEREDITH, Gr. to the Viscountess Downe.

Address—WILLIAM PARKINSON, RIPON, YORKSHIRE.

LAWN MOWERS
For 1876.



Prices :—

6 in.	8 in.	10 in.	12 in.	14 in.	16 in.	18 in.
£1 5s.	£2 10s.	£3 10s.	£4 10s.	£5 10s.	£6 10s.	£7 10s.

20 in. £8 10s. 24 in. £9 10s.

Every Machine Guaranteed. Catalogues on application.

WINNER OF THE FIRST PRIZE
GOLD MEDAL,
LAWN MOWER CONTEST,
BIRMINGHAM, JULY 8, 1874,
AND
EVERY MEDAL AWARDED
FOR
LAWN MOWERS
IN
1875.

THE "INVINCIBLE."

Results have proved conclusively that the "INVINCIBLE" is without exception, the

Best Lawn Mower Made.

Cuts Wet or Dry, Long or Short Grass.

S. EDWARDS, Patentee.

SOLE MAKERS :—

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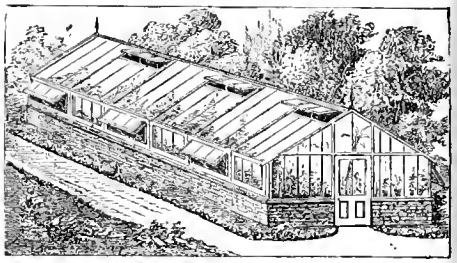

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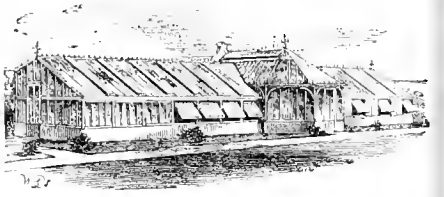

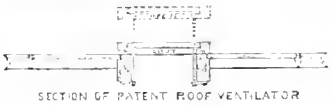

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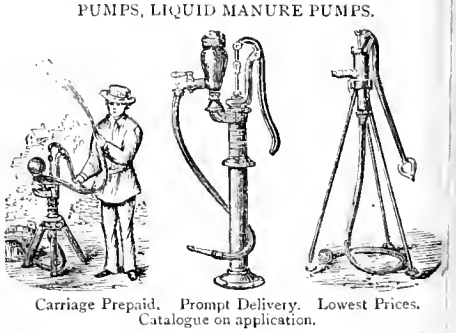

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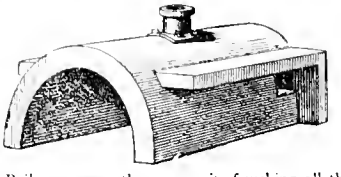

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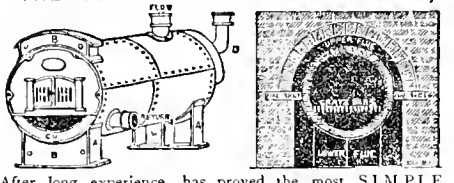

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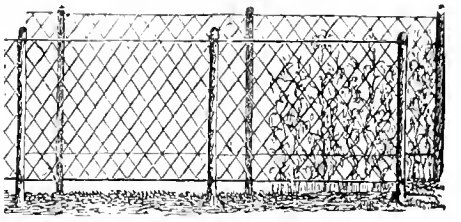

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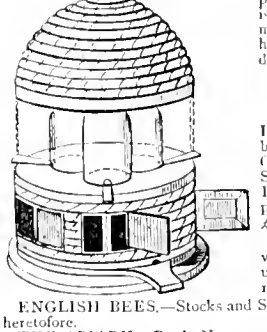

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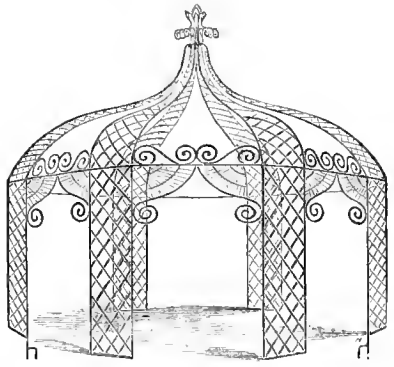

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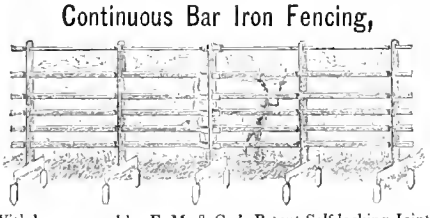

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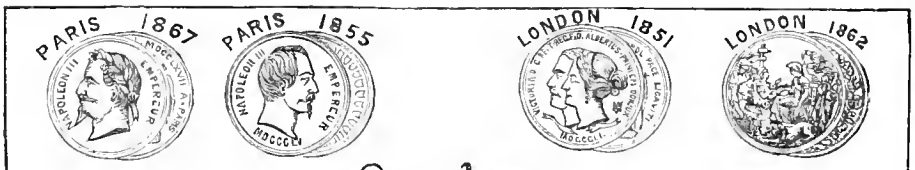

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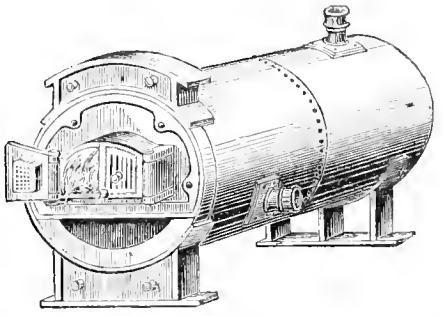

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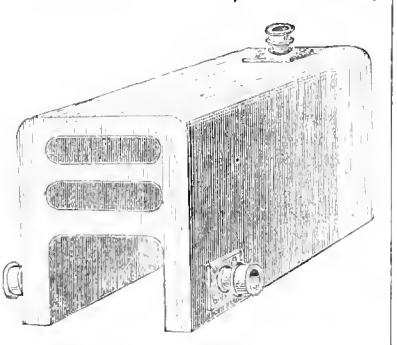

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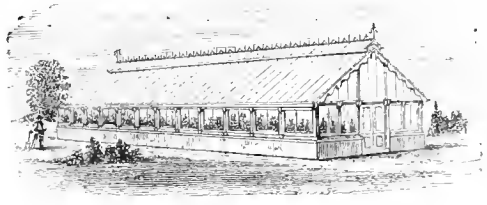

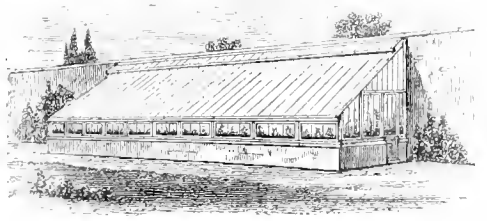

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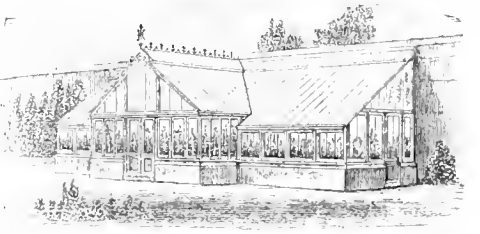

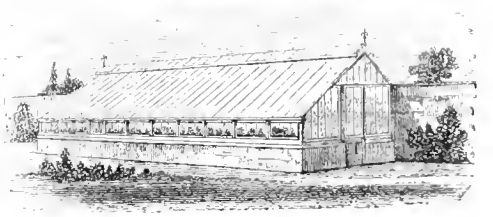

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Gesneraceous Plants for Winter Decoration, by Mr. G. Westland.
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Hampstead Burial Board.

WANTED, a SUPERINTENDENT for the Cemetery of St. John, Hampstead.—The Burial Board will meet at their Office, 10, New End, Hampstead, on Monday, June 5 next, at 10 o'Clock in the morning, for the purpose of receiving applications and testimonials from persons desirous of becoming candidates for the office of Superintendent of their Cemetery at Fortune Green, Hampstead. Salary, £110 per annum, with residence, coals, and gas. The person to be appointed must be between the ages of 25 and 40 years, must write a good hand, and be able to keep ordinary accounts, understand Gardening, Excavating and Digging Graves. Further particulars may be obtained on application at the Burial Board Office daily, between the hours of 12 and 2. Applications and testimonials to be forwarded to the Clerk to the Board, endorsed "Application for Superintendent," on or before 12 o'Clock noon on June 3 next,

By Order, ALEX. WM. BAPTIE, Clerk to the Board.
Burial Board Office, 10, New End, Hampstead, May 12.

WANTED, a thorough practical HEAD WORKING GARDENER, married, no family. Three kept. Must understand Vines, Cucumbers and Melons. Forcing Early Vegetables, Roses, &c.—Apply by letter to J. H., Willmington Hall, Dartford.

WANTED, for a place in the country (Sussex), where there is a good deal of Glass, an experienced GARDENER.—T. S. RICHARDSON, 28, Clement's Lane, London, E.C.

WANTED, a MAN and WIFE—Man as good single-handed Gardener, Wife as good plain Cook. Without encumbrance. To live in the house in a small family. No Catholics.—S. CARBERRY, Butcher, Weston Street, Upper Norwood, S.E.

WANTED, as SECOND GARDENER, a single young Man—one that has been accustomed to Greenhouses and Vineries. Wages, 18*s*. per week.—The HEAD GARDENER, Hall Place Gardens, Maidenhead.

WANTED, as UNDER GARDENER in a Gentleman's Garden, a steady, industrious young Man. Small quantity of Glass. Wages, 20*s*. per week.—J. MAHOOD, Windsor Nursery, Putney, S.W.

WANTED, a practical WORKING FOREMAN, used to Laying-out New Grounds, and the Management of Men.—Apply personally or by letter, stating wages required and what experience, to E. C., 2, Allcroft Road, Lismore Circus, Kentish Town, N.W.

WANTED, an experienced GENERAL NURSERY FOREMAN. Liberal wages to a really competent Man. Also wanted a young MAN to take charge of Greenhouse and Bedding Plants—R. THORNHILL, Bowdon Nurseries, Bowdon, Cheshire.

WANTED, a young MAN, to take charge of Bulbs, Herbaceous and Alpine Plants, and Hardy Florist's Flowers, with a good knowledge of Propagation and Cultivation.—Apply, stating all particulars, to JAMES DICKSON AND SONS, "Newton" Nurseries, Chester.

WANTED, a respectable Young MAN, acquainted with Plants, to take care of Conservatory and wait upon Customers.—RICHARD J. WOOD, The Bedford and Haverstock Nurseries, Haverstock Hill, N.W.

WANTED, as SEED GROWER, a working Man, well up in the growing of Agricultural Seeds.—C. R. FREEMAN, Norwich.

WANTED, IMMEDIATELY, a Young MAN, well up in Potting, Tying, and Growing a general collection of Greenhouse and Bedding Plants for market. Must be sober and of good character. Liberal wages given—Apply in own handwriting, stating wages expected, to R. W. PROCTOR, Ashgate Road Nurseries, Chesterfield.

WANTED, a respectable YOUTH, in the Houses; must write a good hand, and be quick at Potting. Wages, 16*s*. per week.—J. MORSE, Nurseryman, Dursley.

WANTED, a Young LADY, with a knowledge of the Business, to assist in a Seed and Florist Shop, and occasionally in the lighter part of House-work. Comfortable home.—T., *Gardeners' Chronicle* Office, W.C.

WANTED, a DRAUGHTSMAN, who has a good practical knowledge of the Construction of Horticultural Buildings in Iron, and of Heating.—C., Mr. Negus, 14, Charles Street, Haymarket.

WANT PLACES.

Head Gardeners.

JOHN LAING can at present recommend with every confidence several energetic and practical Men, of tested ability and first-rate character. Ladies and Gentlemen in WANT of GARDENERS and BAILIFFS, or GARDENERS for First-rate Establishments or Single-hand Situations, can be suited, and have full particulars by applying at Stanstead Park and Rutland Park Nurseries, Forest Hill, London, S.E.

B. S. WILLIAMS, having at the present time several very excellent GARDENERS upon his Register, is desirous of placing them in Situations where great experience and trust are required. B. S. W. would at the same time beg to intimate that when a Gardener is applied for that the filling of the situation should be left with him, as that would prevent unnecessary correspondence and delay.—Victoria and Paradise Nurseries, Upper Holloway, London, N.

GARDENER (HEAD).—Age 31; thoroughly understands the profession. Eleven years' experience. Highly recommended. When suited no objection to Laundry.—H. E., Post-office, Battle, Sussex.

GARDENER (HEAD).—Age 30, single; fourteen years experience in Pines, Vines, Peaches, Melons, Cucumbers, Flower and Kitchen Gardening. Good character.—T. F., Bonnington's, Ware.

GARDENER (HEAD).—Married, one child, (age 7); has a thorough practical knowledge of the profession in all its branches. Land and Stock if required. Two and a half years' good character.—J. COOK, Gardener, Thornton House, Clapham Park, S.W.

GARDENER (HEAD).—Age 34, married, one child (age 6); twenty-one years' experience in Grapes, Stove and Greenhouse Plants, Flower and Kitchen Gardening. Twelve years' character.—GEORGE OLIVER, Fulbourn House, Cambridge.

GARDENER (HEAD).—Middle-aged, married, one son (age 17); thoroughly practical in all branches of the profession. A first-class Fruit Grower, &c. Good reference.—D. S., Fawley Court, Henley-on-Thames, Oxon.

GARDENER (HEAD).—The Advertiser offers £5 to any one who may be the means of procuring a situation for him as above. Married, no family.—For particulars, apply to H. C., Elliott's, High Street, Stroud, Gloucestershire.

GARDENER (HEAD).—Age 32, married, two children; industrious, sober, and thoroughly trustworthy. Six years in present situation; leaves in consequence of employer breaking up his establishment.—W. L., Thomas Cripps & Son, Tunbridge Wells Nurseries, Kent.

GARDENER (HEAD).—JAMES BENNETT, over 10 years Gardener to Baron Hambro, will shortly be disengaged, and offers his services to any Nobleman or Gentleman in want of a first-class Gardener well skilled in all branches of the profession. Character unexceptionable.—Milton Abbey Gardens, near Blandford, Dorset.

GARDENER (HEAD) (recommended by Mr. WILLIAM PAUL, F.R.H.S.)—Age 31, married, no family, fifteen years' experience in Forcing Grapes, Peaches, Strawberries, Melons and Cucumbers, Management of Greenhouses and Conservatory, Flower and Kitchen Gardening. Excellent character.—GEORGE GOLDSMITH, 38, All Saints' Street, Hastings.

GARDENER (HEAD, WORKING), where two or more are kept.—Single; thoroughly proficient and practical in all branches. Highly recommended.—H., Mr. McRonald, South Street, Chichester, Sussex.

GARDENER (HEAD, WORKING).—Age 32, married; thoroughly experienced in Early Fruit, Plant, Vegetable, and Rose Growing, Propagation, &c. Good references.—A. B., Post-office, East Bridgeford, Nottingham.

GARDENER (HEAD, WORKING).—Age 29, single; thoroughly experienced in all branches of the profession, including Vines, Peaches, Melons, Cucumbers, &c.—W. J. G., 25, Goldsmith's Place, Canonbury Road, Islington, London, N.

GARDENER (HEAD, WORKING).—Age 31, married, one child; understands Vines, Peaches, Cucumbers, Stove and Greenhouse Plants, and Flower and Kitchen Gardening. Good character.—State wages, assistance, &c., J. M., 18, Taunton Road, Lee, S.E.

GARDENER (HEAD, WORKING).—Age 31, married, two children; well up in the Cultivation of Flowers, Fruits, and Vegetables. Three and-a-half years in present situation. Good references. Country preferred.—E. T. G., 163, Fulham Road, London, S.W.

GARDENER (HEAD, WORKING), where one or two are kept.—JAMES BATLEY, Gardener, Wentworth Castle, Barnsley, wishes to recommend a married man as above. Has had good experience in the various branches of Gardening. He is steady, honest, and very industrious.

GARDENER.—A GENTLEMAN wishes to highly recommend his Gardener to a good situation. Thoroughly understands the profession, and is most respectable and trustworthy.—P. C., Nutfield Court, Nutfield, Surrey.

GARDENER.—WILLIAM WHITING, Moor Lodge, Newcastle-on-Tyne, will be happy to communicate with any Lady or Gentleman in want of a good Gardener in all departments. Age 30, married, two children. Can be well recommended.

GARDENER (SECOND), in a good Garden.—Age 21; good Propagator, &c. Good references.—A. J., Mr. Spriging's Nurseries, St. Alban's, Herts.

GARDENER (SECOND), in a good Establishment.—Seven years' good experience. Two years' good character. Bothy preferred.—E. P., Post Office, Milton, Lymington, Hants.

GARDENER (SECOND), where two or more are kept.—Age 25, single; understands Flower and Kitchen Gardening, likewise Pits and Frames, Greenhouse-Conservatories, and has a slight knowledge of Vines. Good references.—GEORGE SIMMONDS, The Red House, Watering, Bury.

GARDENER (SECOND), or good SINGLE-HANDED.—Age 20; experienced in Forcing Vines, Melons, Cucumbers, Stove and Greenhouse Plants, and Flower and Kitchen Gardening. Four years' good character; two years in last place.—D. S., Mr. Thunkley, Grocer, Stone Street, Cranbrook, Kent.

GARDENER (UNDER).—Age 20; four and a-half years' first-rate character.—B. H., Post-office, Brackley.

GARDENER (UNDER).—Age 22; has a good knowledge of Flower and Kitchen Gardening. Good reference.—R. B., Post-office, Taunton, Somerset.

GARDENER (UNDER), in a Nobleman's or Gentleman's Garden.—Age 20; five years' experience. E. W., 3, Regent's Terrace, London Road, Norbiton, Kingston-on-Thames.

MANAGER, or FOREMAN.—Age 27, married; thoroughly experienced in all branches. Good character and references. In or near London preferred.—H. P. R., The Nurseries, Watford Road, St. Alban's, Herts.

FOREMAN.—Age 23; has had twelve years' experience in the Cultivation of Soft and Hard-wooded Plants and Early Forcing.—A. B., Messrs. Rollisson, Tooting, Surrey.

FOREMAN (INDOOR).—Age 27; thirteen years' practical experience in the Trade. Good penman. Satisfactory references.—State particulars to FOREMAN, 2, Key's Terrace, Church Lane, Hammersmith, W.

FOREMAN, or good SECOND, in the Houses; also an IMPROVER in the Houses. Bothy preferred.—C. D., Post-office, Rugeley, Staffordshire.

To Head Gardeners.

IMPROVER.—Age 20; is anxious to place himself under a Head Gardener, where Forcing and Plant Growing are well and extensively cultivated; has had good experience in Outdoor work, but is anxious to gain knowledge of Indoor Cultivation. A Premium given.—E. H., 7, North End, Erith, Kent.

TO NURSERYMEN.—A Gentleman, age 31, wants a situation in the Nursery, Seed, or Floral Business. First-class references given.—K. W., Strontian Lodge, Cotham, Bristol.

ROSE GROWER.—Twelve years' experience. Good character.—B., The Nurseries, Northallerton, Yorkshire.

TO NURSERYMEN.—A young Man wants a situation in a Nursery. Has a good knowledge of Stove and Greenhouse Plants, also of the Seed Trade. Three years' good character from last situation.—E. J. S., 140, Rotherfield Street, Essex Road, Islington, N.

COWMAN and POULTRYMAN.—Age 38, married; can take charge of Farm or Woods and Plantations. Nine years' good character.—H. E., 204, Mayall Road, Herne Hill, Dulwich, Surrey.

EPPS'S COCOA.
GRATEFUL—COMFORTING.
"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided our breakfast tables with a delicately-flavoured beverage which may save us many heavy doctors' bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal shaft by keeping ourselves well fortified with pure blood and a properly nourished frame."—*Civil Service Gazette.*

KINAHAN'S LL WHISKY.
This celebrated and most delicious old mellow spirit is the very CREAM of IRISH WHISKIES, in quality unrivalled, perfectly pure, and more wholesome than the finest Cognac Brandy. Note the Red Seal, Pink Label, and Cork branded "Kinahan's LL" Whisky.
Wholesale Depot, 20, Great Titchfield Street, Oxford Street, W.

DINNEFORD'S FLUID MAGNESIA.—
The best remedy for ACIDITY of the STOMACH, HEARTBURN, HEADACHE, GOUT, and INDIGESTION; and the safest aperient for delicate Constitutions, Ladies, Children, and Infants.
DINNEFORD AND CO.,
172, New Bond Street, London, and all Chemists.

HOLLOWAY'S PILLS.—Many persons are apt to regard the winter past when a few bright days enliven them, and some are rash enough at once to change warm for lighter clothing; much risk attends their imprudence, although the inevitable ill-health resulting from it can be readily set right by recourse to these purifying and corrective Pills—invaluable to the sickly at all times, and doubly useful at this season, when they cast out the impurities of winter and fortify the system against the sudden variations and frequent epidemics attending spring. Holloway's medicine relaxes the skin, permits free transpiration through its pores, and thus rids it of the irritation and harshness which increasing temperature make annoying to the nervous and sensitive.

Asthma.—Cure (this week) by
DR. LOCOCK'S PULMONIC WAFERS.
—May 22, 1876, from Mr. Welch, Bookseller, Camelford.—"Mr. Burnard, Farmer, St. Juliott's, Cornwall, for ten years suffered from Asthma. Tried the Wafers and the result was marvellous." They taste pleasantly. Sold by all medicine vendors at 1*s*. 1½*d*. and 2*s*. 9*d*. per box.

GREEN'S PATENT "SILENS MESSOR" & "MONARCH,"

Or NOISELESS LAWN MOWING, ROLLING, and COLLECTING MACHINES for 1876,

THE WINNERS OF EVERY PRIZE IN ALL CASES OF COMPETITION.

Patronised by Her Most Gracious Majesty the Queen on numerous occasions, H.R.H. the Prince of Wales, the King of the Belgians, the late Emperor of the French, the Emperor of Russia, and most of the Nobility, Clergy, and Gentry in the United Kingdom.

Upwards of 75,000 of the above Machines have been Sold since they were first introduced in the year 1856,

And Hundreds of unsolicited Testimonials have been received testifying to their superiority over all other Machines, and are being received almost daily.

They have been submitted to numerous practical tests in Public Competition, and in all cases have carried off every Prize that has been given.

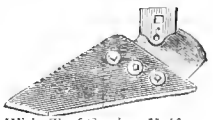
The following are their advantages over all others:—

1st. Simplicity of Construction—every part being free of access. 2d. They are worked with far greater ease than any other. 3d. They are the least liable to get out of order. 4th. They make little or no noise in working. 5th. They will cut either long or short Grass, wet or dry.

SINGLE AND DOUBLE-HANDED "SILENS MESSOR" LAWN MOWER,

And Turf-Cutting Knife with New Drum Fixing ready for attaching to Old Mowers.

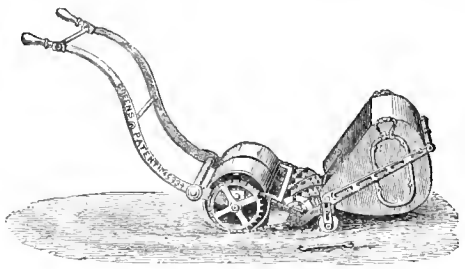
	£	s.	d.
To cut 8 inches ... ... Can be worked by a Lady.	2	10	0
To cut 10 inches ... ... Ditto.	3	10	0
To cut 12 inches ... ... Can be worked by one Person.	4	15	0
To cut 14 inches ... ... Ditto.	5	16	0
To cut 16 inches ... ... Can be worked by one Person on an even Lawn.	6	17	0



With Turf-Cutting Knife. ... £5 5 0

... 6 6 0

... 7 7 0



	£	s.	d.
To cut 18 inches ... ... Can be worked by a Man and Boy.	8	0	0
To cut 20 inches ... ... Ditto.	8	10	0
* „ 22 „ ... ... Ditto.	9	0	0
* „ 24 „ ... ... Ditto.	9	10	0

* If made stronger, suitable for Donkey, 30s. extra.

Prices of Horse, Pony, and Donkey Machines, including Patent Self or Slide Delivery Box; Cross-stay complete; suitable for attaching to Ordinary Chaise Traces or Gig Harness:—

DONKEY and PONY MACHINES.

To cut 26 inches	£15 0 0
„ 28 „	17 0 0
„ 30 „	18 10 0
Leather Boots for Donkey	1 0 0
„ „ Pony	1 4 0

HORSE MACHINES.

To cut 30 inches	£22 0 0
„ 36 „	26 0 0
„ 42 „	30 0 0
„ 48 „	34 0 0
Leather Boots for Horse	1 9 0

The 26 and 28 inches can easily be worked by a Donkey, the 30 inches by a Pony, and the larger sizes by a Horse; and as the Machines make little noise in working, the most spirited animal can be employed without fear of its running away, or in any way damaging the Machines.

Carriage paid to all the principal Railway Stations and Shipping Ports in England, Ireland, and Scotland.

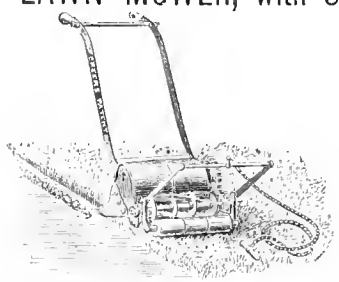
GREEN'S PATENT "MONARCH" LAWN MOWER, with Chain and Internal Gear combined.

This Mower has only few cutters in the cylinder, which runs at a very quick speed, so that it is well adapted for cutting long, coarse, rough, and wet Grass. It is strongly made, and does its work admirably. It will cut nearer to an object than any other Lawn Mower extant.

The sizes and prices of the "Monarch" Mower are in every respect the same as for the "Silens Messor," with Grass Box, &c., complete.

The sides of the 12-in., 14-in., and 16-in. "Monarch" Mowers are all prepared for the Turf-cutting Knife, so that it can be fixed to them at any time. Price 10s.

Green's Patent Lawn Mowers have proved to be the best, and have carried off every prize that has been given in all cases of competition.



"MONARCH" MR. CHAIN OFF SET FOR CUTTING TURF.

Green's Lawn Mowers are the only Machines in constant use at the Royal Horticultural Society's Gardens, South Kensington, London.

N.B.—Those who have Lawn Mowers which require repairing should send them to either our Leeds or London establishment, where they will have prompt attention, as an Efficient Staff of Workmen is kept at both places.

A Stock of 500 Mowers, including all sizes, is kept at our London establishment, from which Purchasers can make their selection and have prompt delivery.

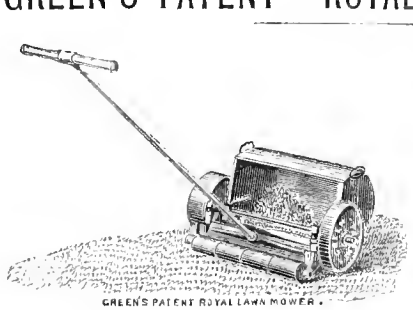
Delivered, Carriage Free, at all the principal Railway Stations and Shipping Ports in England, Ireland, and Scotland.

SPECIAL NOTICE.

GREEN'S PATENT LAWN MOWERS possess (over those of all other makers) the advantage of self-sharpening; the cutters, being steel on each side, when they become dull or blunt by running one way round, the cylinder can be reversed again and again; and by bringing the bottom edges of the cutters against the bottom blade, the Machines will cut equal to new ones. Arrangements have been made so that the cylinder can be reversed by any inexperienced person in two or three minutes.

When Green's Lawn Mowers are used there is no ridge or wave-like appearance left on the sward, but they leave the lawn with a smooth, even, and carpet-like surface, which is pleasing and delightful to the eye of the observer.

GREEN'S PATENT "ROYAL" LAWN MOWER.



GREEN'S PATENT ROYAL LAWN MOWER.

The special features of this Mower are its novel construction and its extreme simplicity. It is easily adjusted, and will cut grass close up to trees, shrubs, seats, &c., and is eminently adapted for cutting slopes, banks, flats, &c. It is easily worked, and is a good, useful and cheap machine.

Carriage paid to all the principal Railway Stations and Shipping Ports in England, Ireland, and Scotland.

With Single Gearing.

	£	s.	d.
To cut 6 inches..	1	5	0
„ 8 „	1	15	0
„ 10 „	2	10	0
„ 12 „	3	5	0
„ 14 „	4	0	0
„ 16 „	5	0	0

With Gearing on Each Side.

	£	s.	d.
To cut 18 inches..	6	10	0
„ 20 „	7	0	0
„ 22 „	7	10	0
„ 24 „	8	0	0

For Donkey or Pony.

To cut 30 inches..	10	0	0

GREEN'S PATENT Grass Edge Clipper.

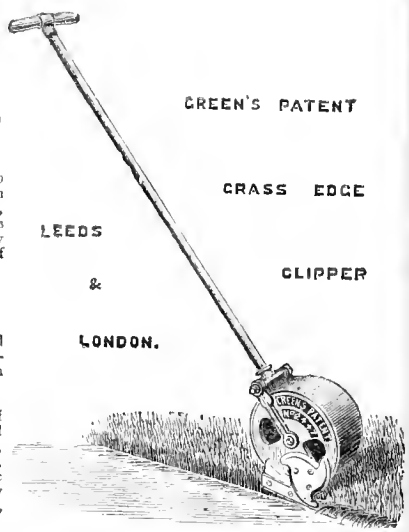
This Machine is specially designed to meet a want which has long been felt in cutting the edges of walks, borders, flower-beds, &c. With it a person is enabled to cut the edges at an easy walking pace, and a great saving of labour is thereby effected.

Price 21s. each

At the works or at our London depot:

23s. each, including Packing Case and Carriage paid to all the principal Railway Stations and Shipping Ports in England, Ireland, and Scotland.

The Grass Edge Clipper and Turf Cutter can be had in a combined Machine, price 50s. each at the Works, or at our London Depot; 53s. each, including Packing Case and carriage paid to all the principal Railway Stations and Shipping Ports in England, Scotland, and Ireland.



All the above Machines are Warranted to give entire Satisfaction, otherwise they may be returned at once, free of cost to the Purchaser.

THEY CAN BE HAD FROM ALL RESPECTABLE IRONMONGERS AND SEEDSMEN IN THE UNITED KINGDOM; OR FROM

THOMAS GREEN & SON, Smithfield Ironworks, Leeds; and 54 and 55, Blackfriars Road, London, S.E.

ILLUSTRATED PRICE LIST FREE ON APPLICATION.

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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

No. 127.—Vol. V. { New Series. } SATURDAY, JUNE 3, 1876. { Registered at the General Post Office as a Newspaper. } Price 6d. Post Free, 5½d.

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Subscribers who wish to have "The Gardeners' Chronicle" forwarded DIRECT FROM THE OFFICE are respectfully informed that payment MUST BE MADE IN ADVANCE.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE.—SCIENTIFIC, FRUIT, and FLORAL COMMITTEES' MEETINGS on WEDNESDAY next, June 7, at 11 o'clock. GENERAL MEETING at 3. Admission, 7s. 6d., or by tickets bought before the day by Fellows only, 5s.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
GREAT SUMMER SHOW of the Season of STOVE and GREENHOUSE PLANTS, ORCHIDS, AZALEAS, PELARGONIUMS, ROSES, &c., and FRUIT, WEDNESDAY, June 7, and THUSDAY, June 8. Band of the Royal Engineers each day from 4 P.M. Doors open at 2 P.M. on Wednesday, and 10 A.M. on Thursday. Admittance, on Wednesday, 7s. 6d., or by Tickets bought before the day by Fellows only, 5s.
Tickets at the usual Agents, and the Entrances to the Gardens. Admittance on Thursday, 1s., by payment at the Doors.
*** Mr. WILLIAM BULL'S SILVER CUPS will be competed for at this Show, which will be held under the Great Tent.

ALEXANDRA PALACE.—GREAT ROSE SHOW of the Season, FRIDAY and SATURDAY, July 7 and 8. LAST DAY of ENTRY, JULY 1. Schedules of Prizes and all particulars may be had on application to
ALEX. McKENZIE, 1 and 2, Great Winchester Street Buildings, E.C., and at the Alexandra Palace, Muswell Hill, N.

GRAND FLORAL FETE, YORK, JUNE 14, 15, and 16. PRIZES nearly £600. ENTRIES CLOSE on WEDNESDAY, June 7.
13, New Street, York. JNO. WILSON, Sec.

LEEDS HORTICULTURAL SOCIETY.—The THIRTEENTH ANNUAL GREAT FLOWER SHOW will be held in the Horticultural Gardens, WEDNESDAY, THURSDAY, and FRIDAY, JUNE 28, 29, and 30. PRIZES £600, and TWO SILVER CUPS. Military Bands, Punch and Judy, Fireworks, &c.
JAMES BIRBECK, Secretary.

COLCHESTER and EAST ESSEX HORTICULTURAL SOCIETY.—A two days' Show will be held at Lexden Park, Colchester, on JUNE 28 and 29, in connection with the Essex Agricultural Show. £200 will be offered for Plants, Roses, Orchids, &c., in classes for Amateurs and Growers. Two Military Bands will attend. Prize Lists, &c., may be obtained of
Mr. WM. HARRISON, Sec.
Colchester, and Birch Villa, near Colchester.

NOTTINGHAM and MIDLAND COUNTIES GRAND ROSE SHOW and HORTICULTURAL EXHIBITION (Open to all England) will be held at the Arboretum, Nottingham, on THURSDAY, FRIDAY, SATURDAY, and MONDAY, July 6, 7, 8, and 10. The Mayor of Nottingham President. Prize List amounting to upwards of £600. Space will be allotted for the Exhibition of Horticultural Implements and Garden Furniture. Medals and Certificates of Merit awarded.
Schedules are now ready, and may with particulars be obtained on application to
Municipal Offices, Nottingham. ALFRED KIRK.

CARTER'S GRASS SEEDS for Lawns and Parks, 20s. per bushel.

CARTER'S GRASS SEEDS for Permanent Pastures, 22s. 6d. to 36s. per acre.

CARTER'S GRASS SEEDS. Carriage Free. To suit all Soils.

CARTER'S GRASS SEEDS for Renovating Meadows and Lawns, 18s. to 20s. per bush.

CARTER'S, THE QUEEN'S SEEDSMEN, 237 and 238, High Holborn, W.C.

ARAUCARIA EXCELSA, very healthy, well furnished plants, admirably adapted for decorative purposes, 15 to 18 inches high. Price on application. Trade supplied.
FRANCIS & ARTHUR DICKSON & SONS, Upton Nurseries, Chester.

CENTAUREA CANDIDISSIMA, in single pots, nice plants, 20s. per 100, package included. Not less than 25 at the above price. Half to quarter specimens.
KALOSANTHES COCCINEA, well set for flower, 3s. 6d., 5s., to 7s. 6d. each.
JOHN HOUSE, Eastgate Nurseries, Peterborough.

Cymbidium eburneum.
WM. MAULE AND SONS have to offer a few small, thoroughly established, home-grown Plants from a flowering specimen of Loddige's true variety. Price, 63s. each. The Nurseries, Bristol.

Cinerarias.
MESSRS. JOHN STANDISH AND CO.'S strain of Cinerarias is now acknowledged to be the finest in the Kingdom. Carefully saved Seed may now be had post-free at 2s 6d., 3s. 6d. and 5s. per packet. Wholesale price to the Trade on application.
Royal Nurseries, Ascot, Berks.

Plant Catalogue.
CHARLES TURNER'S DESCRIPTIVE LIST of PLANTS for the Season, including several new varieties now offered for the first time, is ready, and may be had on application.
The Royal Nurseries, Slough.

Notice.—Seeds, Seeds.
WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds. CATALOGUES now ready, which contain every requisite, at fair prices, post-free on application.
Highgate, London, N.

Bedding Plants.
F. W. COOPER can supply the Trade and others with the above in large quantities. The stock is well grown and healthy, the plants all in separate pots. Priced List on application.
F. W. COOPER, Florist, Huntingdon.

PRIMULA FIMBRIATA flore plena.—Double white and various other shades of colour, a few hundreds of good plants in 48's are offered cheap at per 100, to the Trade.—J. JACKSON, Nursery, Kidderminster.

DOWNIE AND LAIRD beg to intimate that their fine stocks of Show and Fancy PANSIES, also VIOLAS, are now in fine flower at their Pinkhill Nurseries. Many of their Seedlings this season are of surpassing beauty. Inspection invited. Edinburgh, May 24, 1876.

Pelargoniums, Pelargoniums.
JAMES HOLDER'S unrivalled Collection—strong healthy Plants, Show, French, and Fancy varieties, at 35s. per 100, cash, hamper and packing included. Extra strong plants, in 48's and 32's, at 9s. and 12s. per dozen, basket and packing extra.
Crown Nursery, Reading.

TRICOLOR GERANIUMS.—20,000 Mrs. Pollock and Sophia Dumaresque, at 3s 6d. per doz, package included, or post-free at same price. The Trade supplied.
ALFRED FRYER, The Nurseries, Chatteris, Cambridgeshire.

Verbenas, Verbenas, Verbenas.
WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

DAHLIAS.—For choice kinds apply to GEO. RAWLINGS, Romford, who devotes himself almost entirely to the cultivation of this noble flower.

JOHN WATERER AND SON'S Exhibition of RHODODENDRONS is now on view at The Gardens, Manley Hall, Manchester.

PHLOXES and PENTSTEMONS, best show kinds, at 25s. per 100, and a general assortment of strong bedding-out plants, 14s per 100.
J. JACKSON, Nursery, Kidderminster.

Orchids.
W. F. BOFF offers Orchids, good sorts, nice plants, at 21s., 30s., and 42s. per dozen and upwards. No objection to taking CHOICE FRUIT IN EXCHANGE.
203, Upper Street, Islington, N.

SUTTON'S GRASS SEEDS for PASTURES, 22s. 6d. to 36s. per Acre. Carriage free.

SUTTON'S GRASS SEEDS for PARK GROUNDS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for GARDEN LAWNS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for CROQUET GROUNDS, 20s. per Bushel. Carriage free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

LETTY COLES.—This Rose is now being sent out; plates may be had for eighteen stamps. The finest Tea Rose sent out for years.
JOHN KEYNES, Nurseryman, Salisbury.

NEW STRIPED ROSE—BEAUTY OF GLAZENWOOD.—"A Rose of golden-yellow, striped and flaked with scarlet or vermilion, sounds like a dream or a fairy tale. It is nevertheless a reality." H. CURTIS, in the *Garden*. Full particulars free by post.
LEWIS WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

GEORGE SMITH, FLORIST, 61, Penrose Street, Walworth, S., begs to intimate that his Collection is very large and most healthy. In single pots (own selection), from 2s. per dozen cash. List free.

Lilium auratum.
B. MALLER, Lewisham, S.E., begs to offer the above, started into growth (No. 48 pots), at 12s. and 18s. per dozen.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Cheap Palms.
ELAIS GUINEENSIS, 5 feet, ARENGA OBTUSIFOLIA, 4 feet, 6s. each, and others. Address, E. F. G., Post-office, Basingstoke.

Mangel and Swede.
JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself.
Bardney Manor, Lincoln.

ROBINSON'S CHAMPION DRUMHEAD CABBAGE.—Extra good autumn-sown plants, price 3s. 6d. per 1000.
JAS. IVERY AND SON, Dorking Nursery, Surrey.

To the Trade.
ASPARAGUS, 1-yr., 2-yr., and 3-yr. TROPÆOLUM CANARIENSE.
JAMES BIRD, American Nurseries, Downham.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.
Mr. WEBB, Calcot, Reading.

Fruiting and Planting Vines.
THE COWAN PATENTS' COMPANY (late Meredith) have still on hand a good selection of the above. Catalogues and prices on application. They can also offer good Fruiting and Succession PINES.
The Vineyard, Garston, near Liverpool.

QUEEN and BLACK JAMAICA PINES, clean and healthy—about 100 Succession for Sale. Offers invited. Apply to
Mr. W. CRUMP, Blenheim Gardens, Woodstock.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

MESSRS. FRASER AND BENTON, HORTICULTURAL AND AGRICULTURAL AUCTIONEERS AND VALUERS, Romford and Grays, Essex.

Transit Agency for Plants, Seeds, &c.
C. J. BLACKITH AND CO., late BETHAM & BLACKITH, Cox's and Hammond's Quays, Lower Thames Street, London, S.E.—Forwarders to all parts of the World.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 98, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Hothouses, Hot-water Apparatus, &c.
HALLIDAY AND CO., HOTHOUSE BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates and Plans free. Best Construction! Best Materials! Best Workmanship! Catalogues free.
Offices: 22, Barton Arcade, MANCHESTER.

SALES BY AUCTION.

Bagshot, Surrey.

IMPORTANT UNRESERVED SALE of the First Portion of the HEATHERSIDE COLLECTION of POT PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION on the Premises, The Heatherside Nursery, Bagshot, Surrey, twenty minutes' drive from the Farnborough Station, on TUESDAY, June 6, at 1 o'Clock precisely, the first portion of a valuable Collection of GREENHOUSE PLANTS consisting of choice Ericas of sorts, Camellias, Azaleas, Yuccas, Aralias, Phormiums, 1000 Chamærops, 5000 Roses in pots, 5000 Clematis, a quantity of Hardy Climbers, &c.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, of the Manager, Mr. Thornton, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

N.B.—The valuable FREEHOLD ESTATE of 267 Acres, to be SOLD. For price and particulars apply to the Auctioneers as above.

Kelvedon, Essex.—Preliminary Notice

Of a Highly Important Unreserved SALE of the celebrated MARKS HALL COLLECTION of EXHIBITION STOVE and GREENHOUSE PLANTS, containing many matchless specimens.

MESSRS. PROTHEROE AND MORRIS have been favoured with instructions from Mrs. Honywood to SELL the above by AUCTION, on the Premises, on THURSDAY, June 22, at 12 o'Clock precisely. More detailed particulars will appear next week.

Messrs. PROTHEROE AND MORRIS, Auctioneers and Estate Agents, 98, Gracechurch Street, E.C.; and Leytonstone, Essex.

Pine-apple Nursery, W.

FINAL CLEARANCE SALE of STOVE and GREENHOUSE PLANTS, BEDDING PLANTS, IMPLEMENTS in TRADE, HORSES, CARTS, VANS, &c.

MR. J. C. STEVENS will SELL by AUCTION, on the Premises, Pine-apple Nursery, Edgware Road, St. John's Wood, W., on WEDNESDAY, June 7, and following days, at 1 o'Clock precisely each day, without the slightest reserve, the REMAINING STOCK of valuable PLANTS in great variety, with an enormous quantity of BEDDING PLANTS, together with the Trade Implements, Horses, Carts, Vans, Harness, &c.

On view two days prior and mornings of Sale, and Catalogues had on the Premises, and of Mr. J. C. Stevens, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

Orchids, Stove and Greenhouse Plants, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, June 8, at half-past 12 o'Clock precisely, a small COLLECTION of ORCHIDS and SPECIMEN STOVE and GREENHOUSE PLANTS, the property of a Gentleman, several Importations of ORCHIDS, TREE FERNS, PALMS, &c.

On view the morning of Sale, and Catalogues had.

Mr. John Thompson's Carr Nurseries, Doncaster, YORKSHIRE.

VALUABLE FREEHOLD ESTATE.

MESSRS. THOMPSON AND WOOD will SELL by AUCTION, by order of the Executors of the late Mr. John Thompson, at the Royal Hotel, Doncaster, on FRIDAY, June 16, at 6 for 7 o'Clock in the evening, subject to Conditions of Sale to be then read, the following valuable FREEHOLD NURSERY LAND, RESIDENCE, COTTAGES, GREENHOUSES, and other Buildings, situate one mile from the important market town of Doncaster, viz.:—

	A.	R.	P.
LOT 1.—A PLOT of LAND, used as Nursery Ground, well sheltered with Beech and other hedges, and containing the following erections, viz.:—A well-built eight-roomed Dwelling House, standing within its own pleasure garden. A Building, consisting of a two-stall Stable, Implement Shed, Coach-house or Potting Shed, with Offices and Seed Warehouse above. A Span-roof Plant-house, 47 ft. by 21 ft. 6 in., fitted with requisite Water Tanks, Stone Slab, Plant Stands, &c., and Plant Pit attached thereto—38 ft. 6 in. by 4 ft. A Vinery, 30 ft. by 15 ft. 6 in., stocked with Vines in a bearing condition. A Propagating House behind, 30 ft. 6 in. by 10 ft. A Span-roof Cucumber House, 55 ft. by 15 ft. A range of Forcing Pits, 77 ft. 6 in. by 6 ft. A Span-roof Plant Pit, 54 ft. 6 in. by 6 ft. 6 in. The Wells, Pumps, Heating Apparatus, and other conveniences, are in a very complete and superior condition, well adapting this plot for the purposes of either a Private Residence or a Nursery and Market Garden, the whole Plot containing by recent survey	4	0	36
LOT 2.—A PLOT of LAND, also used as Nursery Ground, adjoining Lot 1, and containing, by recent survey	4	1	7
LOT 3.—A PLOT of LAND, also used as Nursery Ground, adjoining Lot 2, with two Cottages, a Vinery, 22 ft. by 13 feet, stocked with Vines in a bearing condition; a Plant Pit, 32 ft. by 6 ft. 9 in.; a Store Shed, with flag floor, Piggeries and Hencote, containing, by recent survey	5	0	27
Total Acres	13	2	30

The purchaser of each lot may take at a valuation in the usual way the whole of the large stock of FOREST and FRUIT TREES, SHRUBS, and PLANTS, growing thereon, and also the divisional HEDGES growing on Lot 1, and if not so taken the Vendors reserve the right to remove the same up to January 1, 1877, when possession can be had.

The whole of the Land is of a most fertile and productive nature, and well adapted for a Nurseryman and Market Gardener, having for twenty years received unremitting care and attention from the late owner, who spared neither pains nor expense in his endeavour to make the same a model garden and nursery.

Particulars of the Stock and a plan of the Estate and further information may be had on application to

Mr. F. M. THOMPSON, 18, French Gate, Doncaster; the Auctioneers, Great Grimsby, Lincolnshire; or at the Offices of COLLINSON, LITTLEWOOD, AND PARKIN, Solicitors, Doncaster, June 1.

TO BE SOLD, by PRIVATE CONTRACT, the GOLDEN CROSS NURSERIES, with extensive Glasshouses, Dwelling-house, &c., situate near Stroud, Gloucestershire. Apply to

RESTALL AND FORD, Auctioneers, Stroud.

TO BE SOLD, about 16,000 feet of GLASS, specially erected for Grape Growing for Market purposes, built regardless of cost and upon the most approved principles. The heating is most efficient, and the working details throughout perfect. The Houses are stocked with young Vines in grand condition and just coming into fruit.

TO BE LET, upon long Lease, about 4 acres of rich GROUND which is attached, and within 4 miles of Covent Garden, situate south. Apply to

Mr. RANSLEY TANTON, Horticultural Valuer: Office, 171, High Street, Borough, London, S.E.

THE WISBECH GREAT ANNUAL ROSE SHOW and HORTICULTURAL EXHIBITION will be held in the Grounds of Colville House, on THURSDAY, June 29. All Exhibitors compete without entrance fees. Schedules of Prizes and all information on application to

Wisbech. CHARLES PARKER, Hon. Sec.

TUNBRIDGE WELLS HORTICULTURAL SOCIETY.

The ANNUAL GRAND EXHIBITION of FLOWERS, PLANTS and FRUIT, will be held on FRIDAY, July 7, in the Grounds adjoining the Calverley Hotel. Prizes open to all England. Schedules may be obtained of, and Subscriptions paid to

Mr. E. F. LOOF, Parade, Tunbridge Wells.

Arrangements having been made for the exhibition of articles connected with Flowers, Fruit, and Gardening, an early application for space to the Secretary is requested, the amount being limited.

SANDOWN PARK CLUB. GRAND FLOWER and FRUIT SHOW.

A GRAND FLOWER and FRUIT SHOW, under distinguished Patronage, will be held in Sandown Park, Esher, Surrey, on FRIDAY and SATURDAY, July 7 and 8, when upwards of £350 will be given in Prizes. Schedules are now ready, and may be had on application to

JOHN WILLS, Royal Exotic Nursery, Onslow Crescent, South Kensington, S.W.

J. WHITTAKER BUSHE, General Manager.

GREAT BIRD SHOW, YORK, JUNE 14, 15, and 16. ENTRIES CLOSE on SATURDAY, June 3.

13, New Street, York. JNO. WILSON, Sec.

BATH and WEST of ENGLAND SOCIETY (Established 1777) and SOUTHERN COUNTIES ASSOCIATION.

Patron: H.R.H. the PRINCE of WALES, K.G.

President: The Earl of DUCIE.

HEREFORD MEETING, 1876.

GREAT EXHIBITION of LIVE STOCK, POULTRY, MACHINERY, IMPLEMENTS, WORKS of ART, and HORTICULTURAL SPECIMENS, June 5, 6, 7, 8 and 9.

JOSIAH GOODWIN, Sec.

4, Terrace Walk, Bath.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION, for the relief of decayed Farmers, their Widows and Orphans.

Patron—HER MAJESTY THE QUEEN.

President—His Grace the Duke of RICHMOND AND GORDON.

Allowances to Pensioners:—

Married	£40 per annum.
Male	20 "
Widows and unmarried Orphan Daughters	20 "

Every information to be had of the SECRETARY, by whom Subscriptions and Donations will be thankfully received.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.—The ANNUAL GENERAL MEETING will be held at Willis's Room, St. James's, on WEDNESDAY, June 21, at 11 o'Clock precisely; and the ELECTION of PENSIONERS will take place on the same day at 11.30 o'Clock.

All Subscriptions shall be deemed payable on January 1 in each year; and no Contributor shall vote in respect of an Annual Subscription while the same is in arrear.

Offices of the Institution—

No. 26, Charles Street, St. James's, London, S.W.

BATH and WEST of ENGLAND SHOW, Hereford, June 5, 6, 7, 8, and 9.

STAND No. 192.

JAMES DICKSON & SONS, 108, Eastgate Street, and "Newton" Nurseries, Chester.

Primulas, Primulas, Primulas.

WILLIAMS' superb strain, 1s. 6d. per dozen, 10s. per 100: package and carriage free. CINERARIAS, choicest assortment, same size and price. The above are quite equal to those I have sent out in previous years. Cash with order.

JOHN STEVENS, The Nurseries, Coventry.

To the Trade.

JOHN LAING'S Annual TRADE CATALOGUE, containing the Novelties of the present season, has now been forwarded to all Customers and the Trade generally. Any friends omitted, and intending purchasers, can have a copy sent, post-free, at once, on application at

The Nurseries, Forest Hill, London, S.E.

Australian Plants and Seeds.

EUCALYPTUS GLOBULUS, PALMS, CYCADS, FERNS, and all kinds of PLANTS and SEEDS indigenous to Australia, Fiji, &c., supplied on the most reasonable terms. Priced CATALOGUES and Special Quotations on application.

SHEPHERD AND CO., Nurserymen and Seedsmen, Darling Nursery, Sydney, New South Wales. (Established 1827.)

Agents: Messrs. C. J. BLACKITH AND CO., Cox's Quay, Lower Thames Street, London, E.C.

White Verbenas.

S. BIDE can still supply a few thousand WHITE VERBENAS, strong, well hardened plants, fit for immediate bedding, at 8s. per 100; package free for cash.

GERANIUM, Crystal Palace Gem, good strong stocky plants, in single pots, 20s. per 100.

S. BIDE, Alma Nursery, Farnham.

PYRUS MAULEI.—This hardy Japan fruit still continues to produce its gorgeous orange-scarlet flowers, with an abundant crop of fruit set at the same time. The distinct character and utility of this fruit must commend itself as a great favourite to every garden in Britain. Plants now sending out in pots, at 21s., 15s., and 10s. 6d. each.

WM. MAULE AND SONS, The Nurseries, Bristol.

A. M. C. JONGKINDT CONINCK begs to offer:—

CROCUSES, DUC VAN THOLL TULIPS, LILIES, &c., at the lowest prices.

CRYTOMERIA JAPONICA, strong 1-yr. seedlings, 20s. per 1000.

Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

NEW H.P. ROSE, TRIOMPHE DE FRANCE, strong plants, with from twelve to twenty joints, 2s. 6d. each.

Raiser's description:—"Beautiful bright carmine, of extra large size, very full, opening well, perfect form; a good and free bloomer, growth rather vigorous; a most distinct and grand Rose. This splendid variety has been exhibited as a seedling, received its name from the judges, who awarded it a gold medal £8 in value."

TEA ROSES.—MARIE GUILLOT, the best Exhibition White and the finest Tea Rose known, 2s. each.

PERLE DES JARDINS, the best perpetual blooming Exhibition Yellow, 2s. each.

JEAN DUCHER, most distinct and beautiful, 2s. each.

All by the dozen or 100. Price on application.

H. BENNET, Manor Farm Nursery, Stapleford, Salisbury.

DAVID LLOYD AND CO. (LIMITED).

CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.

Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following:—

J. T. RUBERY, 88, Rumford Place, Liverpool.

SUMMERS AND BOULTON, Dawley, Shropshire.

HORTON AND PERRY, Merchants, Wolverhampton.

THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.

R. AND J. TAYLOR, 17, Vachel Road, Reading.

AGENTS WANTED.

New Catalogue of Bulbs, Fruits, Plants, &c.

ROBERT PARKER begs to announce that his New CATALOGUE is now published, and will be forwarded to applicants. It contains Select Descriptive and Priced Lists of Alpine and Herbaceous Plants, Aquatic and Marsh Plants, Begonias, tuberous-rooted; Bulbs, Chrysanthemums, early blooming bedding varieties; Delphiniums, Ferns, hardy, greenhouse and stove; Fruit Trees, Grapes, Hardy Climbing and Wall Plants, Iris germanica, miscellaneous Bedding and Decorative Plants, Narcissus, Palms and Cycads, Pæonia sinensis, Phlox, herbaceous; Potentillas; Pyrethrums, double-flowered; Sweet Violets, &c.

Exotic Nursery, Tooting, Surrey, S.W.

E. G. HENDERSON AND SON. SEEDS—EXTRA QUALITY.

PRIMULA SINENSIS FIMBRIATA, 2s. 6d. and 5s. per packet.

" " FLORE PLENA, 2s. 6d. and 5s. per packet.

CINERARIA and CALCEOLARIA, 2s. 6d. and 5s. per packet.

CYCLAMEN PERSICUM, choice quality, 1s. and 2s. 6d. per packet.

" " double-flowered, 2s. 6d. and 5s. per packet.

Wellington Nursery, St. John's Wood, N.W.

New Zealand Native Shrub and Tree Seed.

GEORGE PURDIE AND CO. have always on hand an assortment of the above, carefully selected. Three and Five Guinea Collections, including the leading AUSTRALIAN GUMS and WATTLES, post-free to all parts of the World. All Orders must be accompanied by a remittance.

GEORGE PURDIE AND CO., Seed Merchants, &c., Timaru, Canterbury, New Zealand.

Ferns.

W. AND J. BIRKENHEAD devote almost the whole of their attention to the Cultivation of BRITISH and EXOTIC FERNS. Their Collection consisting of many thousands, they are enabled to offer them by the dozen or hundred, at most reasonable Prices. CATALOGUES sent on application.

Fern Nursery, Sale, near Manchester.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000; and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.

Wonersh Nursery, Guildford, Surrey.

GIANT ASPARAGUS PLANTS, the best that money can procure, all certain to grow, 2s. 6d. per 100. This delicious vegetable does not require half the expense usually incurred in planting it. See RICHARD SMITH'S SEED LIST for 1876.

Extra strong SEAKALE, 2s. per dozen.

RICHARD SMITH, Nurseryman, Worcester.

Verbenas, Verbenas.

JOHN SOLOMON offers the following good, strong plants, well hardened and established in single pots:—VERBENAS, scarlet, purple, white, and other mixed sorts, 12s. per 100; GERANIUMS, Vesuvius, Silverleaf, and Flower of Spring, £1 per 100; CALCEOLARIAS, best bedding yellows, 12s. per 100; LOBELIAS, speciosa, pumila, and Blue King, 12s. per 100, all true, from cuttings; HELIOTROPES, best bedding sorts, 12s. per 100. Package included.

Cash to accompany all orders.

Islington Nursery, Park Street, Islington, N.

Carriage and Package Free
to any Railway Station in Great Britain.

TWELVE BEST NEW FRENCH ROSES for 1876 on receipt of Post-office Order for 27*s.* 6*d.*

TWELVE BEST TEA and NOISETTE ROSES on receipt of Post-office Order for 21*s* ; 24 for 40*s.*

The Plants are all exceedingly healthy and vigorous.
EWING AND COMPANY, Eaton, Norwich.

CUTTINGS of GERANIUMS, &c.—One Hundred GERANIUMS, in 40 choice varieties, including Tricolor, Gold and Bronze, Variegated, Zonal, Nosegay, and Ivy-leaf, for 10*s* ; 50, 5*s* 6*d.* ; 25, 3*s.*
24 Fancy PELARGONIUMS, 3*s.* 6*d.* ; 12, 2*s.*
24 CHRYSANTHEMUMS, 2*s.* 6*d.* ; 12, 1*s* 6*d.*
24 POMPONS, 2*s.* 6*d.* ; 12, 1*s* 6*d.* 24 FUCHSIAS, 2*s.* 6*d.* ; 12, 1*s.* 6*d.* All post-free. Catalogues one stamp.
J. COOMBS, The Ferns, Enfield.

CHEAP PLANTS, post-free.—Twelve new Fuchsias of 1875 for 4*s.*, 12 choice older sorts, 2*s.* ; 12 choice Coleus, 2*s.* ; Dr. Denny's second set of 7 beautiful Zonal Geraniums, 2*s.* 6*d.* ; 12 choice Geraniums for pot culture, 3*s.* ; 12 Ageratum Countess of Stair, 2*s.* ; 12 Imperial Dwarf, 1*s.*, or the whole of the above post-free for 15*s*, carefully packed.
JOSEPH LEIGH, Sandy Lane Nursery, Lowton, near Newton-le-Willows, Lancashire.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of
WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

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BEDDING GERANIUMS, Zonal and Nosegay, 16*s.* and 20*s.* per 100.
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NEW and SELECT LANTANAS.—This free-blooming class of Plants is very useful for Bedding (equal to Verbenas), and they also make desirable pot plants, blooming all through the season. Twelve select and very superb varieties, 2*s.* 6*d.*, post-free, from
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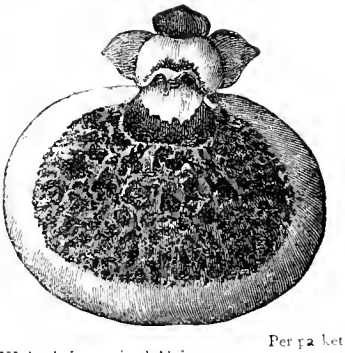

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HELIOTROPIUM, finest dark, 6*s.* per 100 ; or large plants, 1*s.* 6*d* per dozen, 10*s.* per 100.
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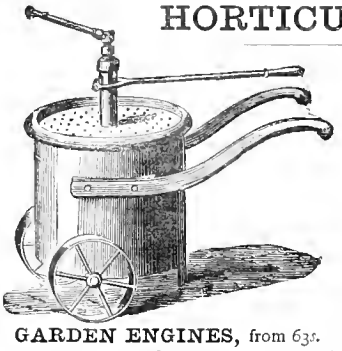

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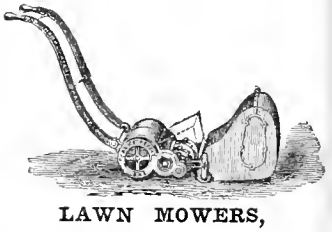

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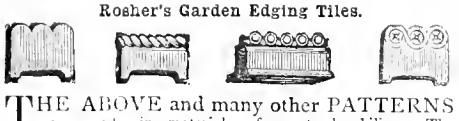

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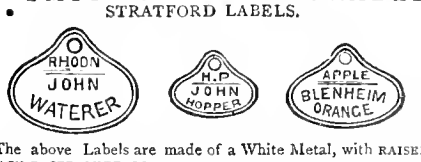

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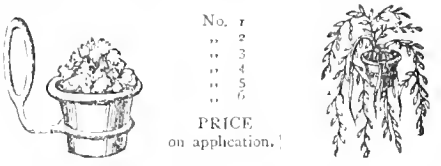

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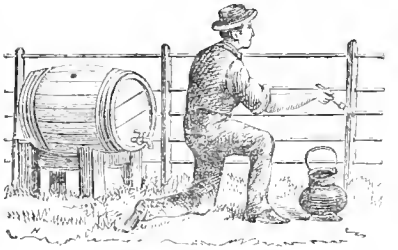

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Sold in all Colours.
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THE GRANITIC PAINT.—Its body is superior to Lead, its durability far greater, and it is more economical. Sold, ground in Oil, in ALL COLOURS, by the GRANITIC PAINT COMPANY, Removed to 45, Fish Street Hill, E.C.

Damp Walls Cured and Decay in Stone Prevented,
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Window Glass, Sheet Lead, Paints, &c.
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87, Bishopsgate Street Without, E.C.

WILLS' NEW HYBRID DRACÆNAS.

RAISED BY F. BAUSÉ.

The following six splendid Novelties will be ready for sending out on and after June 1.

For descriptions see various articles in the *Gardeners' Chronicle, Journal of Horticulture, The Garden, Gardeners' Magazine, &c.*

D. BARRONI (terminalis ♀, regina ♂).

A very striking variety, with the bold spreading habit of D. Youngii. The leaves are oblong, 5½ inches broad, spreading or half-drooping, of a dark bronzy green, with a broad and irregular edging of mottled majenta on the younger leaves, the edges of the older leaves being of a deep magenta colour. The edges of the leaf-stalks are of a rosy pink. The young leaves come first of a creamy blush, with a rosy tint on the under-surface, and in some cases they take on this rose-ite hue on the upper side. It is a fine and noble-habited variety, of great beauty.

Price 2 Guineas.

D. TELLINGII (ferrea ♀, regina ♂).

A bold-habited sort, almost emulating the aspect of a Musa. The leaves are oblong, 6 inches broad, drooping or recurved, of a bronzy green, with an edging of bright rosy pink, which in the older leaves deepens into crimson, the leaf-stalks being also nicely coloured at the edge. It has the boldest and broadest leaves in the whole series, and they are, moreover, remarkably stout in texture.

Price 2 Guineas.

D. IMPERATOR (nigrescens ♀, regina ♂).

A remarkably bold and distinct-looking plant, of free growth and erect habit; the leaves are broadly oblong-ovate, 5 inches across, erectly spreading, of a dark or bottle-green, with dark purple edge and costa, the younger leaves breaking out into a conspicuous broad marginal variegation of pink and creamy white, more or less flushed and mottled with a pale tint of magenta. The back of the leaves seem to be strongly coloured with purple. It is a well marked variety, bearing evidence of its female parentage in the dark purple midrib and margins of the older leaves.

Price 2 Guineas.

DRACÆNA RECURVA.

This is one of the fine varieties, having broad oblong leaves, and, in this instance, they are strongly recurved, though less so than in D. voluta, giving the plant a remarkably close and compact appearance. The leaves are of a deep green colour, variegated with broad sectional streaks of majenta-pink, and margined, as also is the stalk, with a narrow band of the same colour. Its compact growth amongst the large-leaved varieties gives it a very distinct character.

Price 2 Guineas.

DRACÆNA NITZSCHNERII.

This is a fine bold-habited variety, with broad oblong, dark green recurved leaves, the younger central ones freely but irregularly marked with creamy variegation, suffused with rosy pink, especially near their base, the older leaves narrowly margined with deep rosy red, which is continued down the margin of the leaf-stalks. It is a fine novelty, grouping with those having a rather light coloured variegation.

Price 2 Guineas.

DRACÆNA REGALIS.

A bold-habited free-growing vigorous variety, having densely-set oblong recurved leaves, of a deep bronzy green, margined unequally with rosy red, and having the leaf-stalks also similarly edged; the younger central growths are broadly edged with cream colour flushed with pale rose. It forms a fine massive and truly regal plant, and from its free growth and its ample foliage is very effective.

Price 2 Guineas.

Three Medals were awarded to the above Novelties, including the Grand State Medal, at the Brussels International Exhibition, on April 30, 1876.

THE ANERLEY DRACÆNAS.

Extract from the "Gardeners' Chronicle," May 27, 1876.

"Some time since (*Gardeners' Chronicle*, 1875, iv. 615) we gave an account of a marvellously fine collection of seedling Dracænas, which had been raised by Mr. Bausé, at Mr. Wills' nursery, at Anerley. That account referred to a selection of a considerable number of the finest of the varieties which had at that time broken into colour. As was to be expected, however, amongst the thousands of judiciously crossed seedlings Mr. Bausé had obtained, the first selection by no means exhausted all the gems that were worth preserving, and a subsequent visit has enabled us to confirm Mr. Wills' opinion that a further selection from amongst Mr. Bausé's fondlings should be made. The twelve following varieties, some of which formed part of the collection shown at Brussels, have accordingly been selected to be grown on, along with the previously selected set, of which, we believe, some half a dozen kinds are to be let out immediately."

ROYAL EXOTIC NURSERY & WINTER GARDEN,

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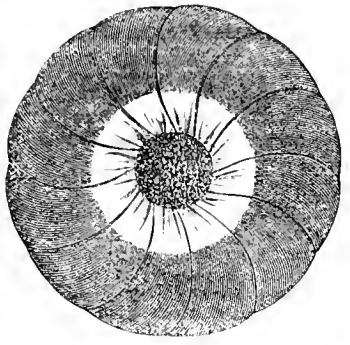

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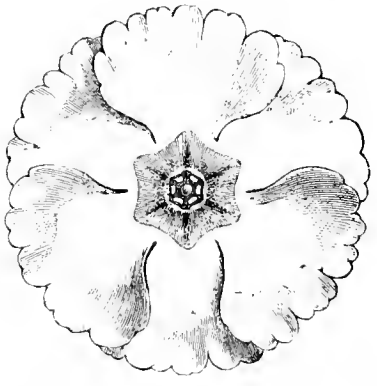
This will be found unequalled by any in cultivation, the seed having been saved from the finest named varieties only.

Price 2*s.* 6*d.* per packet, post-free.

From Mrs. A ALLERTON, *Prittlewell, May* 8.

"Our Cinerarias this year (from your seed) are splendid: they far surpass any I saw at the Botanical Gardens yesterday."

The Finest Strain of Primula.



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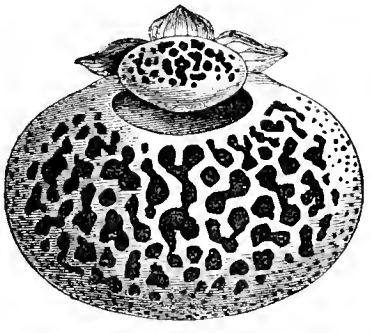
This choice stock has been carefully selected from the largest ringed flowers of good colour. Habit, robust; with bloom thrown well above the foliage.

Red, white, or mixed, 2*s.* 6*d.* per packet, post-free.

From W. EDWARDS, Esq., *Wellington, January* 21.

"I cannot help saying that the Primulas from your seed have always given great satisfaction, but this year more than ever."

The Finest Strain of Calceolaria.



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This splendid strain has been most carefully selected from the very finest collections in cultivation. The plants are compact in habit, with beautiful green foliage, and a profusion of bloom. The flowers are perfect in form and substance, and of every shade of colour.

Per packet, 2*s.* 6*d.*

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SUTTON & SONS,
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FLOWER SEEDS.

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AURICULA, saved from the finest show varieties ..	1	6
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BEGONIA FŒBELII (new).—This is a new and distinct species	2	6
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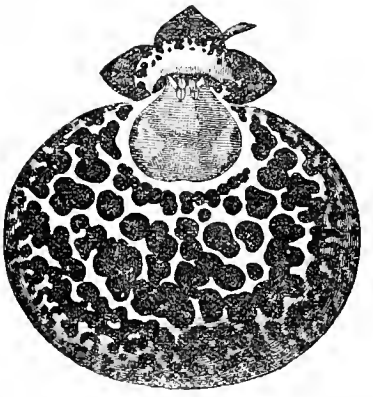

CALCEOLARIA, Williams' Superb Strain, 5*s.*, 3*s.* 6*d.*, 2*s.* 6*d.*, and	1	6
CARNATION, from choice double flowers, 5*s.*, 3*s.* 6*d.*, 2*s.* 6*d.* and	1	6
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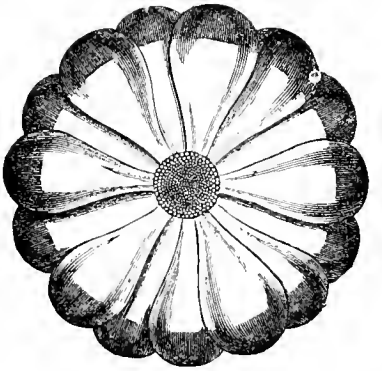
„ „ GIGANTEUM	5	0



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PINK, finest mixed	1	6
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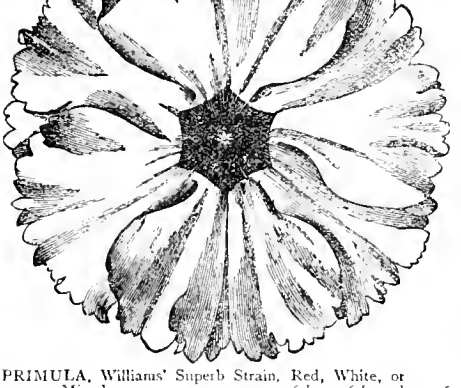

PRIMULA, Williams' Superb Strain, Red, White, or Mixed .. .. .. 5*s.*, 3*s.* 6*d.*, 2*s.* 6*d.*, and	1	6
STOCK, Williams' Improved Giant Scarlet Brompton ..	1	6
„ East Lothian, an assortment of 3 colours	2	6
WALLFLOWER, Harbinger, Autumn and Winter Flowering	1	0
„ Saunder's Dark	1	0

ILLUSTRATED NEW PLANT CATALOGUE
Is now ready, gratis and post-free on application.

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Upper Holloway, London, N.

SATURDAY, JUNE 3, 1876.

LABDANUM.

THE CISTUS: THE ANEMONE.

UPON two occasions in Old Testament history reference is made to a certain odoriferous gum or resin, in the Hebrew called *lôt*. It was one of the articles of commerce which the merchants were conveying to Egypt when Joseph was sold to them by his envious elder brothers: "And behold a company of Ishmaelites came from Gilead, with their camels, bearing *necoth*, and *tzeri*, and *lôt*, going to carry it down to Egypt; . . . and they sold Joseph to the Ishmaelites for twenty pieces of silver."* In Egypt this *lôt* was evidently held in high esteem, for in the second place of mention it forms a portion of the conciliatory gift sent by Jacob to Pharaoh's chief minister, little thought to be Joseph himself, after the detention of Benjamin: "Take of the best fruits in your land . . . and carry the man a present, a little tzeri, and a little honey, necoth, and *lôt*, nuts, and almonds."† Egypt, a highly civilised country, being destitute of frankincense and spice-trees, everything of this description was doubtless very welcome, always marketable, and appropriate even as an offering to royalty. No absolute proof is attainable, but, comparing the Hebrew *lôt* with the Greek λήδον and λάδανον, the original of labdanum, and considering the various probabilities, there seems good reason to feel sure that all these words denoted the same thing—the Greek ones having their root in the Semitic, and that *lôt* was identical with the λήδον, which Herodotus mentions as a fragrant product of Arabia,‡ which has been famous for over 2000 years, and has long since been proved to be the exudation of the Cistus creticus. Cistus creticus is a first cousin of the celebrated and delicious shrub commonly known in English gardens as the Gum-Cistus; it differs, however, in the size and hue of the flowers. Those of the Gum-Cistus are white, 3 inches across, and resemble a single white Rose, only that, as in a Poppy, at the base of each wrinkled petal there is a patch of crimson-violet. Those of the creticus are of a deep pink colour, only about half as broad as those of the former, and the petals are without spot. Jacquin gives an excellent drawing of the creticus in his admirable old *Icones Plantarum Rariorum*, i., 95, calling it Cistus cretensis. Prosper Alpinus had named it Ladanum creticum. There is a drawing of it also in the *Flora Græca*, pl. 495. The Gum-Cistus is so termed on account of the clamminess and balsamic odour of the young shoots and opening leaves, the scent increasing considerably in warm weather. The odour and the adhesiveness arise from the exudation of a resinous matter similar to that of the *lôt* plant, and which in its native countries is very copious. Hence the epithet "ladaniferus,"§ appropriate, no doubt, as significant of the abundance of the produce, but which, upon historical grounds, would have been better given to the Eastern species. Specimens of the ladaniferus, dried for the herbarium, communicate a yellow

* Genesis xxxvii 25—28. † Ib. xliii. 11.

‡ Lib. iii. 107, 112.

§ This name is applied to two different plants, but they are so nearly related that the distinction seems needless. The ladaniferus of the *Botanical Magazine*, pl. 112, is by some called Cistus cyprius. The Linnean ladaniferus is a native of Spain and Portugal.

gumminess to the paper in which they are laid, and the odour lasts for years.

Three or four other species of Cistus, natives (like the creticus) of the Levantine region, yield a secretion of the same character, though less freely, especially the villosus, crispus, and salicifolius. The Cistus Ledon, the name of which sounds so very significantly, is a native of the South of France. Latinised into *Ledum*, this ancient name has been applied in modern times to a well-known genus of the Ericaceæ, some of the species of which have scented foliage.

The labdanum obtained in Eastern countries from the Cistus creticus is soft, fat, and greenish. The best is said to be combed, as in ancient times, out of the beards of goats, these creatures being passionately fond of the plant, and given to browsing upon the branches, so that the gum gets taken up in the purest state. Sprinkled upon live coals it evolves an agreeable and reviving odour, after the manner of gum-benzoin. To this day it is highly esteemed by the Turks, for employment as a pastile. For many ages it had repute in medicine. The Authorised Version of the Old Testament unfortunately renders *lôt* in both the above cited verses by the word "myrrh," correctly employed in the rendering of other Old Testament passages, but certainly not intended in these. Myrrh, in the Hebrew, has its own distinct name. It was not a product of Palestine, and not likely to have been even known to honoured old Jacob.

Nearly all the species of Cistus, approaching 200 in number, are natives of the countries surrounding the Mediterranean, where they ornament dry banks and rocky surfaces with an inconceivable profusion of flowers, rosaceous in figure, and in various shades of red, purple and yellow, white appearing now and then. As a rule, the petals have a spot of some deeper colour at the base. Which of the many species, if one more than another were meant, the ancients particularly intended by κίστος or κίσθος cannot be determined. Unskilful as they were in botanical classification, they could hardly fail to recognise the near affinity of such members of the genus as attracted their notice; and by κίστος they probably intended all indifferently. When Theocritus speaks of the ῥοδοκίστος, remarking that it blooms in abundance, he probably intends the Cistus incanus.* A special feature in many, perhaps most, of the species of this beautiful race, is the extreme fugitiveness of the flowers, a peculiarity nowhere more strikingly shown than in the ladaniferus. In early morning this plant is decked with bloom in every part; by noon the petals are usually all strewn upon the ground. Possibly the perishing flowers of one of the Holy Land species were present to the mind of the Apostle when he used the words "I die daily," for whatever the direct application or didactic intent, figures of speech of this character, traced to their source, are always found to rest upon some fact in external Nature; and to an accomplished observer like St. Paul, nothing could more powerfully suggest thoughts of departure and daily renewal in things spiritual than the spectacle of the Cistus flowers. It is in the morning alone that they are beheld in perfection. Like the purple bells of the Convolvulus, the snowy ones of the hedge Bindweed, wet with dew—like the sweet and simple Tragopogon in the meadows, that has so to hasten its flowers and seeding before laid low by the stroke of the scythe—like many another to which the lark sounds its sweet *réveiller*, but excelled by none, the Cistus flowers arrive while the shadows of the trees still reach across the grass, beautiful and countless. A bank of many mingled species at six on a bright summer's morning constitutes one of the loveliest sights in Nature. Never was it able to be witnessed more charmingly than in Mr. W. W. Saunders' garden at Reigate. Old England bids fair for collateral honours in the abounding gold of her little Helianthemum vulgare.

It is probable that these swiftly departing Cistuses were the veritable Anemones of the classical poets, literally the Windflowers. Some say that the name was given because the Anemone "blossoms at a windy season of the year!" The true idea is that of something soon wafted away. No flower bearing the name of Anemone at the present day is prone to disappear before the wind. So far from it, Anemones are remarkably persistent flowers, as we should expect, from the fact of their coloured beauty residing, not in petals, but purely and wholly in calycine leaves. No Anemone has veritable petals. The entire blossom consists of richly and often splendidly developed sepals. When of such nature, the duration of a flower is almost always prolonged, though with an exception in the Marsh Marigold. According to the fable preserved by Bion, in that exquisite elegy, the "Epitaph of Adonis," the Anemone sprang from the tears shed by Venus over the corpse, after the youth's death by the tusk of the boar. Ovid repeats the story at the end of the tenth book of the *Metamorphoses*, but confuses the Anemone with the Rose, attributing the origin of the flower to the blood instead of the tears. The older form of the myth, no doubt, is the genuine one, and in it would seem to be contained more meaning than at first appears—the most fugitive of flowers aptly representing the grief of the frail goddess, whose cheeks, like those of a child, a few minutes after her trouble, were once more dry. Ovid's picture of the Anemone (understanding thereby the Cistus) is perfect, and clearly has no reference to the Rose *ipsissima*. The association of the Cistus with premature death, so charmingly introduced in the old Greek epitaph, is taken up by Moschus, in the elegy which he writes in turn upon Bion. This would be in the island of Sicily, about 280 B.C. Theocritus (v. 92) classes the Anemone with the Dog Rose, κυνὸς βατος—a noticeable fact, seeing that Cistuses are commonly called Rock Roses, and this may partly account for the confusion in Ovid. Theocritus adds that neither flower will compare with the genuine Rose. That good old-fashioned hardy annual of the flower-garden, the Flos Adonis, an inmate once of the cornfields of the southern counties, was so-called because of the blood-red hue of the blossom. By the time of Pliny the name of Anemone, whatever it originally applied to in the Greek poets, no doubt had become transferred or extended to the flower at present so-called, his allusion to the "leaves like those of Parsley" being unmistakable (*vide Lib.* xxi., cap. 23). *Leo Grindon, Manchester.*

* *Idyll*, v. 131. The incanus is figured in the *Flora Græca*, v. 494.

New Garden Plants.

FRITILLARIA AUREA, *Schott, in Œster. Bot. Wochenblatt*, xiv., p. 137.*

Having been favoured with cultivated specimens of this species by Herr Leichtlin, I find that it is quite distinct from F. lutea, under which I had provisionally placed it in a monograph of the genus in the *Proceedings of the Linnean Society*, vol. xiv., p. 259. The shape of the flower is like that of F. Meleagris, but it is bright yellow both inside and out, with abundant, minute, nearly black tessellations, a minute round nectary, leaves as abundant and close as in F. lutea, but not so large. It is a native of the Taurus range in Cilicia, and was discovered by Dr. Kotschy.

Stem glaucescent, half a foot high. Leaves about ten to a stem, the lower ones in whorls of three apiece, linear, glaucescent, fleshy, 2—3 inches long, ¼—⅜ inch broad at the middle, the bract leaf solitary. Perianth solitary, cernuous, bell-shaped, an inch deep, rounded equally from the middle to the base, bright yellow both inside and out, the divisions with 7—9 rows of distant small black subquadrangular tesseræ much broader than deep; the outer segments oblong, ⅜ inch broad at the middle, the inner ones obovate, obtuse, ½ inch broad at the top. Stamens one-third short of the perianth; anther much shorter than the flattened filament. Ovary cylindrical, ¼ inch long; style ⅜ inch deep, tricuspidate at the tip only. *J. G. Baker.*

* Semipedalis, foliis circiter 10 linearibus glaucescentibus sæpe verticillatis 2—3-poll. longis; perianthio campanulato basi nullo modo truncato luteo maculis parvis nigricantibus 7—9-seriatis, segmentis exterioribus oblongis, interioribus obovatis omnibus foveola parva 3 lin. supra basin præditis; staminibus perianthio triente brevioribus; antheris filamentis applanatis distincte brevioribus; pistillo perianthio paulo breviore, ovario cylindrico, stylo apice solum tricuspidato.—Regel, Gartenfl., t. 840.

MASDEVALLIA KLABOCHORUM, *n. sp.**

This is a new western South American Masdevallia, allied to the elegant M. caudata, Lindl. (not caudata of English nurserymen), Shuttleworthii, and the five other species of same group. The flowers open fully. Judging from a coloured sketch they have quite extraordinary colours, novel and unheard of in all the genus. They are white inside, blackish grey outside. Tails, petals, lip, and column yellow. Thus they must have moved patriotic feelings in the hearts of Messrs. Klaboch, the gallant discoverers, who are Czechian Austrians. Black and yellow are the colours of the Austrian empire, which one sees so much of on the barricades which form the demarcation of the Kaiserstaat, and which were for many years, probably centuries, the not very comfortable colours of the dress of the Austrian army. The flowers reach nearly 3 inches from the tip of the tail of the superior sepal to the tails of the inferior sepals. I do not pretend that the plant is by any means a rival of the grand Klabochian marvels, Bollea cœlestis, for which we are all sighing, and Odontoglossum cirrhosum. There is, however, no doubt that the new Masdevallia must be a puzzling fellow. If the colours prove to be pure, strongly marked, which I cannot judge from a sketch in colours, it may even be rather perplexing. Thus it well may deserve its place in every collection of Masdevallia, giving a new variety; and who would not have a nice collection of Masdevallias now-a-days, when these creatures are the declared pets of amateurs? I have obtained the original sketch in colours from M. Roezl, and a few dried flowers from Mr. Sander, all of Roezlio-Klabochian origin. The species is dedicated to Messrs. Klaboch as a *raptatio benevolentiæ*. This *benevolentia* would be to dry nice specimens. *H. G. Rchb. f.*

* *Masdevallia Klabochorum*, n. sp.—(Caudatæ.) Aff. Masdevallia caudatæ, Lindl., et Shuttleworthii, Rchb. f. Cæspitosa, foliorum petiolis nigritis laminas, oblongas obtusas subæquantibus; pedunculis unifloris; sepalis patulis oblongis, summo sepalo latiori quinquenervi; sepalis lateralibus trinervis, omnibus superficie interna ac limbo papuloso asperulis, caudis abruptis subæqualibus; tepalis ligulatis apice minute tridentatis; lamina inflexa insidente in margine; labello cuneato-oblongo subretuso, basi nervorum trium minutissime tricellato; columna apice inæqualiter tridentata. Sepalorum laminæ extus nigræ intus albæ. Caudæ, tepala, labellum, columna flava.—*H. G. Rchb. f.*

ORCHIDS IN BELGIUM.

LIÈGE.—After leaving M. Oscar Lamarche's collection of Orchids we visited the well-known nurseries of Messrs. JACOB-MAKOY. Since my last call at this place there have been many improvements effected: several new houses have been added, and a larger collection of plants, many of which are of recent introduction—such as Palms, Marantas, and Ferns brought together. Maranta Makoyana was first grown at this establishment. There are several large houses of Palms, among which are some fine specimens; also a large collection of Ferns and stove and greenhouse plants. There are some beautiful new varieties of Araucaria, with long narrow foliage, quite distinct from any I had previously seen.

A good many Orchids are grown in this collection of plants. One house is filled with Odontoglots and others that require a cool temperature, such as Masdevallia Harryana, Veitchii, Lindeni, as well as several kinds that are also good, but not of such prominence as the first-named; Odontoglossum Alexandræ, O. Pescatorei, O. Insleayi leopardinum, of which there was a considerable number of imported plants; also O. citrosmum and several other kinds. They were small, but starting well into growth. In the next house also, which was a large lean-to, were many Orchids, mostly small, saleable plants. I noticed a specimen of Angræcum sesquipedale, just off bloom; a good plant of Lælia purpurata, showing well for bloom; Oncidium phymatochilum had two flower-spikes; Cattleya Warneri was growing strong, also Oncidium splendidum, and many others equally rare. There were some good plants of Vandas, Phalænopsis, &c., but my time was so limited that it was impossible to take notes of all. There is a large outdoor nursery connected with this establishment. I noticed in it some

fine specimen trees, for which, I have no doubt, there is a comparatively large sale in Liège.

Our next visit was to the BOTANIC GARDENS, where, by the kind attention of Professor Morren, we were conducted through this interesting place, where great preparations for bedding out were being made. Our chief object was to see the large collection of Bilbergias, Tillandsias, Æchmeas, &c., which is the most extensive known. There are two large houses full, containing many grand specimens. Professor Morren is the greatest authority we have on this class of plants. I was much pleased to find that we had with us a great connoisseur from France, M. de la Devansaye, of the Château Dufresne, who also has a good collection. It was most interesting to hear the two discussing the merits of these plants, especially as neither Mr. Veitch nor myself knew very much about them. Some, however, we flatter ourselves we do know—some have most beautiful scarlet bracts on scapes rising from the centre of their foliage, and these are sometimes accompanied by bright blue flowers, as in Tillandsia Lindeni for example. Æchmea Maria regina again—nothing can be more beautiful than this; take, for example, the plant exhibited at Brussels. There was a fine one in Mr. Veitch's collection with orange-scarlet bracts and flowers, and also the one called Tillandsia musaica, with pretty variegated foliage; T. tessellata and T. sanguinolenta. Many of these make very nice dinner-table plants; they will also grow on walls in a stove, in baskets, and on blocks hanging from the roof, where they thrive with just the moisture they receive from the syringe. These plants will be more extensively cultivated in England when better known. There are a few Orchids at this place, but they are small.

In the front of these gardens there stands a good range of houses. The centre one contains some fine specimen Palms, also some good Tree Ferns with fine stems, such as Dicksonia antarctica, Alsophila australis, the Silver Tree Fern, Cyathea dealbata, and C. princeps, one of the noblest Ferns; the other houses are filled with miscellaneous plants such as are grown as a rule in botanic gardens. There is not much money laid out here, but a prosperous place like Liège ought to be able to boast of one of the finest botanic gardens in Belgium. The city is itself an improving one, generally called the Birmingham of Belgium, on account of the similarity of the style of business carried on in the two places. There are some grand buildings in its streets, down which are fine avenues of trees. We were favoured by a drive round the city, through the kindness of Professor Morren, and thoroughly appreciated it. Unlike the tameness of scenery usual in Belgium, this place is surrounded by hills; there are also fine rivers, some of which have a great fall of water. We crossed one of these, and found ourselves surrounded by streams. In the centre of this romantic spot stands the residence of Professor Morren, which has a pretty garden in front of it, laid out in a style well suited to a place surrounded by water. There is a fine piece of rockwork, planted with herbaceous and rock plants. The lawn is dotted with trees and flower beds. There are two small houses in which are grown the Professor's favourite plants, consisting of many beautiful varieties of Tillandsias, Bilbergias, &c. We afterwards went to his library and museum, where he has a fine collection of dried plants and drawings, which would take many days to inspect minutely. I cannot quit my present description without saying that it is a charming place; and that the great kindness and hospitality which my friend Mr. Harry Veitch and I received here, will induce us at some future period to renew our visit.

NAMUR: M. FERDINAND KEGELJAN.—This town is about 36 miles from Liège, and I believe about the same distance by rail from Brussels; it is a pleasant ride through a mountainous country, and reminded us of the mountainous and woody districts of our native land. Arrived at Namur, which is a nice town, we found the place to which we were bound but a short distance from the station. Our reception was a grand one, and there we met many friends who were present at the Brussels Exhibition, also invited. Our chief object in visiting this place was to see the collection of Orchids, and I must say that both Mr. Veitch and myself were well repaid. The place is small, but compact. There is a good range of glass, in which we saw a nice collection of Orchids, in the best of health. There were many fine specimens, some of which surpassed any we had seen before; in fact we should have had a difficulty to find a bad plant among them, for they are well cultivated, and especial care is bestowed upon them. The walls of the houses are utilised by growing Ferns and foliage plants upon them, which is highly decorative to a house. Around the stages were Ficus and Ferns growing, and under the pipes even were different plants—all adding richness to the scene. At the end of these two houses there is water flowing from the rocks among the Ferns; these houses are models for amateurs, where not only are beauty and Nature combined, but usefulness, for the Ferns, &c., are good and strong for cutting. In a small garden the ranges of houses can be better adapted for plants, as well as to form an end for the garden. I noticed the order that prevailed even in the potting sheds—everything in its place, and a place for everything. The work of the houses is done at the back, in order that they may be kept clean. The first house is a warm conservatory, which is a most enjoyable structure, where one can sit and admire to his heart's content the beautiful Palms and Tree Ferns, &c., that surround him. The sides and centre are all clear, and the floor prettily covered with Minton's tiles; the seats and tables are in the centre. There is the noble Cyathea princeps, Corypha australis, Areca lutescens, and many other Palms, with Cycads, and flowering plants, which make a good display; also some hanging baskets well filled. I noticed a very fine Orchid in this house, Oncidium zebrinum, 6 feet high, and showing three very long spikes. Next this house was the East India Orchid-house, in which I noticed a fine plant of Aerides Larpentæ and A. odoratum in bloom; also a good variety of Vanda tricolor and V. Batemanni. Cypripedium Veitchii and lævigatum were well-grown. There were intermixed with these plants some Draccena Baptistii, Caladiums, Ferns, &c., all helping to enliven the house.

On the opposite side of the conservatory was a corresponding house, in which were many fine plants—Odontoglossum Alexandræ and O. cristatum, with eighteen flower-spikes; Cypripedium Hookeriæ, Lælia cinnabarina, with its bright orange-coloured flowers, and the well-known Cattleya Skinneri, with its ever-pleasing colour; Oncidium serratum, with its bronzy blossoms edged with gold; Cattleya Aclandiæ, a plant which one seldom sees grown well, and the good old Lycaste Harrisoniæ; Masdevallia Veitchii, also, was a prominent plant, as were Dendrobium Parishii, with its charming coloured blossom; Lycaste Skinneri, with very large flowers; Odontoglossum vexillarium with four spikes; and Cattleya Mendelii showing four flower-spikes. The next was the Cattleya-house, in which were some fine specimens, especially of Cattleya Mossiæ, showing nine very fine sheaths; C. Warneri, gigas, and Leopoldii, were strong, and promising well for bloom. Lælia purpurata and L. mexicana were fine, 3 feet in diameter, and with many flower-sheaths, which, when in bloom, will produce a grand effect. I never saw Cattleya crispa more promising. Chysis Limminghii was extraordinarily good, also C. bractescens; Vanda cœrulea and Lælia elegans were very strong. The material all these plants were grown in was sphagnum moss and crocks; the top moss required to be replaced annually, and the rest every two years. I never saw Cattleyas better rooted or in more robust health. They must receive a good supply of water, as the moss is so flourishing. Leaving this, we arrive at a mixed house, in which the chief plants are Odontoglots, in excellent condition. There were fine plants of O. Hallii, showing three spikes; O. triumphans, very strong; also O. Alexandræ, O. Pescatorei, Trichopilia suavis, well grown; and many others equally good. If M. Kegeljan had shown some of his fine plants at the Brussels exhibition they would have made of themselves a fine display. We spent a pleasant two days' sojourn from Brussels, returning there well satisfied with our outing. *E. S. Williams.*

DISBUDDING WALL TREES.

THESE are generally disbudded too soon and too severely. A superfluity of buds, shootlets, and leaves is Nature's mode of protecting herself against cold. To strip these away too soon is like throwing our coats off in an east wind. Buds are posted in the best places for protecting each other. Their very overcrowding resists cold, and keeps it out. Leave all the buds and shoots as long as possible, and the protection thus afforded is superior to that of double nets or bunting. These extraneous substances exclude light and create draughts, but the crowding of buds and branchlets exclude comparatively little light, and originate no draughts; they also, by virtue of their position, keep out more cold from the blossoms and young fruit than any other sort of protection whatever. It is quite a mistake to talk of the shelter of an overhanging leaf or branch as slight or trifling; on the contrary, it is very tangible in amount, and of the most effective character. The ready mobility of the leaves adds to their efficiency. A mobile protector, such as a dangling straw, or leaf, or twig, breaks the energy of radiation much better than an immovable one. These views are by no means theoretical merely, they are the teachings of experience. One of the most efficient artificial protectors for wall trees is a living coping of Ivy or other evergreen shrub on the top of the wall. Next to this, or even at times superior to it, is a coping of straw bands, made as loosely and with as many loose, dangling straws as possible. But for the litter resulting from the use of such rough protectors, perhaps it would be impossible to better them. The natural shoots owe much of their efficiency to similar properties; and as a matter of fact, Peaches, Apricots, Nectarines, Plums, with a full crop of shoots and good sized leaves, ensure the safety of the blossoms or young fruits up to 8°, or 10° of frost.

In the case of blossoms they are rather too early to get the full benefit of the natural protection of a redundancy. Unfortunately the blossoms open before there is much growth of wood or many fully developed leaves; but in this state the appendages of the flowers afford a considerable amount of protection. In many cases more crops are lost after the fruit is set than before. All the appendages are then thrown off, and the fruit in a naked state is exposed to the rigours of our trying springs. So efficient are what might be called the most flimsy natural protectors that we have seen hundreds of fruit saved from destruction by the corolla of the flower withering up and remaining on the young ovary. This almost transparent membrane has been enough to bring them safely through, while others without it have been blackened with the frost.

Neither can any one of experience doubt the power of buds, shoots, and leaves to protect the fruits they overhang. Their ability has been all too well and too often tested during the last spring. Frosts ranging from 8° to 15° were prevalent during the blooming and early swelling periods. Even under bunting and glass copings most of the exposed fruits were cut clean off. The fruits under nets, double and single, shared the fate of those left unnetted; but beneath the overhanging branches and leaves many fruits escaped unhurt, and form the only crop in many places. Comparing buds, shoots, and foliage to clothing, common sense would suggest that we should not remove any part of it until the cold weather had passed away. As the seasons go of late years, warm weather can hardly be hoped for till June.

Granting, then, the utility of an early growth as a means of protection, the question arises, Would wall trees suffer in health and strength by deferring their disbudding till the end of May or beginning of June? I think not. The first growths of trees exhaust them but little, if at all. It is an arousing rather than a depleting process; anyhow, it is rather an expenditure of last season's vital force than a drain on the current year's resources. More, it arouses the roots and stimulates them to enlarge their runs, and so augment their resources; consequently it is probable, nay, almost certain, that the more early growth the better for the future health and vital power of the tree. This also accords with observation and experience. Early disbudding is not always followed by vigorous growth. No doubt there are often mechanical reasons for this. The exposed shoot gets chilled through for lack of the shelter Nature meant to provide by the shoots removed. The chill checks growth, developes blister, invites aphides, and neither of these are likely to foster growth, but, apart from the early disbudding, lowers vital force.

It is a fallacy to suppose that the growing force of the shoots removed will flow into the few that are left; that force was not developed, and undeveloped force cannot be diverted. The late disbudder is more reasonable as well as more logical. He first developes all the parts of the tree, selects his permanent buds to be developed into shoots with skill and discretion, and then suppresses and diverts growing forces at will; the result being firmer and stronger shoots than by early disbudding. Just as a large stream has more motor force than a small one, so a tree with all its energies aroused into vigour by an early spring will make finer wood and harvest larger fruits than the

same tree with its early efforts of growth suppressed by premature or excessive disbudding.

This brings us to the last point—the mode of disbudding. Many disbud too much as well as too soon. In our rage for fruit we are sometimes apt to forget that growth is not only essential to but must precede fertility. Any one may use a knife, or bill-hook, or saw, to suppress growth or remove it after it is made; but it is the highest cultural skill to mould growth in the making to our purposes, and also to see to it that sufficient growth is made to sustain the permanent health of the tree and its perpetual fertility. This dual purpose should be always present to the mind of the disbudder. The first will save him from disbudding too much, the second from leaving an excess of wood. Neither should this happy mean be reached all at once. A little at a time should be the mode of disbudding. Trees cannot be broken-in all at once by severe disbudding any more than a spirited colt by bit and bridle. Both require "gentleing." Disbudding, in fact, is a process rather than an act, to be repeated twice or so throughout the season. It should extend from May to November, and if properly managed no winter pruning will be needed. For perfect disbudding removes all superfluities of growth at the best time and in the most skilful manner, and leaves the tree fully furnished with wood for the current and all the future years of its life. *D. T. Fish.*

SCIENTIFIC APPARATUS AT SOUTH KENSINGTON.

(*Continued from p.* 698)

3935. "Germinating apparatus, for the simultaneous germination of a large number of seeds, or for the cultivation of microscopical organisms at a constant degree of temperature and moisture. (Exhibitor's construction) (Professor Dr. F. Cohn, of the Institute of Vegetable Physiology in the University of Breslau.) This apparatus satisfactorily replaces the germinating apparatus of Nobbe. The seeds are soaked for twenty-four hours in water, then 200 are placed in each earthenware dish and covered over. The enclosed tin dishes are then filled with water, which keeps in the porous clay dishes the moisture requisite for the development of the seeds. The space between the double walls of the chamber is now filled three-quarters full with water (the height of the water can be seen by the glass gauge), and a small gas flame, governed by a Bunsen's regulator and placed underneath the germinating chamber, keeps the temperature very constant. This apparatus is used for the examination of the germinating power of agricultural seeds, which takes place at the seed control station (Samen-Controll Station) connected with the Institute of Vegetable Physiology. Similar apparatus of different sizes are used in this station continually for the culture of plants, especially microscopical growths, at a constant temperature. They were employed especially by Professor Cohn in his researches on Bacteria.

3936. Apparatus for demonstrating Knight's experiment on the influence of gravity on the direction of the growth of roots and stems of budding plants. (Exhibitor's construction) (Prof. Dr. F. Cohn, of the Institute of Vegetable Physiology in the University of Breslau). Some seeds (preferably Pisum sativum and Zea mays) are soaked for twenty-four hours in water and then attached by long needles, which must not pass through the radicle or the plumule but only through the cotyledons or the endosperm, radially to the circumference of a disc of cork. The apparatus is set in action by connecting the caoutchouc tube of the cover with the water supply or a water reservoir. By regulating the strength of the stream of water the rate of the water-wheel can be increased or diminished. The splashing of the water furnishes sufficient moisture for the germination of the seeds, so that all the roots are developed centrifugally, whilst the stems grow in a centripetal direction. An apparatus similar to this was employed by Prof. Ciesieboki in this Institute of Vegetable Physiology for his researches on the bending downwards of the root (see Cohn's *Beitrage zur Biologie der Pflanzen*, vol. i., part 2). The observations can be made through the glass window, which is, however, generally closed by a shutter in order to keep out the light.

3937. Apparatus for observing the velocity of growth in plants (constructed by Prof. Reincke). Institute of Vegetable Physiology of Gottingen; Director, Prof. Grisebach.

3938. Apparatus for registering the growth of plants. (E. Stöhrer, Leipzic.)"

With reference to the instruments for measuring and recording the rate of growth in plants, we have been favoured with the following remarks, by Professor Dyer:—

Variations in the normal rate of the longitudinal growth of stems appear to be produced by variations in the external conditions of moisture, temperature, and light.

Taking intervals of time as abscissæ and increments of temperature and growth as ordinates, the curves of temperature and growth (formed by connecting the ends of the ordinates) are found to follow one another, rising and falling together, without, however, being related in any more definite manner.

The influence of light is of quite an opposite kind. It is antagonistic to growth. The curve of growth will, therefore, have a maximum during the night and a minimum during the day. But the rate of growth exhibits a certain inertia: light only gradually checks it, so that the minimum is towards evening; and similarly the absence of light only gradually stimulates it, so that the maximum is towards morning.

The essential principle in all the instruments which have been devised for measuring the rate of growth is the same. A thread is attached to the apex of the growing stem and passed over a pulley, being kept stretched by a small weight attached to the free end; as the stem grows the weight falls and the wheel of the pulley revolves.

If now a long index be attached to the pulley the point of this will trace an arc of sufficiently large dimensions to allow of the convenient observation of a difference of rate of movement in different parts of it. In one form of instrument this is done by repeated observations made upon a graduated scale over which the point of the index passes.

In an instrument devised by Professor Sachs (which is, however, not shown), the variations in the rate of growth are registered automatically in a very ingenious manner. A drum carrying a sheet of blackened paper is driven by clockwork, so as to revolve once in an hour. The index rests upon the drum, and leaves a trace as it travels round. The axis of rotation is, however, eccentric; as the index rises, therefore, it will trace hour by hour a series of parallel lines upon the blackened paper placed upon one side only of the drum. The intervals between the lines measure the growth which has taken place in successive hours.

3938 is a more complicated but, perhaps, not really more effective apparatus, devised by E. Stöhrer, of Leipsic, for obtaining the same result. Instead of a drum a disk of card divided at its margin into twenty-four hour spaces is made to revolve by clockwork once in the twenty-four hours. A pencil which oscillates between two electro-magnets presses upon the card, and will describe upon it a circular trace of larger or smaller radius according to the magnet to which it is attracted. The wheel of the pulley is furnished with teeth, which work upon a small lever, and cause this to direct a current from a small battery alternately to one or other of the two electro-magnets. This is at once brought into action, and draws it to the steel support of the pencil, which, therefore, makes a zig-zag mark upon the card. Every time that the wheel makes a revolution equal to a tooth the pencil makes a corresponding alteration in its trace. The number of these alterations in different hour-spaces are a measure of the rate of growth at the particular time. *W. T. Thiselton Dyer.*

The geological and geographical departments will also be found worthy of attention by those interested in plant-culture.

We shall have an opportunity of alluding again to some of the objects exhibited.

GREENHOUSE PLANTS.

THEIR CULTURE AND MANAGEMENT.

Witsenia corymbosa.—This singular and very distinct plant is indigenous to the Cape of Good Hope, from whence it was introduced about the commencement of the present century. It is of a branching upright habit of growth, with miniature sword-shaped leaves, from which spring numerous corymbs of lovely pale blue flowers produced over a long season in the advanced summer and autumn. The plant sometimes is seen on the exhibition stage in the autumn shows, where its fine colour has a pleasing effect, yet from the habit of opening its blooms in succession it is better adapted for general decorative purposes. It is a slow grower, rarely attaining a size of more than 2½ feet in height by as much in diameter, consequently it does not require a great deal of pot-room. This Witsenia is a moderately free rooter, and succeeds best in good fibrous peat with a fair quantity of sand mixed with it. In choosing plants for growing on it is even more necessary than with some things to secure such as are young and free in growth, for if they have long occupied small pots they can rarely be got to grow away well; therefore, it is better to begin with smaller stock that are in a free state of growth rather than such as may be larger but less capable of making progress afterwards.

Young plants, such as those above referred to, should in April be moved into pots a couple of inches larger than those they have occupied, using plenty of drainage, as all slow-growing subjects like this are very impatient of stagnant water at the roots; pot moderately firm, and do not give much water until the roots have begun to enter the new soil; keep the atmosphere a little close for a short time, and shade slightly during bright sunny weather all through the growing season, for if too much exposed the leaves are apt to suffer and turn brown at the points, which gives the plant an unsightly appearance. The naturally stout erect habit is such as not to require or admit of much training, except so far as just opening out the principal branches, which should in this way be secured to a few neat sticks; neither can much be done in the way of pinching back the shoots as they branch out naturally further than cutting back any that are unduly taking the lead. Growth will be accelerated by closing the house through the growing season in the afternoons whilst the sun is yet upon the glass, and slightly damping the plants overhead, as well as keeping the atmosphere and stage upon which they stand a little moist.

The treatment which is required during the growing season will be of a uniform character, as above described, but towards autumn discontinue the use of the syringe and shading; admit more air to discourage growth before winter. Nothing is necessary in the shape of hardening up the plants, as this Witsenia is not subject to the attacks of mildew consequent on insufficiently matured shoots. Keep through the winter in an ordinary greenhouse temperature in a moderately light situation, and give no more water than requisite to prevent the soil getting too dry. Re-pot in April, giving a 2 or 3 inch shift, according to the quantity of roots the plants have got, again shortening any shoots that may be outgrowing the others; this should be attended to from time to time as seen requisite, not letting any take the lead too much, which entails a waste of strength in afterwards having to cut more away that would be needful if attention was given in due time. Treat through the summer as in the season before. This autumn they will, if all goes well, bloom from the principal shoots. When in flower they can be used for conservatory decoration, and afterwards removed to the greenhouse for the winter. Re-pot again in spring, using the soil in a little rougher state now that the plants are larger. Continue to treat as heretofore advised, both in the growing season and when at rest: a 14-inch pot is big enough to grow them in when arrived at their full size. They will last for a number of years without re-potting by using manure-water once a week during the growing season, but the drainage should each spring be examined to see that it keeps efficient, as if it gets clogged up with soil the health of the plants speedily suffers.

Witsenias are not usually much troubled with insects, their hard leaves not affording much sustenance to the generality of plant pests. The use of the syringe during the growing season will keep in check red-spider, which sometimes makes its appearance upon them. Scale, both white and brown, will live on them, the white species will, if it once gets a footing, increase apace, and from the nature of the plant cannot well be destroyed by any of the usual liquid dressings, as the leaves will not bear such used in sufficient strength to kill the insect, which can only be removed by sponge and brush; these in like manner can be used for the removal of brown scale, which, however, does not increase rapidly on this plant. *T. Baines.*

AUSTRALIAN PLANTS IN ARRAN.

By Rev. David Landsborough.*

In the year 1861 a relative went to live at the beautiful residence of Cromla, at Corrie, on the east side of the island of Arran. She was old, and lived alone. I was under deep obligations to her, and, finding that a visit to her was prized, I was in the habit at all seasons of the year of going occasionally to see her. Gradually I noticed that, owing to the mildness of Arran and the special mildness of the garden at Cromla, arising from it being separated from the sea at high water by only the breadth of the highway, many plants which are destroyed elsewhere by frost remained uninjured in it. I was allowed by my relative to plant whatever I chose in the garden, and I resolved by a few experiments to test its capabilities for the growth of exotics. The result of these experiments I now venture to submit to your society.

On both sides of the house I noticed a remarkably sheltered corner; in the one in 1867 I placed a small plant of the great Australian Tree Fern, Dicksonia antarctica, and in the other a similar plant of that most beautiful of all Tree Ferns, the silvered Cyathea

* Read at the May meeting of the Botanical Society, Edinburgh.

dealbata. The Cyathea grew beautifully during the summer, stood the winter perfectly, but was afterwards stolen. The Dicksonia is now provided with nine fronds, of which the largest is 4 feet in length by 22 inches in breadth; it makes two growths in the year, sending out fronds in April and May, and again others in September and October. It is of course an evergreen, and looks better in winter than in summer, as in winter all the fronds are of full size. It has not yet begun to form a stem, but I understand that even in its native clime it does not begin to do so till it has grown for about a dozen years. I may add that it is somewhat doubtful if it will continue to thrive as well as hitherto, for within the few last weeks a magnificent Strawberry tree, Arbutus Unedo, which sheltered it from sun and wind, has been blown down.

My next experiment was with the Beefwood tree, Casuarina equisetifolia, of Australia; I placed it where the Cyathea had grown, and for a time it grew well, being little injured in winter. By-and-by, however, if began to decline. The cause of this I ascertained to be that, the old lady being now constantly confined to bed, the premises were allowed to get into disorder, and it had become the custom to hang sundry articles to dry on a railing which overhung the plant. I removed it to the border which adjoined the sea; here it grew well in summer, but could not stand the blasts of winter. A second time I transplanted it, but it had not sufficient vigour remaining to stand the operation.

A considerable number of other plants were introduced by me, such as tender Fuchsias, Azaleas, Cytisus, &c.; but about this time my experiments for a time ceased. The cause of this was that Crummie, my friend—for I am very fond of good milk—had also begun a course of experiments. First she experimented upon the garden gates and fences, and they having no longer the supervision of the old lady, were forced often so as to admit herself. Crummie is a lady of taste, an admirer of flowers and shrubs, but unfortunately her notions regarding property are confused, and she helped herself so freely to my plants that, having placed a fence around the Dicksonia, I gave up experiments.

In 1872 a servant-man came to reside with the old lady, and my experiments were resumed. I purchased a number of packets of Australian Acacias and Gum Trees; having sowed these I kept the plants for a year in the greenhouse, and planted them at Cromla in the spring of 1873. I selected for them the border next the sea, as being least exposed to frost, though that in which they would suffer most from wind, particularly from the north-east. The Acacias are of four varieties—A. longifolia, A. stricta, A. melanoxylon, and A. affinis. All of them have grown well. The finest of them is A. affinis, whose exquisite and most delicate-looking feathery fronds render it the most beautiful of all the Acacias; and fortunately it is also one of the most hardy—the most hardy, so far as I know—of all the pinnate species.

I next procured three packets of Gum Tree (Eucalyptus) seed, E. globulus, E. pendulosa, and another; they were sown in a greenhouse in 1872. The first came up freely, but damped away, and though I sowed it repeatedly the result was always the same. This I regret, as, if a little matured, it would probably have lost this tendency. The Blue Gum, E. globulus, was planted at Cromla in 1873, but, in consequence of often losing its top, it is now only about 11 feet in height. Another of the same sowing, however, has made far greater progress; I gave it to James Paterson, Esq., factor in Arran to the Duke of Hamilton. He intended to have grown it in his shrubbery, but the progress it made frightened him, and he planted it in the woods behind Brodick Old Inn. I measured it two days ago, and found the growths it had made since sown as follows:—1st year, 11½ inches; 2d year, 4 feet 6 inches; 3d year, 6 feet 7½ inches; 4th year, 6 feet; in all 18 feet and 1 inch; and it would have been about 20 feet had it not been that its top has been blown off this year, for it is a good deal exposed to the west and south-west winds.

The third packet was named Eucalyptus pendulosa; the name, I suspect, is only a gardener's one, but is most descriptive of the habit of the tree. The seeds grew well, but the plants exhibited two most decided varieties—the leaf of the one resembling in shape the Willow, only it has a curious inward twist; the leaves of the other are of a much darker hue, and are of the shape of the larger St. John's Wort (Hypericum Androsæmum). So like is it to the St. John's Wort—resembling it also in the puncturing of the leaves—that when the Eucalyptus is young it might readily be mistaken for it. Both these varieties of Eucalypus differ from E. globulus in being devoid of that glaucous bloom, resembling that of a Plum, from which the Blue Gum takes it name. They also differ in the leaves being comparatively small and the stems at all stages being round, while one of the most striking features of E. globulus is the quadrilateral and quadrangular character of the young branches. What I would however particularly direct attention to is their great comparative hardiness. Last year I planted a good sized specimen of E. globulus and another of the pendulosa in a plot of ground in front of my house at Kilmarnock. Kilmarnock is 7 miles from the sea, and the winter has been severe. The Blue Gum is killed to the ground, and is probably dead, the E. pendulosa is little injured. So hardy has it proved that I do not hesitate to say that it will be quite hardy in all sheltered spots along the west coast, and I expect that in a few years it will be abundant in all such places, forming a most beautiful and probably very valuable addition to the trees of the country. It is evergreen, of a fine dark hue; has a fine perfume, as sweet as that of the gale; grows with rapidity, is most graceful in habit, its branches tapering to as fine a point as those of Salix babylonica, while it sends forth fresh leaves very early, being so excitable that in a mild winter it may be found in February with new shoots an inch in length, and though these are probably nipped by frost others soon appear in their place. I cannot speak of the quality of the wood.

I may add that, through the kindness of Mr. Paterson, I have been allowed to plant specimens of all the species mentioned of Eucalyptus and Acacia in the wood at Brodick, where the Blue Gum has grown so rapidly.

My last experiments at Cromla have been with Palms. The first is so only in name; it is Dracæna indivisa—the Cabbage Palm of the Australian colonies, of whose leaves mats are manufactured. It has proved quite hardy. The other is a true Palm—one that grows in Australia to the height of 50 feet—the beautiful Corypha australis. It is not quite hardy, yet it has stood two winters without any protection, and I doubt not in a situation sheltered from the north and east it would be quite hardy also. I could have given it this shelter had I not been afraid of it being stolen, and thus planted it near the house, where it had not these advantages, nor had it that of being against a wall.

Thus ends my paper. My experiments at Cromla are also ended, for the kind and most sterling old lady has last winter "gone the way of all flesh." I have not removed any of the plants I introduced to her garden. Mr. Paterson has most kindly ordered them to be respected, and others may yet tell how they have thriven under their care.

I send specimens of the leaves and branches of the Blue Gum and the two varieties of the Weeping. The small part of the stem of the Blue Gum exhibits on one side the bloom of which I wrote. I neglected to mention that the growth of the Weeping Gum is about a third slower than that of the Blue. The growth of the Acacia is not much less than that of the Weeping Gum.

A SYNOPSIS OF THE KNOWN SPECIES OF IRIS.—V.

15. *N. Aitchisoni*, Baker, in Trimen's Journ. 1875, p. 108.—Bulb ovoid-oblong, an inch thick, covered with copious dark brown membranous fibres. Root leaves 2—3, linear, grass-like, glabrous, as long as the stem, ⅛—⅛ in. broad, channelled down the face, strongly ribbed and narrowed to a point. Stem ½—1 foot, one or rarely two-flowered, furnished with two or three reduced leaves. Spathe valves two to each flower, green, but membranous at the flowering time, lanceolate, acute, 1½—2 inches long. Ovary sessile, cylindrical, ¾ inch long; tube cylindrical, an inch long; limb 1½—2 inches deep, bright lilac purple; falls oblong, with a distinct claw, ½—¾ inch broad, with a bright yellow hairless line down the throat; inner segments about half an inch long, oblanceolate, with a long claw, spreading horizontally. Anthers ligulate, yellow, half an inch long, equalling the filaments. Stigmas, including the crests, as long as the falls.

Abundant on Mount Tilla, in the Jhelum district of the Punjaub, where it was discovered by Dr. Aitchison in 1874, flowering at the end of March. This is decidedly the most interesting discovery that has been made amongst the Irids of late years. In the cultivated species it is most like X. filifolium in general habit and the size and colour of the flower, but with the structure of this present section. Dr. Aitchison has already taken pains to procure for cultivation his two previous bulb discoveries, Colchicum luteum and Merendera Aitchisoni, both of which have been figured in the *Botanical Magazine*, so that this may be expected as a garden plant before long. A yellow-flowered variety of the same plant is in the Kew herbarium from Griffith, gathered in the neighbourhood of Otipore, bearing the same relation to the type that X. lusitanicum bears to X. vulgare.

16. *N. Stocksii*, Baker.—Bulb above an inch thick, with a tuft of fleshy cylindrical basal fibres and copious brown membranous coats, produced up its neck. Stem not more than 2 or 3 inches high, bearing 3—5 falcate leaves, and 1—3 one-flowered spathes. Leaves lanceolate, superposed, clasping the stem at the base, where they are ½—¾ inch broad, half a foot long, firm in texture, narrowed gradually to a long point, distinctly ribbed and furnished with a distinct pale horny border. Spathes ventricose, 2 inches long, formed of two greenish acute lanceolate valves. Ovary sessile in the spathe; tube 1½ inch long, not exserted from the spathe; limb pale yellow, 1½ inch deep; falls obovate, with a broad cuneate claw twice as long as the reflexing limb; inner segments oblanceolate, unguiculate, ½ inch long, spreading horizontally, with a long claw, and a small rhomboid-cuspidate blade. Anthers ½ inch long, equalling the filaments. Capsule narrow oblong, 15—18 lines long, clasped tightly by the relics of the spathe.

A native of dry shingly hills on the borders of Afghanistan and Beloochistan, particularly the Chebel Tun, near Quettah, where it grows at an elevation of from 5000 to 10,000 feet, and was gathered by Stocks and Griffith. It comes very near X. caucasicum, but has a short produced stem and longer leaves, spathe-valves and capsules. It has never been introduced into cultivation. Dr. Stocks' specimens, in most of which the flowers are faded, were gathered in May.

17. *N. Aucheri*, Baker, in Seem. Journ. 1871, p. 110; *Iris famosa*, Boiss. and Hauss. in Hauss. Pl. Syr. Exsic.—Bulb ovoid, with long neck, 1½ inch thick, with copious dark brown membranous coats, and a tuft of fleshy cylindrical basal fibres. Stem reaching half a foot high, bearing 6—10 close leaves, and three or four one-flowered spathes. Leaves lanceolate falcate, thinner in texture than in the last, and without the distinct pale border, 1—1½ inch broad at the base, 5—6 inches long at the flowering time, narrowed gradually from the middle to the point. Spathe-valves membranous, lanceolate, acute, 3 inches long, ovary sessile. Tube 2—2½ inches long; limb pale yellow, 1½ inch deep, the rounded lamina of the falls shorter than the obtuse claw, the inner segments as in caucasicum and Aucheri. Anthers ½ inch long, pale yellow, equalling the filaments. Capsules 2½ inches long, oblong-cylindrical, the acute valves not more than ¼ inch broad.

A native of the neighbourhood of Aleppo, where I have seen specimens gathered by Aucher-Eloy, Kotschy, and Haussknecht. This also is closely allied to N. caucasicum. From X. Stocksii it differs mainly in its more numerous broader leaves and longer capsules and spathe-valves. There is a specimen in the Kew herbarium of a closely allied plant, gathered by Professor Haussknecht in 1867 in the desert of Kotuh-hassar, with a single terminal flower and narrower leaves, the lowest of which reach a foot in length, which will probably prove a new species.

This concludes the series of the bulbous Irises, and I shall next pass forward to the rhizomatose groups. *J. G. Baker.*

THE ROSE APPLE

THE Rose Apple is an East Indian fruit of some importance, that is chiefly eaten by the natives, and is most esteemed for its cooling influence in the hot season, when it is ripe; but the actual merits of this fruit have been over-valued in the prosaic description of some ancient writers, who declare it is excellent in the extreme. The Rose Apple is certainly a pretty fruit, and this, combined with its Rose perfume and pleasant name, has perhaps conduced more to its importance than any real merit it contains. When we speak of excellence in a fruit, as in everything else, we should combine all the good and bad qualities into a whole, and calculate the average before we can judge which predominates; for example, a fruit may be pleasant to the taste, but still unsuited to the constitution of man, whereas a fruit that is less

palatable may be more nutritious. I should, therefore, say that the Rose Apple, although famous in history, is only a third-class fruit. Two, or rarely more than three large seeds are loosely disposed in the hollow centre of the berry, and the surrounding fleshy part is eaten; it tastes sweet at first, but ultimately woody and bitter. It has, however, a very cooling effect, and will appease thirst for a time. Colds and fevers are attributed to the Rose Apple by the natives, when it is consumed largely, or in a low temperature. A substitute for Rose-water has been distilled from the fruit, which is said to be equal to the real extract (see Drury's *Useful Plants of India*, p. 265). All the Eugenias are handsome trees, but E. Jambosa has a peculiar style of beauty. Until it becomes old it might be more properly described as a gigantic shrub than a tree, and for ornamental purposes it should be encouraged to remain in this form. The plants thrive best near the margin of water, or in low moist situations. On higher grounds I have lost several trees this year from the effects of drought, but I have not observed that inundation hurts the plants during the monsoons.

The Malay Apple, which is relished in its native islands for the same properties as its relative, is not so commonly met with in India. The tree is much more erect and stately in its bearing, and the flowers, which are profusely borne, are crimson; the fruit is also said to be finer than the Rose Apple. I have not seen it. The plants in the Government Garden are quite young. Nearly all the species of the Indian Eugenias bear fruit varying in size from a Gooseberry to a small Apple. They are, however, worthless to eat. *J. Cameron, Bangalore.*

CHAMÆDOREA FORMOSA.

THIS is a very elegant and graceful Palm, introduced through Mr. Carder, from Toima, South America. It belongs to the pinnate-leaved series, and is described by Mr. Bull as having smooth petioles, with two channels on the face. The segments of the pinnately-parted leaves are very numerous, alternate, linear-lanceolate, 18 inches long, and 3¼ inches wide, and drawn out into a very long thread-like point. These segments are set on to the rachis along the two channels or furrows above alluded to, and, being very numerous, the whole plant has a strikingly elegant aspect. We know nothing of the botanical status of this plant.

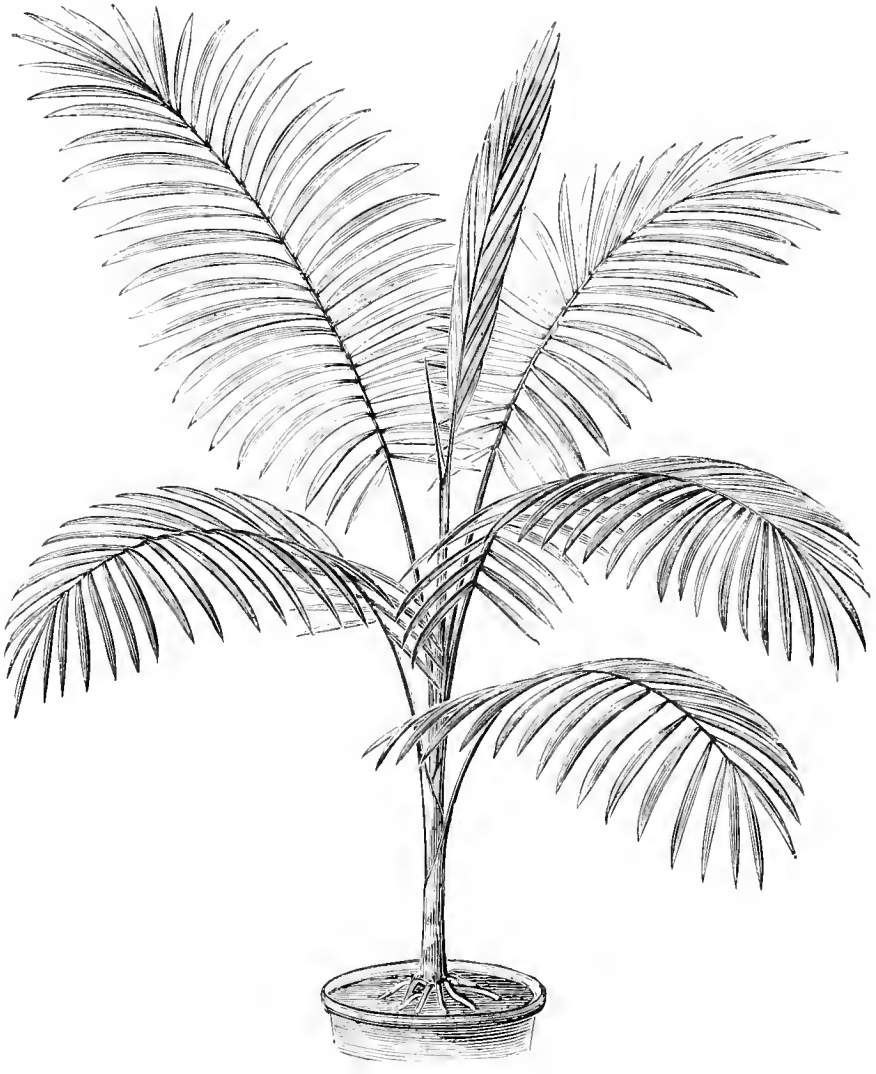

FIG. 130—CHAMÆDOREA FORMOSA, HORT. BULL.

DR. HOGG'S BLACK FIG.

As a knowledge of the wholesome properties of the Fig becomes more widely spread there will, no doubt, be an increased demand for any variety which possesses sufficient merits to distinguish or recommend it as superior in some respects to others. One of the chief merits of the new variety known as Dr. Hogg's Black is its being early and good for forcing. I find it a fortnight earlier than any other variety I have; it is also an abundant bearer, with frequently as many as a dish ripe at once on a pot plant. In this respect it is very different to some of the large varieties, as Castle Kennedy, Brunswick, or White Genoa, from which, unless the tree is of large dimensions, there are seldom more than two or three fruits to be obained ripe at one time.

The following is Dr. Hogg's description in the *Fruit Manual*: "Fruit medium size, oblong-obovate, neck short or wanting; skin slightly hairy, of a dark Mulberry colour and covered with a thick bloom and various little white specks on the surface, which is slightly furrowed in longitudinal lines, and the skin cracks lengthwise when the fruit is fully ripe. Stalk very short and thick; eye small and closed; flesh dull red, with a thick, syrupy juice, very richly flavoured."

Mr. Barron, the superintendent of the Royal Horticultural Society's Garden, after endorsing the above, adds:—"Flesh reddish amber, quite to the centre, rich, juicy and excellent. A very handsome Fig, and a great and free bearer. The plant is of somewhat stubby growth, and is admirably adapted for pot culture."

Dr. Hogg met with this Fig in a vineyard at Toulouse, and sent it in 1864 to the gardens of the Royal Horticultural Society. Previous to that the only plant in this country that I knew of was at Cliveden. *J. Fleming, Cliveden*, in "*Florist and Pomologist.*"

LOUIS VAN HOUTTE.

WE are now enabled to lay before our readers a portrait of this remarkable man, taken from a photograph which has been obligingly forwarded to us. A memoir from the pen of M. Rodigas is also before us, in which we remark a few details not previously given. These have reference principally to Van Houtte's early career, when, urged by the misfortunes which befell his father, the young Van Houtte was early forced to earn his own livelihood, and contribute towards the support of his mother. During the political agitation of 1829-30, Van Houtte took a characteristically active part on the Liberal side, and earnestly

worked for the national independence. It must have been a matter of profound satisfaction to him in after life to have seen how prosperous and contented thriving little Belgium has become in consequence of the efforts then made and of the judicious manner in which the rulers of that country have exercised their responsibility. Van Houtte, after the establishment of the Belgian independence, entered the civil service of the Government in the Treasury Department, but his natural tastes soon led him to throw up his appointment and betake himself, as we have already said, to Brazil. There, owing to the failure of remittances from Europe, he was driven to support himself by the sale of an insecticide powder and the manufacture of a fluid to allay the irritation of mosquito bites. In spite of his difficulties he managed to send to Brussels cases of plants, which unluckily shared the same fate as those sent by Siebold to Ghent—remaining unpacked till their consignor returned home.

THE LATE LOUIS VAN HOUTTE.

Brazil, Guatemala, Honduras, the Cape de Verd Islands, were all visited by him in turn.

He was a man who vividly impressed all who came in contact with him by the force and originality of his character. It was impossible not to admire so vigorous a worker, so honest a man. Even those who suffered from his sarcastic pen or tongue soon forgot the smart, because no malice ever defaced his pungent humour. We are glad to see that his English *confrères* are taking active steps to show their respect for the memory of a man who thought more for the interests of horticulture than for his own.

Foreign Correspondence.

NOTES FROM THE MALAYAN FRONTIER.—Having a desire to commence an acquaintance with the flora of the Malayan peninsula, I left Singapore in January last for that purpose. I reached Penang three days later, and after spending two or three days there I left early one morning in a steam launch for Quedah, my principal object being to visit Quedah Peak, where, judging from its elevation, I hoped to meet with considerable variety. I reached the mouth of the Quedah River about 5 P.M., and another hour brought me to the village. The course of the river is very circuitous, and the banks are covered with Nipa fruticans with fronds over 20 feet long. On my reaching the village I sent word to H.H. the Vizier of my arrival, who very quickly made his appearance and placed his bungalow at my service and invited me to dine with him that evening. The next day we drove to the Sultan's residence at Anak-Bukit, for an inspection of the house and grounds. A fine avenue of the Satinwood tree (Chloroxylon Swietenia) led up to the house, which, as its name implied, is situated on an eminence, or, literally translated, "young hill." The garden contained the finest collection of tropical fruit trees that I have met with, but I was only able to glean the Malay or Siamese names of the majority. I noticed several Grape Vines, but they did not seem to be in a very flourishing condition. The garden was surrounded by a fine plantation of Orange, Lime, and Pumelow trees, which, judging by the way the branches were propped up had borne heavy crops of fruit. The country being flat and annually inundated is admirably adapted to the cultivation of Rice, which at the time of my visit was being harvested; and the view from the Sultan's house bore considerable resemblance to an English harvest landscape with the addition of the Cocoa-nut Palm, Borassus flabelliformis, and a fine species of Corypha, rivalling the noble Talipot Palm of Ceylon (Corypha umbraculifera). The Vizier was greatly amused at the botanical names I gave the various plants I knew, and which he afterwards explained to the Sultan by throwing his arms as wide apart as possible and saying "Dia ada nama bugini panjang" ("He has a name as long as this)." The next day being Monday I sent my credentials in to the Sultan and had an audience with him. He is unable to speak English, but my superficial knowledge of Malay enabled me to hold conversation with him without the aid of an interpreter. He seemed both amused and puzzled at the object of my visit, but gave orders to get three elephants made ready for me. As there was no probability of these arriving within a week, I spent the intervening time in making excursions up the various branches of the river, returning to Quedah at night, but I met with little worthy of particular notice.

A small hill, called Gunong Gadga (Elephant Mountain), had attracted my attention on my first arrival, and early one morning I started with some Malays in a "sampan" with the intention of paying it a visit. Judging by its appearance it seemed to be 700 to 800 feet high, and on the northern and western sides was quite perpendicular and bare of vegetation excepting a few starved Hoyas; on the other sides it was rather densely wooded. On reaching the foot I inquired of some Malays if I could get to the top, but was told that I could go into the hill only as it was quite hollow, and as I expressed a wish to see what it was like inside they offered to conduct me. After climbing about 300 feet we came to the mouth of a large cave, and after lighting some dried leaves of the Cocoa-nut we entered. The caves extended in one way about 300 to 400 yards to an opening on the other side of the hill, and numerous passages branched off in every direction. Some of these caves were over 200 feet high, and sometimes connected by narrow corriders through which it was difficult to pass. The immense stalactites which were suspended from the roof and sides gave it a very fine appearance. The vegetation, however, was very disappointing; the only Orchids I noticed were Aerides suavissimum, Cymbidium aloifolium, and Dendrobium crumenatum. Some of the trees were quite draped with the last, in bloom, and were a very pleasing sight.

Large trees of Erythrina indica, with its large fascicles of gorgeous scarlet flowers, were very fine, as also were large bushes of Clerodendron nutans with its graceful drooping racemes of white flowers. I think this species is deserving of more attention from the hands of cultivators in England than it has yet received, as nothing can surpass it as it grows in the Botanic Gardens at Singapore, and it is one of the

greatest favourites with Dr. Thwaites at Peradeniya. To return to my subject: I was very much pleased on January 31 to hear that the elephants were ready, and we were soon on our way towards Gunong Gerai or Quedah Peak. Our destination for the first day was Sala, which we reached at 6 P.M., our road lying through rice fields. In damp spots the little Commelyna bengalensis formed pretty patches of blue flowers. Just before entering Sala we met with two splendid specimens of Cycas circinalis, both of which were over 15 feet high and beautifully branched.

The next morning we were soon mounted and on our way to Yen, which is situated at the foot of the Peak, which we reached at 5 P.M. Our road on this day lay within 400 yards of the sea through a jungle composed of a species of Phœnix, Cæsalpinia Sappan, and Mangroves. Yen is situated in a charming finely watered valley at the foot of the Peak, and it was with feelings of relief that I descended from the elephant on our arrival. Elephant riding may sound very pleasant to Engish ears, but only let any one ride on them through a jungle for twelve hours and I think they would not be so very eager to remount. What surprised me most at Yen was the immense Durian trees, which must have been over 150 feet high, in fact it was quite impossible to determine with the naked eye whether the green patches among their branches were clumps of Asplenium Nidus or Platycerium biforme, Bl. A species of Eranthemum with lilac-coloured flowers was abundant and beautifully in bloom, as also was a very showy scarlet-flowered Bauhinia. A species of Gardenia allied to G. carinata was also in bloom, and was very fragrant; but everything must yield the palm to Jonesia Asoca, which was really magnificent. The close corymbs of flowers it bears in most tropical gardens can bear no comparison with the immense panicles of bloom on those in the damp jungle at Yen; in fact for a good while I was unable to satisfy myself that it was really Jonesia Asoca. Large patches of Alpinia nutans were very showy. We reached an elevation of 3000 feet on the next day, and slept there, proceeding to the top the next morning. Owing to the recent dry season everything except in the densest jungle or by the sides of watercourses was quite withered up. The place where we halted for the first night was very rich. Cypripedium barbatum was in bloom everywhere, as also were several sorts of Commelyna or Cyanotis, two or three species of Acrotrema, some with beautifully variegated leaves; two or three Jasminums, Grammatophyllum speciosum, and a very pretty apparently annual Melastomad. Nepenthes ampullaria and N. albo-marginata were abundant.

Ferns were in strong force, the undergrowth being almost solely of Polypodium Dipteris. This species seems very difficult of cultivation, as a lot of plants I had secured refused to break after, but some small plants I have obtained are growing nicely. I also collected several Lindsæas, Cyatheas, Gleichenias, Polypodiums, Oleandra neriiformis, &c. Unfortunately the tin cases for specimens had been left at the foot of the hill with orders for them to be brought on as soon as possible, as I was unable to procure enough men at the time of starting, but we saw nothing of them until we were within 200 feet of the foot of the hill on our return. The reason for the delay was that the elephants had broken loose, and they had been three days trying to capture them. As might be expected no tracks could be detected on the road that they were reported to have fled and brought back. From our halting-place to the top the trees were very small, and mostly covered with Trichomanes, Hymenophyllums, and Musci. Amongst other Orchids I noticed Eria velutina, E. vestita, E. multiflora, several Cœlogynes with unornamental flowers, Zosterostylis sp., some Cirrhopetalums, and Anœctochilus setaceus. On the evening of February 6 I regained the foot of the Peak, regretting that I had not more time at my disposal for a more systematic search.

We reached Quelah again on the 8th, and on the 10th I had another audience with the Sultan and returned to Penang. After packing my plants and despatching them to Singapore, I proceeded to the top of Penang Hill on the 14th, where I spent five or six days. Here I collected Calanthe curculigoides, Grammatophyllum speciosum, Cypripedium barbatum, two or three species of Acrotrema, Rhododendron javanicum, a species of Medinilla, perhaps M. speciosa, and a fine lot of Ferns, which I have not yet examined. I also met with six species of Cyrtoceras and three Hoyas. Anœctochilus setaceus was very abundant, though the foliage was quite shrivelled by the long drought; but on putting them in a Wardian case they soon revived, and now are doing well. Polypodium Dipteris, Nepenthes albo-marginata, N. ampullaria, and one or two Gesneras were also abundant here. Several fine trees of a Mesua, perhaps M. ferrea, were finely in flower; and here I met with the largest specimen of Plumieria acuminata that I have seen. This flower, on account of its fragrance, is much esteemed by the Bhuddists of Ceylon, some of the temples that I have entered there being strewn with them.

Taking advantage of an opportunity afforded by a steamer leaving Penang for Perak, I left Penang on February 17 for Pulo Pankore and the Dindings; I was compelled to wait here until the same steamer returned again, which was not until February 24, when I returned to Penang. The flora of Pulo Pankore and the Dindings is very poor, the undergrowth consisting chiefly of Licuala acutifida and L. peltata; and the only Orchids worth notice that I detected were a specimen of Renanthera with panicles of small brick-red flowers, and a very inconspicuous flowered Sarcanthus. Hoya lacunosa and H. fraterna were abundant on the rocks around Pulo Pankore. Some attempts seem to have been made here in the cultivation of Rice, Plantains, and Sugar-cane, but the soil is far too poor to give any chance of success. I reached Singapore again on March 2, rather disappointed with my first acquaintance with the flora of the Malay peninsula; but from what I hear of Perak, Sungie, Ujong, Gri, Menanti, and Terracher, I believe they will afford far better fields for future exploration. Had the peninsula been in a less unsettled state I should have been able to explore some of these places, but I thought discretion the best part of valour under the then existing circumstances. My next trip, however, will be Sarawak, where I hope to meet with a fine field. Perhaps at some future time I may be able to send you a few notes of my doings in that quarter. [Pray do. EDS.] *H. J. Murton, Superintendent, Royal Botanic Gardens, Singapore, S.S.*

AMERICAN RIBES.

IN the May number of the *American Naturalist* Professor A. Gray gives the following synopsis of the American species of Ribes:—

Flowers several in a raceme, small and flattish, greenish	R. LACUSTRE.
Flowers 1 to 4 on the peduncle (calyx-tube at least as high as broad):	
Yellow or yellowish, tubular	R. LEPTANTHUM.
White, tubular, with short lobes	R. SETOSUM.
Greenish, with lobes shorter than the bell-shaped tube	R. CYNOSBATI.
White or whitish, narrow, with lobes longer than the tube and shorter than the ½-inch stamens	R. GRACILE.
Greenish or dull purplish lobes, longer than the tube:	
Nearly equalling the stamens	R. OXYACANTHOIDES.
At length shorter than the stamens:	
Calyx-tube and lobes rather narrow	R. ROTUNDIFOLIUM.
Calyx-tube and petals broad	R. DIVARICATUM.
Purplish red, larger; Pacific species:	
Anthers oval, pointless	R. LOBBII.
Anthers sagittate, mucronate	R. MENZIESII.
Scarlet-red, very long stamened, Californian	R. SPECIOSUM.

Ribes lacustre is intermediate in its characters between a Currant and a Gooseberry. The names setosum (Gray) has been erroneously applied to this species, but it is not the R. setosum of Lindley, which is a white-flowered species, called by Hooker R. oxyacanthoides, but erroneously.

R. gracile, of Michaux, is the R. missouriensis of Nuttall, and the R. niveum of Lindley, and probably the R trifiorum of Hooker.

R. oxyacanthoides of Linnæus is the proper name of the species called R. hirtellum by Michaux, and R. saxosum by Hooker.

R. divaricatum of Douglas includes as a variety R irriguum of the same author.

R. Lobbii (Gray) is the proper name for R. subvestitum of Hooker and Arnott (*Bot. Mag.*, t. 4931), which last name has also been applied to some specimens of R. Menziesii.

R. speciosum of Pursh is the scarlet-flowered Gooseberry of California, also known as R. stamineum of Smith, and R. fuchsioides of Berlandier, prized in this country for its brilliant red flowers, garnished by shining and almost evergreen leaves.

Garden Operations.

PLANT HOUSES.

PLANT STOVE.—Any varieties of Achimenes that are scarce may have their tops taken off, and these, if made into cuttings 2 or 3 inches long, and inserted six or eight together in 6-inch pots, filled with a mixture of half sand and loam, or sand and peat, and covered with propagating glasses in a brisk heat, will root in a fortnight, when they can be potted on and will flower in a dwarf state. The plants that have thus had their tops taken off will throw out several shoots and flower later on. It is not a good plan to have more of these useful decorative subjects in bloom at a time than are required, as, unless where the growing space at command is unlimited, it is much better to have some in a little later; if this has not been managed by starting some of the bulbs at intervals, a portion of the general stock may now be stopped well back, removing a good part of their heads; this will cause them to bloom later. See that they are attended to with sticks and ties as soon as they are required, especially when grown in baskets for suspending; these look much the best when so arranged that their bottom can be covered either by a portion of the plant being put in so as to protrude through it, or so tied as in a measure to conceal the moss, which can never be made very ornamental in appearance. Gloxinias that are intended for the decoration of a conservatory, and now showing flower, may be kept at an intermediate temperature or a few degrees warmer than an ordinary greenhouse, along with the Achimenes required for a similar purpose. They must now be gradually inured to more air and a cooler temperature than the stove; if they can be accommodated in a vinery at work they will here receive treatment in the above respect that will much better prepare them for the change than if they were at once taken out of stronger heat. Amaryllis that have done blooming should at once be placed under the most favourable conditions for making their growth; this applies to the deciduous as well as the evergreen sections of these fine decorative, but for some time neglected plants. As may naturally be supposed the more favourable treatment they receive whilst growing, the greater will be the increase in the size and strength of the bulbs, as likewise their increase in offsets, and their ability to flower freely. A very moist and heavily-shaded stove, such as is required by some flowering and also fine-leaved plants, is anything but the sort of place in which to grow Amaryllis satisfactorily, as it has a direct tendency to draw the leaves up weakly. They should be stood near the glass, have a fair amount of air every day, and not be shaded unless they are found to burn in the sun; but as they are somewhat subject to red-spider when so treated they should have a dash with the syringe in the afternoons at closing time. Give them plenty of water at the root whilst in active growth, and at once move such as require it into larger pots; but on no account overdo them with root-room. Pot in good yellow loam if it can be had, with as much sand as will keep the soil porous. Drain effectually, and ram the soil quite hard. At the present day everything new in the shape of plants that bear leaves of a tropical aspect is eagerly sought after, whilst many old favourites are forgotten. The Cape Strelitzia reginæ, with its distinct handsome foliage, and equally distinct stately singular blooms, is much overlooked; for its flowers alone it is well worth a place, independent of the effect it has when out of bloom. It is of the easiest possible growth, succeeding in any kind of soil, so that the drainage is efficient; and it can be easily propagated by division of the crowns when done flowering. Any one possessing a large plant when it has finished blooming, which is usually about this time, may turn it out of the pot, shake off all the soil, separate the roots so that no more will be cut than can be avoided. Then with a knife sever the crowns, putting them in 8 or 10-inch pots according to the quantity of roots each crown has got. If they are then placed in a moderate heat they will soon commence growing, and get established, after which they will simply require syringing overhead, and enough water to the roots to keep them going freely until the end of the season, when they should be kept for the winter a little drier. The plant is easily kept clear from insects, as the formation of the leaves affords every facility for sponging. It will succeed well in a warm conservatory, where it has a commanding appearance, mixed with things of smaller growth. Another fine autumn flowering plant of an erect stately habit, attaining a height of from 2½ to 3 feet, is Dichorizandra musaica; it is from the Amazon: the flowers are a deep purplish blue, and are borne in a large mass on the summit of every shoot (even when not in flower it is distinct and effective), blooming late at a time when few flowers are produced, and affording a most desirable colour. Young plants of Ardisia crenulata, both the white and red varieties, that were raised last spring from seed, and kept in small pots through the summer and

autumn, should now, as they require it, be moved into larger ones. Do not over-pot them in their younger stages, as their appearance and general use for decorative purposes is much enhanced by their being confined to pots as little as they can be made to do well in; but, on the other hand, it is not advisable to starve them for want of root-room, or the bottom leaves are liable to suffer, and this completely destroys their beauty; every leaf should be intact down to the base. Those who raise them from cuttings, if they have a few old specimens, and will now take off their heads, place the stools in a moderate heat, and keep them syringed overhead, will shortly have them throw out a number of shoots. These, as soon as they have attained sufficient length, may be taken off with a heel, put six or eight in 6-inch pots, drained and filled with sandy peat, with a little sand on the surface—stood in heat, kept moist, and covered with propagating-glasses. So treated, they will soon form shoots, and can then be put singly in small pots, and grown on through the season in heat. *T. Baines.*

ORCHIDS.—The Dendrobium-house will now be gay with such things as D. densiflorum, D. thyrsiflorum, D. Schroederi, and D. Farmeri among the evergreen species, whilst amongst the deciduous forms mention may be made of D. Devonianum, D. lituiflorum, D. transparens, &c., which are most handy when grown in baskets; whilst among those that seem to prefer bare blocks only D. crystallinum and D. Bensoniæ may be noted as conspicuous examples. These should all now be well supplied with water, those in baskets being dipped about twice a week, regard of course being given to the state of the roots, whilst those on blocks should be syringed twice a day. This latter operation should be done carefully, and see that no drip from the blocks falls on to any plants below them, for drip unobserved is often the cause of young growths turning black and becoming decayed, and thus by so simple a means a twelvemonth's growth may be lost, for, providing a growth has attained half its usual length and then damps off, the shortness of the growing season that is left is quite inadequate to the time required to form a good bulb that can become sufficiently ripened to bloom. It is, therefore, clearly a matter of considerable importance to ensure by care and attention the holding of that already attained, at the same time to encourage and assist all when signs of growth and activity are manifest. Pleiones will now be well advanced in growth, and, providing all has gone well with them, the whole of the leaf will be formed and the young bulbs commencing to swell at the base of the leaves. These must have plenty of water at the roots now, and although an occasional syringing overhead is desirable, it should not be too freely practised; the water falling on the leaves is apt to run down and rot the young bulbs before they are sufficiently hard to resist too much water. An application of weak liquid-manure about once a week will be beneficial. Calanthes will also now be growing and rooting very freely, and these also should be treated occasionally to some weak liquid-manure.

The continued dulness and absence of sunshine will cause the shading to be required less than is usually the case at this time of the year, at the same time it should be remembered that the sun is now attaining its maximum power, and so when it breaks through in the middle of the day the blinds should be quickly run down, otherwise scorching may result, the broad leaves offering a large surface to the action of the sun. Give air to all the structures as freely as weather will permit. Epidendrums, as a rule, are a class that are not eagerly sought after, and yet among them are several that are certainly very desirable. Most of them succeed best in the Cattleya-house; a few, however, will be found to prefer the treatment given to the Odontoglossums. Among those of the first section may be named E. prismatocarpum, a stately and fine looking plant when not in flower. Of this there are several varieties, one being especially worthy of mention, the spots on the sepals being larger and darker than is usually the case, whilst the labellum is of a deep rose colour. This should be grown in a pot in moss and peat, and have some crocks worked among the soil. E. syringothyrsus is another very beautiful species, very different in growth but requiring very similar treatment; it produces a spike of rose-pink flowers in the spring on growths formed the previous season. It is unfortunately very seldom met with, but is well worth getting and growing. Somewhat similar to this may be mentioned E. Ibaguense, E. paniculatum, E. cinnabarinum—all very attractive, and requiring the same treatment. Differing from these will be found E. rhizophorum; this will well repay all the care given to it, for its spikes of bright orange-coloured flowers continue to grow after the first flowers are open, and thus it will remain in bloom for several months. It should be grown in a pot, its long straggling shoots tied round some stakes, and since these growths throw out a number of young roots along their entire length, it will be desirable to frequently syringe it overhead. E. cnemidophorum in a pot, and E. vitellinum and its major variety on blocks, will be found to do well in the Odontoglossum-house. *W. Swan, Fallowfield.*

FRUIT HOUSES.

VINES.—Late houses in which the Vines are now in bloom should have the assistance of fire-heat to keep up a warmer and somewhat drier atmosphere until the Vines are perfectly set. A temperature of 65° by night is sufficient. The more shy setting kinds will be benefited by turning the bunches upwards to the glass so that the extremities may have the full influence of light to develope the bloom on the extremities. Where this is not done, kinds having long tapering bunches, such as Muscats, are very apt to set imperfectly consequent upon the want of light to perfect the blossoms. Stop all bearing shoots one or two joints above the fruit and laterals at the first leaf except in the case of young Vines or the leading shoots of established plants. These, if space admits, should be allowed to ramble more freely, otherwise there is a probability of starting the dormant buds. This should be carefully avoided, as on the maturation of these depends the crop of next season. For this reason it is better not to stop the laterals until several joints are made, and in the case of vigorous young Vines they may be allowed to extend considerably, providing there is roof room for them to be laid in without crowding. When the latest Grapes are sufficiently advanced thinning should be followed up as fast as possible, bearing in mind that Grapes intended for late winter or spring use should, in the case of large clusters, be well shouldered up, and the interior berries be well thinned; where this is neglected, damp frequently commences, and sometimes destroys a considerable portion of the bunch before the evil is seen. Grapes in the process of colouring should still have a little assistance from fire-heat, so as to enable a moderate amount of air to be kept on night and day. When later, and not required for quick use, firing may now be dispensed with, especially during the process of stoning, shutting up early so as to retain a considerable amount of solar heat. Interior borders should have due attention as to watering at least once a fortnight; this when needed should be done effectively, as, provided the borders are properly drained, it too often happens that the lower portion is not sufficiently moist for the roots to derive full advantage. Vines in pots will still require attention, those grown for early work should now have reached the full length of rod required. Where this is so the leading shoot should be stopped, also stopping the laterals back to one joint as they appear. Give a liberal supply of manure-water every other day; if the plants are as strong and vigorous as they should be, they will require stimulating now in order to get the growth completed in good season. *W. Cox, Madresfield.*

ORCHARD HOUSES.—In the last few days there has been a favourable change in the weather as regards temperature and moisture, and orchard-house trees in unheated structures will require frequent attention in pinching the shoots and thinning the fruit where too thickly set. As this cannot be done all at once, the more vigorous young shoots should be pinched in first, and the thinning of the fruit must be cautiously done so as to leave plenty on till the stoning period is over. Copious waterings will now be required at the roots, and constant attention to see that no tree suffers in warm weather, and when Strawberries are grown on the shelves they will require looking over twice a day in hot sunshine. Pear trees may be now turned out-of-doors, and any Peach or Nectarine trees not well cropped; this will give those left in plenty of room for the sun and air to circulate in the house. If the trees have not been surface-dressed this is now a good time to have it done, and some turfy soil, mixed with rotten manure or road scrapings mixed with horse-droppings, is likewise a good mixture for the purpose. Syringing the trees twice a-day must not be neglected, to keep insects in check, now that summer weather has fairly set in. In the early forced houses, where the fruit has been gathered, the trees must not be neglected for want of root-watering, and daily syringings to keep the foliage healthy and free from insect pests. Brown-scale sometimes attacks Peach and Nectarine trees after the fruit is gathered, and a good strong dose of Gishurst, or soft soap dissolved in water and put on with the syringe, will banish them. The trees may be put in the open air in the course of a few weeks in some warm sheltered corner, when they will ripen their wood better than by keeping them in the house all summer. *William Tillery.*

CUCUMBERS.—The cold easterly winds which have for some time prevailed, attended with an unusually low night temperature, having been highly favourable to the rapid spread of red-spider, particularly where plants growing under glass, with a sharp slope to the south, and have been heavily cropped, and decided measures must be taken for their speedy destruction. Dress over the plants twice a-week, removing as many of the old leaves as can be spared. Apply sulphur or Gishurst Compound; stimulate free growth by the frequent application of tepid liquid manure to the roots. Top-dress with good loam and old lime rubbish. Close early with plenty of sun-heat, and syringe freely above and below the foliage with water at a temperature of 85°. Plants in frames will now be bearing a good supply of fruit; ram the soil well down round the inside to keep back steam; renovate the linings to keep up the necessary heat, as Cucumbers seldom recover if allowed to receive a check. Keep the foliage thin, and crop light, if a steady supply of good fruit is the object. Fumigate for green-fly as soon as it is observed. Apply quick-lime to the stems to prevent canker; this precaution, however, is seldom necessary where old lime rubble forms a part of the compost, which should be rough and porous, otherwise the constant application of water to the surface soon creates a sourness prejudicial to healthy root-action. Plants intended for producing seed should receive a slight check at the time the female blossoms are impregnated, by shutting off the bottom-heat for a time, and a reduction of the supply of water. Plant out ridge Cucumbers under hand-lights, and make fresh sowings for succession crops. *W. Coleman, Eastnor.*

HARDY FRUIT GARDEN.

I must repeat that one of the most important operations at this season in regard to fruit trees is the total prevention of the ravages caused by the various kinds of insects which infest them, and I would inculcate the value of prevention, which is secured by a timely application of water through a powerful syringe or garden engine; but if once they are allowed to get a firm hold water alone is not sufficient—something must be added to it to make the situation unpalatable. For this purpose employ a strong solution of tobacco-water, about a quart to 20 gallons if very bad, but less if only commencing. I have also used a solution of 2 ounces to the gallon of Gishurst Compound, with very good effect. In each case the syringing must be followed by applications of pure water after a day or two.

Summer pruning of all kinds of fruit trees will now be in full operation, and the finger and thumb should be constantly at work; wall trees should now be gone over regularly, and all shoots intended to be trained in at length should have a first nailing, or tying-in, as the case may be; all the remainder may now be pinched back, as doubtless gross and misplaced shoots have all been taken off some time past. Morello Cherries on north walls do not bear much on spurs but on the long shoots of last year, so that a sufficient supply must be laid in to ripen for next year's bearing, and the remainder removed. Pyramid and espalier trees will now need regulation, and will require as they advance a constant attention to pinching back all the side shoots to about three buds, and the leaders rather more; at the same time take the opportunity to thin out the fruit where too abundant, leaving only the finest formed and perfect fruit. Gooseberries which are required to be fine and full flavoured for dessert purposes should now be severely thinned out, as the thinnings are very useful for kitchen purposes, and if left on to ripen will be deficient both in size and flavour, and therefore, to some extent, a waste of produce. Strawberries will now be swelling fast, and must be assisted by good supplies of water, more or less according to the state of the weather; if any are required extra fine for exhibition they should be secured to short sticks and thinned out, so as to leave a very few on each plant, and these plants should have a little extra feeding in damp weather, say a few ounces of good guano dissolved in the water. *John Cox, Redleaf.*

Forestry.

HOW TO STACK TIMBER.—In stacking timber the following suggestions may be useful:—1. Let the skidding as a rule be placed as nearly as possible level both ways, and in no case allow the upper side of it to be less than 12 inches distant from the ground. It will then necessarily follow that, whether the stacking ground be level or upon the hill-side, there will be ample space for ventilation under the timber to be piled thereon. 2. Let the butt-ends of the logs be placed to the front, and keep the back or top ends of each tier slightly higher than the butts, for facility in withdrawing them from the stack. 3. Let the skidding over each tier of logs be level, and place short blocks under it, as packing pieces, 1½ or 2 inches in thickness, upon every log. The advantage of this is, that by removing the packing pieces any log in the tier between the two layers of skidding may be withdrawn from the stack without disturbing the remainder. 4. If the timber to be stored cannot be placed in a permanent shed, it should, with the view to its preservation, have a temporary roof placed over it. The size of the stack should, therefore, be considered in setting it out, limiting the breadth or span to about 25 or 30 feet. 5. Let each tier as it rises be set back 6 to 8 inches, to enable the converter to get over it without a ladder, he will find it convenient for examining and selecting his logs for conversion. *Lashtt's Timber and Timber Trees.*

THE

Gardeners' Chronicle.

SATURDAY, JUNE 3, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, June 5 { Halifax Floral and Horticultural Society's Exhibition (two days). Southampton Horticultural Society's Show.

WEDNESDAY, June 7 { Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M. Great Summer Show (two days).

AS we have already had occasion to mention, the splendid collection of SCIENTIFIC APPARATUS gathered together at South Kensington is being utilised by the holding of conferences or lectures in each department. At these conferences the speakers review, in terms suited for a general audience, the history and development of the several branches of science. They illustrate their remarks by referring to the historic instruments in the exhibition, and they point out the progress that has been made, and which is now being made by means of apparatus similar to or identical with those displayed, and whose mode of action is carefully explained. All this is so admirable that, to a person of ordinary intelligence and appreciation, these conferences and demonstrations constitute an education in themselves.

As we listened some days since to the explanations given in the Biological Section, and were enabled to see how it was that so much was being done in unravelling the problems of animal life, and therefore in contributing to the maintenance of life and the restoration of health when impaired, we could but reflect on the relative uselessness of and neglect of opportunities by horticultural exhibitions in general, and on the relatively backward state in this country of vegetable physiology, especially in its applications to the cultivation of plants. These are no new impressions on our parts—we have often had to note them in these pages—but we do not know that we ever felt more strongly on the subject than when we had occasion to be witnesses of what is being done in other departments.

When we speak of the relative uselessness of flower-shows, we trust that our meaning is not likely to be misunderstood. No one can be more sensible than we of their value as a means of displaying the results of the highest skill in cultivation, and the greatest amount of beauty that Art can lend to Nature. But for educational purposes, even to gardeners, their value is very limited compared to what might be the case. It is not our intention, however, to discuss this matter now. Our present concern is with the subject of PHYSIOLOGY, or, as it has become the fashion of late to term it, BIOLOGY, as illustrated at South Kensington. In other columns we have alluded to some of the more important objects exhibited, we may now briefly allude to the proceedings of the Biological Conference, not with any intention of going into details, which would be out of place here, but with the view of showing the general scope of this department of the exhibition, and thereby of making plain the backward condition in this country of vegetable physiology, especially in its applications to horticulture and agriculture.

As was explained by the chairman of the meeting, Dr. BURDON-SANDERSON, a very large number of the implements exhibited were measuring instruments of extreme accuracy some for the measurement of the form and size of objects, others for the correct measurement of time. By means of an instrument which may here roughly be described as an instrument based on the principle of the electric telegraph in conjunction with clockwork mechanism, the apparently incredible feat of measuring the duration of a thought or of a transient mental impression and the time passed in carrying that thought into what we call instantaneous action was enacted. That the process cannot really be instantaneous is of course obvious, but at any rate for all practical purposes it has been considered so, as no means till lately have been devised of making appreciable so brief a moment of time. Electro-magnetic force is the means by which this result is now effected. By its means a slender rod is made to move against a cylinder provided with a cover of varnished paper, and made to revolve at a regular stated rate by clockwork mechanism. The style or rod in its movement describes on the paper cover of the revolving cylinder a mark, long or short, according to the length of time it is acted on by the electric force by which it is generated, the time of course being measured on the moving cylinder. The paper with the mark on it can be removed for preservation and comparison with other tracings.

M. MAREY, speaking in French, but with a lucidity that many Englishmen might envy, described a number of apparatus now employed by physiologists and medical men for the purpose of ascertaining, demonstrating, and recording in an accurate and strictly comparable form what goes on in the interior of the animal body. In this manner the phenomena of nervous action, the tension or relaxation of the muscles, the various movements of the heart, lungs, and other organs, can all be subjected to the closest and most accurate scrutiny. The style or pencil (supposing it to be in perfect working order) which traces out these phenomena, their nature and degree of intensity, can have no preconceived opinions, no imperfect appreciation of facts, no bias or tendency to record facts otherwise than they are. Of course these facts, and the instruments by which they have been elicited, have been for some time known to medical men and professed physiologists, but to the general public they must come as a veritable revelation.

When it came to the turn of vegetable physiology, Dr. HOOKER had no difficulty in showing that, as far as botany proper is concerned, this country might rank with the foremost, but he could not but admit that PHYSIOLOGICAL BOTANY, with some exceptions, was at the present time considerably in arrears here as compared with its condition on the Continent, and especially in Germany. This he attributed to the circumstance that many of the physical phenomena connected with the life of either plants or animals had only comparatively recently been made known, and that the time had not been sufficient for their application to vegetable physiology. Another reason he alleged was the want of delicate instruments of precision, such as were now exhibited. To this latter cause, to the almost total absence of laboratories devoted to this special branch, to the lack of qualified teachers competent to instruct pupils in this department, we should, for our own part, be disposed to attribute our inferiority to Continental physiologists. It has, therefore, been with the greatest and most lively satisfaction that we have learnt of the munificence of Mr. JODRELL. That gentleman, as it appears, hearing that Kew as a scientific establishment was destitute of a physiological laboratory, and that scarcely one such existed in the country, has generously defrayed the cost of the building now in course of erection at Kew. Whether it was a proper act on the part of the Government of a great country like ours to allow itself to be forestalled by a private individual is a question we do not care to discuss here. We can but express our hearty satisfaction that something is about to be done, and that in this country, where agriculture and horticulture are of such extreme importance, means are being taken to promote the study of that branch of science—vegetable physiology in its widest sense—which is so all-important to the future progress of the arts above-mentioned.

Reverting to Dr. HOOKER'S remarks, the President of the Royal Society had, as we have said, little difficulty in showing that, so far as botany was concerned, this country held a most honourable place. He was also able to show that whatever might be our deficiencies in some departments we had a tower of might in CHARLES DARWIN, and that in the past very many of the most important researches and observations in vegetable physiology were made in this country. In corroboration of this he referred to the parts played in the discovery of the sexuality of flowering plants by Sir THOMAS MILLINGTON, GREW, and BOBART. He referred to the experiments of HALES, whose researches are still quoted in the text-books as almost the only ones of their kind till recently in the language; he referred also to PRIESTLEY and his researches, proving the emission of oxygen in sun-light, and of carbonic acid at night; to THOMAS ANDREW KNIGHT, the great horticulturist; to DAUBENY, the first to show the different effects produced by different portions of the spectrum on plants; to LAWES and GILBERT, whose researches on the evaporation of water from leaves form the most important contribution to our knowledge of this part of physiology, and who were also the first to prove that free nitrogen is not absorbed by plants. The laborious and long-conducted experiments on the effects of different manurial conditions on various agricultural plants, and the corresponding experiments on animals, are not likely to be overlooked in a future review of the progress of vegetable physiology, though possibly they have hitherto not attained their full meed of publicity from having been enshrined in the *Journal of the Royal Agricultural Society*, and similar publications.

ROBERT BROWN'S great name was, of course, not overlooked, nor the part he took in unravelling the physiology of the fertilisation of flowering plants. Other names, such as those of JOHN HUNTER and HUMPHREY DAVY, ROBERT HUNT and THOMAS GRAHAM, might have been added to those who have contributed to the advance of our knowledge of the physiology of plants.

Professor DYER followed Dr. HOOKER, and explained the construction and mode of action of various apparatus sent from Breslau by Professor COHN. These are for the most part referred to elsewhere. Some of them were familiar to English observers, but others, especially the instrument of M. STÖHRER, of Leipsic, for observing and recording the mode, intensity, and periodicity of growth in plants, are not so familiar. We have to thank Professor DYER for his explanation of this apparatus (see p. 722).

It may be, that as the *cui bono* race of men still finds representatives among gardeners as among other classes, some one will ask what is the use of all this. Did not our forefathers grow good Grapes, and can we not excel the world in Grape growing and Pine culture? Very true; but let us ask in return, which would make the best doctor—he who imbibed the traditions of his elders, and shaped his own experience by them, or he who, not unmindful of or ungrateful for the labours of his predecessors, yet availed himself of every new discovery or invention whereby he can the better ascertain the precise condition and working power of every part of his patient's frame? It appears to us that gardeners and doctors are much in the same case here. The gardener who has a thorough insight into the construction and action of the plant machine he has to control and direct, must have an immense advantage over him who has only the rule of

VIEW IN THE EMPEROR'S WINTER GARDEN, VIENNA. (See page 730.)

VIEW IN THE EMPEROR'S WINTER GARDEN, VIENNA. (See page 771.)

thumb to guide him; and so we rejoice at the realisation of a hope we have often expressed in these columns in the approaching establishment of a physiological laboratory at Kew.

—— We are requested to state that a number of scientific gentlemen have volunteered to give lectures in connection with the LOAN COLLECTION OF SCIENTIFIC APPARATUS at South Kensington on the free evenings. These lectures will commence on Saturday next, at 8 o'clock, in the Conference-room, by a lecture from Professor ROSCOE, of Owen's College, Manchester, on "Dalton's Instruments, and What he Did with Them."

—— We are informed that, in consequence of the bad weather experienced in that part of France, the GREAT ROSE SHOW at Lyons has been postponed from June 2 to June 16.

—— A cure for PEACH BLISTER would be hailed with great satisfaction if such could be found. Meanwhile, a correspondent of the *Villa Gardener* speaks in high terms of the following mixture, which he has never found to fail. The recipe is this:—1 lb. of tobacco, 1 lb. of Hellebore powder, 1 lb. of sulphur, 1 lb. of soft soap, 2 quarts of lime, 2 quarts of soot. Boil the tobacco well for half an hour in 2 gallons of water, then strain and add the other ingredients, which will be of about the consistency of paint when properly mixed. Apply with a hair brush. For outdoors we have usually applied the mixture directly after pruning the trees, which is about the end of February, choosing a fine dry day for the purpose, and being sure that the trees are quite dry at the time; otherwise, should it rain before it is thoroughly dry, it is apt to wash off again, and render the application comparatively useless.

—— We regret to learn from the *Illustration Horticole* of the death of the Comte DE GOMER, at his seat, near Amiens, in his 68th year. His fine collections of Camellias and other plants were remarkable, more especially in France, where such collections are rare.

—— A well-merited compliment has lately been paid to the Hon. MARSHALL P. WILDER by the members of the Massachusetts Horticultural Society, of which he was for some years the President, as well as having been the founder of the American Pomological Society. The members of the former Society have presented Colonel WILDER with a picture representing the opening of an agricultural exhibition some years since by himself, in conjunction with others interested in the same work.

—— We have had sent to us by a correspondent specimens of fifteen plants, of almost as many natural orders, all which are more or less withered or injured, and all apparently in the more projecting parts, as the tips of the shoots and leaves. It would be quite easy to add as many more, and the more delicate Conifers seem peculiarly liable to the same affection. There is little doubt that it is due to the radiation of the clear nights which so often accompany a N.E. wind, which has acted just as far as the plants or portions of the plants were exposed, and no further, and hence while the lower part of a leaf is perfectly healthy the tip is dead and withered. Cultivators do not in general seem to pay sufficient attention to the difference between general frost and radiation, though they have practical proof of it in the protection which a coping is to wall fruit, which more frequently perhaps suffers from radiation than from frost. The supposed injurious effects of the moon and its ripening influence on late crops are due probably to the same cause. More especially is it necessary that in forcing-houses this distinction should be kept in view, a slight awning being sufficient to counteract the injury which may arise from the radiation of a cloudless sky, which it is quite as necessary to guard against as a burning sun, for a cold may in this case "perform the effect of heat."* *M. J. B.*

—— The April number of the *Illustration Horticole* contains coloured figures of Episcia Luciani, t. 236, Lomaria gigantea, t. 237, a fine Tree Fern of relatively low stature; Selenipedium vittatum, t. 238, a species with narrow leaves with a yellow margin; and Artanthe decurrens, t. 239, a fine bold-foliaged plant, with ovate obtuse leaves, green above, claret-coloured on the under-surface.

—— We are informed that the plan of constructing cast-iron and slate foundations described in our last issue, p. 697, was introduced more than twenty years since by Mr. ORMSON, of Chelsea.

—— The magnificent ODONTOGLOSSUM VENILLARIUM is beginning to make its appearance with some effect at the flower shows, and some fine pieces have been shown by Messrs. VEITCH & SONS, Mr. WARD, and others; but we understand that these are likely to be all put into the shade by some plants to be exhibited by Mr. RICHARDS, gr. to Baron ROTHSCHILD, at Gunnersbury, at the Royal Horticultural Society's exhibition on Wednesday next. We understand that on one bulb Mr. RICHARDS has four stems and forty flowers, and on another plant forty-two flowers.

—— Two dwarf MORELLO CHERRY TREES in my garden, which are one sheet of flowers, attracted my notice from the greater part of the flowers being abortive. On examination I was surprised to find some of the flowers without a vestige of an ovary, while in the majority of those which are abortive the style is extremely short by the side of flowers in which it has the usual dimensions. In every case the short style had perished, which made me at first believe that, as is frequently the case with Pears, the style was affected by frost before the expansion of the bud. Unfortunately I could not find a single flower in which the short style was uninjured, so that I must wait for another season to examine the matter more closely. I do not recollect to have seen any notice of this peculiarity, but if any of the readers of the *Gardeners' Chronicle* have any experience on the subject it would be well to record it. *M. J. B.*

—— According to some remarks recently published in a report on the DISEASES OF COFFEE, by Dr. M. C. COOKE, the "Coffee rot" is equally or more injurious to the Coffee plants than the so called Coffee-leaf disease; that it is a species of parasitic (epiphytic) fungus, not before known to science (Pellicularia Koleroga, Cooke); that it is of such a nature as is likely to yield to treatment by sulphur in a similar manner to that employed in the Hop gardens; that the Coffee-leaf disease (Hemileia vastatrix) is also prevalent, but that planters are divided in opinion as to its injurious influence on the quantity or quality of the crop; and that it is advisable to experiment on diseased Coffee trees with Condy's fluid in the manner in which it has been successfully employed in the Hollyhock disease.

—— It is a curious fact, says a writer in the *Gartenflora*, that two MOTHER TREES of the WEEPING OAK and BEECH exist in the same forest, not twenty minutes' walk distant from each other, and only a quarter and half-an-hour's walk respectively from the last houses on the outskirts of Wiesbaden. The Weeping Oak, like the upright variety, belongs to Q. pedunculatis. It is a majestic, healthy tree, 17 feet to 18 feet in circumference, with an ample, spreading crown. The main branches are nearly horizontal, and the slender ultimate branchlets, with distant leaves, hang down, festoon-like, all around. This tree stands in a corner on the edge of the forest, only ten minutes' walk beyond the Hofgaisberg Agricultural Institute, on the road to the "Platte," the hunting-seat of the Duke of NASSAU. The Beech stands in the midst of the forest, but in a sufficiently open spot to be seen and to develope its full beauty. It is the *beau ideal* of a beautiful tree, compared with which the finest specimens raised by grafting are miserable, misshapen abortions. The trunk is about 8 feet to 9 feet in girth, symmetrically dividing into massive branches. But most of the cultivated Weeping Oaks and Beeches are descendants of two trees in the Weser Mountains, not far from Bad Neundorf. Seed from these weeping trees produces only crippled shrubs.

—— KERRIA JAPONICA VARIEGATA forms one of the prettiest imaginable combinations of variegated foliage and bright yellow flowers. Some highly ornamental examples are now to be seen in the Temperate-house at Kew. They are all planted out, and, though it does well in pots, the effect in this way is much finer, and more easily produced. It is a variegated form of the single-flowered type, which is much more rare than the plant, bearing double flowers, so frequently seen in shrubberies.

—— The Prefect of the Seine has, we learn from *Nature*, appointed a Commission, composed of M. ALPHAND, the chief engineer of the city of Paris, two other engineers, and the head of the public gardens, to study some of the public works of London, such as the Metropolitan Railway, the gardening of the public parks, the sewage and water system, &c. We hope M. ALPHAND will not take the gardening on the Thames Embankment or Leicester Square as the type of English gardening, and if he should report unfavourably on the keeping of St. James' Park, that most successful of London landscape gardens, we trust his report may be effectual in stirring up the powers that be to a sense of their duty.

—— It is stated that whereas previous to the formation of the SUEZ CANAL RAIN did not fall on the average more than once a year, now rain falls at least twice a month.

—— The AMERICAN VINES have hitherto been supposed to be free from the PHYLLOXERA, but M. MARÉS is stated to have demonstrated its presence on the leaves of American Vines introduced into France.

—— Next year, as we learn from the *Hamburger Gartenzeitung*, it is proposed to celebrate in Germany THE CENTENARY OF THE GARDENER ALTMANN, who planted the rampart gardens of Bremen and Hamburg. The beautiful gardens of Bremen were begun in 1803, between which date and 1806 the demolition of the bastions and planting of shrubs and trees was carried on with great expedition. In 1804 ALTMANN was called to Hamburg, to undertake the laying-out of the projected rampart gardens there, and he superintended the two tasks simultaneously. But wars arose, and the cities were invested and occupied, and the work accomplished to a certain extent destroyed. The French took possession of Bremen in 1810, and in 1813 the Russians appeared before Hamburg, and partially besieged it. However, some years afterwards ALTMANN had the satisfaction of completing these gardens, in which he was interested heart and soul; and the inhabitants, remembering to whom they are indebted for the creation of such deligbtful resorts, propose honouring his memory.

—— SCHÜBELER, in his *Pflanzenwelt Norwegens*, describes a POLLARDED BIRCH, which threw up several secondary stems from the summit of the decapitated trunk, and also formed new roots at the base of the former, which pushed their way downwards through the decayed wood of the old trunk. Latterly the tree was exclusively nourished through these roots, some of which were as thick as a man's arm. From the detailed description given of this singular tree there seems to be no doubt that it originated in the way stated, thus corroborating what has been written in this paper respecting some Willows and other trees. Some writers have asserted that these are invariably seedling trees, which have germinated in the decayed matter at the top of the pollard, and gradually rooted through to the ground.

—— That there is some prospect of some of the COLOSSAL TREES OF NORTH AMERICA attaining their full development in some parts of Europe may be gathered from some notes on various species growing in the department of Ariège, in France, communicated by a M. LEO D'OUNOUS to the French Acclimatisation Society. Imagine a tree of Sequoia sempervirens more than 160 feet high, with a trunk nearly 9 feet in girth at a man's height from the ground. This grand specimen, we are informed, is now covered with thousands of cones filled with good seeds, and as they are borne on the extremities of the branchlets it causes them to hang down in graceful curves. But when we are told that this gigantic tree is barely sixteen years old we would suggest that the writer intended to state that it had only been in its present position about that period; under any circumstances it must have grown very rapidly, but at the rate of 10 feet a year from the seed almost surpasses belief. Nevertheless it seems very probable that the gigantic Mammoth and Red-wood trees of North America may grow

* Ne penetrabile frigus adurat." *Virg. Georg.* . 93.

much faster than our European trees. The same writer proceeds to describe an Atlas Cedar, scarcely sixteen years old, of very remarkable dimensions, equalling in height the finest Tulip trees sixty to seventy years old.

—— Writing on the FORMATION OF SURFACE HAIRS ON PLANTS, in the *Flora*, Dr. KRAUS thinks cause and effect have often been confounded in explaining this phenomenon. In some experiments with Potato shoots (Prolific) he found that when grown in a very moist atmosphere they were not only relatively and absolutely less hairy, but sometimes even quite naked; and in general the region of hairiness does not reach so high on the stem as when grown in drier air. Under the former conditions growth is, however, much more rapid, and the internodes much longer, and more roots are given off at the nodes. The explanation of this, Dr. KRAUS says, is simple. By decreasing humidity, and consequently less sap-pressure, the longitudinal growth decreases, and it follows that there is a relatively greater lateral expansive force, and the result is seen not only in the more active growth of the cambium cells, but it also extends to the epidermal cells. A comparison of some shoots grown in darkness with others which had been exposed to the light for two or three weeks exhibited the same peculiarity, that is to say, hairs began to appear only where the internodes became shorter. Thus it is immaterial what the agent may be that hinders longitudinal growth, it promotes the development of hairs.

—— According to the *Chronique de la Société d'Acclimatation de Paris* there is a NEW CEREAL in cultivation in Oregon which nobody has yet been able to determine, for, although it has the aspect of Wheat, its stem, its manner of growth, and its enormous filaments (? awns) would cause a farmer to take it for Rye or Barley. The seed, it is said, was found in the crop of a wild goose. A single plant bears from seven to ten ears on stems 4½ to 5 feet high. Is this another American wonder?

—— In the *Bulletin* of the same society one of the members is reported to have communicated the fact that Opuntia vulgaris has borne 36° of frost without injury.

—— The last few weeks have afforded such a continuance of COLD cutting northern and easterly WINDS as probably few persons living can recollect at this season of the year. Vegetation in general until within the last few days has had an unusual appearance: the leaves of deciduous trees in the neighbourhood of London, so far as they have been able to progress during the past fortnight, have had a most peculiar bronzy yellow hue, in some cases, especially the Oaks, suffused with red, and in addition to which the young foliage has a singularly stunted, crumpled aspect. Evergreen shrubs generally look miserable. Herbaceous plants as a rule have stood the scathing winds, especially where they have been a little sheltered. We recently took a run into Mr. WAKE'S Nursery, Tottenham, to see how spring flowering plants in general had fared; we found many things unusually late, but by far the greater number have been much less affected than might have been expected. Nothing seems to have braved the blast so well as the different varieties of Pansies, which are as bright and full of flower as if the weather had been of the most genial description; amongst the most effective of these were Improved Blue, very fine; Blue King, Great Eastern, Black Diamond, Mrs. Turner, and Cloth of Gold; Violas Blue Bedder, Cliveden Blue, the small V. pedata, Scilla campanulata, and S. nutans in numerous shades of blue. Helianthemum Rosy Gem will soon be one mass of flower. Pæonia tenuifolia flore pleno; new Aquilegia, pale blue with sulphur corolla; ditto, with blue segments and straw-coloured corolla; Coronilla minima, Lychnis alpina, Cyclobothra elegans, Saxifraga granulata flore pleno, Cardamine pratensis flore pleno, Veronica prostrata, Pinguicula grandiflora, scarce and difficult to grow—it is here cultivated in pans. The grand old Iris Susiana, Cypripedium montanum, Cheiranthus alpinus, Aubrietia grandiflora, Lithospermum prostratum, Anemone sylvestris, Caltha palustris flore pleno, Cheiranthus Marshallii, Phlox verna, Aubrietia Campbelli Improved; Geum montanum, the first to flower of the family; Cypripedium pubescens, Gentiana acaulis, Phlox setacea, P. divaricata, Ajuga reptans purpurea, Globularia nudicaulis, Iris cristata, I. nudicaulis, Anemone palmata, Trollius japonica flore pleno, Ranunculus aconitifolius flore pleno, white Dielytra spectabilis, Dodecatheon media, M. elegans, M. albiflorum, M. violaceum integrifolium and M. Jeffreyanum, Iris tuberosa, Primula cortusoides amœna, Ranunculus amplexicaulis. A number of very handsome dwarf Iris seedlings, including whites, yellows, blues in various shades, and some splendid dark varieties; quantities of fine forms of seedling Polyanthus that have stood the intense cutting wind better than most things; Corydalis nobilis, yellow, most distinct and handsome; Pulmonaria virginica, beautiful pale blue; Asphodelus albus, with its singular erect spikes; Trollius europæus var., from intense orange to palest sulphur, stood the cold well; Trillium grandiflorum, white; Orchis foliosa, coming very strong. The earlier flowering portion of Narcissus were of course over, but there was a good display of the Poeticus section, which are here grown in immense quantity, and completely scent the air with their delightful perfume. Aponogeton distachyon was also in flower.

—— The Hereford meeting of the BATH AND WEST OF ENGLAND SOCIETY and Southern Counties Association, commencing on Whit-Monday, June 5, and extending over the four following days, promises to equal the most successful of its predecessors. The showyard, 30 acres in extent, occupies the site of the well-known racecourse; and, for the convenience of exhibitors, a railway siding has been provided, as on the occasion of the Society's former visit, now eleven years ago. The entries in all departments are unusually large and important. The cattle classes are remarkably well filled, the entries numbering 280, and including 118 Herefords, represented by 150 animals, 55 Shorthorns, 34 Sussex, 26 Devons, 26 Jerseys, and 21 Guernseys. Of sheep there are 178 pens from the flocks of nearly all the best breeders, including H.R.H. the Prince of WALES, and comprising amongst others 38 Southdowns, 38 Shropshires, 17 Hampshire Downs, 11 Oxfordshire Downs, 21 Devon longwools, 10 Cotswolds, and 13 Romney Marsh or Kentish sheep. The horses number 132, and comprise several very splendid entire animals. Of pigs there are 104 entries. The total entries of stock are 723, as against 740 on the occasion of the Society's recent visit to Bristol, but the actual number of animals present in the showyard will this year be greater than in 1874. The poultry show will be one of the largest ever held by the Society, there being altogether 475 pens, of which 103 are pigeons. The implement department will also be on a scale of unusual magnitude, the machinery in motion occupying 79 compartments, as against 59 at Bristol, and in the shedding, nearly three miles in length, will be found specimens of every conceivable description of labour-saving machinery. The horticultural tent will, as usual, contain a display of plants and flowers, and in the arts department will be found some objects of special beauty and interest, including a fine display of Honiton lace.

—— Mr. J. T. PEACOCK, Sudbury House, Hammersmith, has forwarded to the Royal Botanic Society's Gardens, Regent's Park, a choice collection of Agaves, Aloes, Cacti, and other succulent plants, which will remain as a permanent exhibition, in the new wing opened by His Serene Highness the Duke of TECK on June 1. In consequence of the unfavourable weather the flower-bed competition, which it was intended should be held on the same day, was postponed.

—— On Thursday and Friday of last week an important sale of Orchids, Amaryllis, Azaleas, specimen and other plants, took place at the conservatories, Meadowbank, Uddingston. The auctioneer was Mr. DAVID MITCHELL, formerly of the gardens, Hamilton Palace—the right man in the right place at such a sale. There were in all about 650 lots, the top price for any single plant being for a splendid Tree Fern (Dicksonia antarctica); length of stem, 7 feet 9 inches; circumference at base, 4 feet. After a spirited competition, it was knocked down to Sir SIMON M. LOCKHART, of Lee, at the price of £25 4*s*. In the class of Orchids, the highest price obtained for a single plant was £14 10*s*., given by Messrs. THOMAS JACKSON & SON, nurserymen, Kingston-upon-Thames, for a fine specimen of Lælia elegans Turnerii. The following are a few examples of how the orchidaceous department went:—Cattleya exoniensis, £7 5*s*.; Lælia irorata, £6 10*s*.; Lælia anceps magnifica, £5 17*s*. 6*d*.; Lælia elegans Wolstenholmiæ, £5 5*s*.; Cattleya maxima grandis, £4 15*s*.; Cattleya Warnerii grandis, £4 12*s*. 6*d*.; Pescatorea Dayana splendens, and Pilumna nobilis, each £4 10*s*. The Azaleas, as a whole, brought fairly good prices, the top being that obtained for a really magnificent specimen of Iveryana Improved, 5 feet 6 inches by 5 feet, and in full flower. £10 was offered to start it with, and it ran up to £14 10*s*., the purchaser being C. WALKER, Esq., of Lanark Mills. A Glory of Sunninghill, 3 feet 6 inches by 2 feet 6 inches, in flower, brought £5 17*s*. 6*d*.; a Juliana, 3 feet 6 inches by 3 feet, in flower, £5 15*s*.; and a Gladstonessi formosa, £5 2*s*. 6*d*. The following brought £5 each:—Leopold the First, Stanleyana magnifica albo-plena, and Sir Charles Napier. The following are a few miscellaneous quotations, with the names of purchasers:—Erica tricolor Wilsonii, £9 10*s*. (STEEL); Areca lutescens, a specially handsome Palm, £8; Nerine Fothergilli major, £5; do. do., £4 2*s*. 6*d*. (COCHRANE); do. do., £4 (NELSON); Nerine flexuosa, £3 10*s*.; Amaryllis Tizzie, £3 2*s*. 6*d*. (STEEL); and three splendid plants of Todea superba, for which £6 was given by Mr. STEEL.

—— At a recent meeting of the *Königliche Gesellschaft der Wissenschaften*, at Gottingen, Dr. H. G. HOLLE exhibited and described a new apparatus for drawing from the microscope. We are indebted to the *Botanische Zeitung* for the following particulars:—The inventor believes that he has overcome most of the inconveniences of previous instruments. The principle of his is that neither the drawing-pencil itself nor its reflection is seen, but a collective picture of the whole is brought into view by a combination of lenses. To effect this the eye-piece of the microscope in its ordinary position is made to serve also for a telescope fixed at about the distance of the height of the microscope; the axis is twice reflected at right angles by mirrors. The first, and, of course, transparent mirror, is placed immediately under the eye-piece, and the second is above the object-glass of the telescope. The first is of the greatest tenuity possible (about .2 of a millimetre thick), in order that the images of the pencil transmitted by the upper and lower faces of the glass may fall together. The mirror above the objective, on the contrary, should be of moderate thickness, or it may be replaced by a prism. Between the two mirrors there is a lens which again transposes the inverted image of the pencil. In using this apparatus the microscope-image is seen in a direct manner without tiring the eye. The position of the hand occupied in drawing is immediately to the right of the microscope, the most comfortable position possible. The picture is drawn without being reversed, and on a scale answering to the objective employed, and an eye-piece of low power. When an objective of low power is used it is necessary with this apparatus as with every other to darken the field of vision in order that the image of the pencil may be distinctly seen, but when an object-glass of high power is employed, or the object itself is more opaque, it is sufficiently conspicuous. Dr. HOLLE asserts that he has drawn thick sections of meristematic tissues easily, which it would be impossible to do even with OBERHAUSER'S apparatus.

—— According to M. DELCHEVALERIE (*Bulletin de la Société d'Acclimatation*), the following TROPICAL FRUIT TREES succeed well IN EGYPT. The Rose Apple (see p. 723) is a fine ornamental tree, and ripens its fruit perfectly in the gardens of the Khedive at Ghezireh. It bore fruit for the first time in Egypt in 1868, and there are trees now over 25 feet in height. The Mango fruits abundantly in the gardens of Cairo, and the fruit is of a delicious flavour. The largest trees are about 30 feet high. Several varieties of Papaw flourish at Alexandria and Cairo. The Sweet-sop is cultivated in almost every garden, and the Arabs call it *Kechta*, or cream-fruit. Other trees and shrubs grown for their fruits are Ægle Marmelos, Eriobotrya japonica, Eugenia australis, Musa sinensis, Psidium pyriferum and pomiferum, Persea gratissima, and Tamarindus indica. This list does not include any of those exotic fruits which have long been cultivated in Egypt. The African Baobab is quite hardy in the climate of Cairo, but although it has been introduced about forty years, it has hitherto produced no flowers. At the present time it forms one of the largest trees in Egypt.

THE EMPEROR'S WINTER GARDEN, VIENNA.

THE Winter Garden in the Imperial Gardens, of which, through the courtesy of M. Antoine, the talented director, we are enabled to give two representations, is connected with the palace by a subway, and is 406 feet long and 42 feet high. It consists of a large transept and two wings, each provided with an entrance lobby. On entering the house by the lobby which communicates with the tunnel we first encounter a group of Agaves, rising above which is a stately specimen of Dracæna Ehrenbergii. Further on is a large example of Cunninghamia sinensis, around the base of whose stem is a thicket of Citriobatus multiflora and Muhlenbeckia complexa. Down in a hollow is a pool of water surrounded with flowering shrubs, and in the midst of which is a shallow porcelain vase, embellished with a painted wreath of water plants. Tall plants of Kiggellaria africana, various species of Acacia and Melaleuca, Cussonia thyrsiflora, and lower down Hedychium Gardnerianum and Cyrtomium falcatum, are planted around this water, which is further enlivened by miniature fountains. From this point we have a scene remarkable for the large brown trunks of Dicksonia antarctica in the middle ground, and a fine Bonapartea glauca among dwarfer Ferns in the foreground. Eugenia australis and elliptica, and various species of Melaleuca and Acacia form a shrubbery, above which rise tall trees of Leptospermum flexuosum and Arbutus Andrachne, whose branches meet over the pathways. Casting a glance back now from the transept and over the space just traversed, the eye lights upon large plants of Todea africana, Cyathea dealbata and medullaris, Balantium Sellowianum, Alsophila australis, Dasylirion longifolium and glaucum, Astelia Banksii, Stadmannia africana, Phormium tenax fol. var., and a slender-stemmed Yucca conspicua, with Hedera chrysocarpa climbing over it, opposite to which is the elegant Edwardsia microphylla. The central area is adorned with bronze busts of their Imperial majesties, encircled with flowers and fine foliage. Among some of the larger plants in the background here are Camellias and old specimens of Leptospermum flexuosum, Banksia integrifolia, Laurus fœtans, Magnolia grandiflora, Fabricia levigata, Acacia longifolia, &c., associated with many smaller things. In the foreground are isolated old trees of Rhododendron arboreum, and in the middle, above a groundwork of flowering shrubs, is a handsome porcelain vase, 8 feet high, and beautifully painted with female figures. Passing now to the other wing, we see Araucaria Cunninghami, whose top nearly touches the roof of the house, Araucaria excelsa, Dammara australis, Sciadopitys verticillata, Callitris quadrivalvis, Podocarpus nubigena, Phyllocladus Cunninghami, Dacrydium cupressimum and elatum, several Retinosporas, Dammara Brownii, Aralia spathulata, Eurya latifolia, Roezlia regia, Olea crispa, Agnostus sinuatus, Grevillea robusta, Banksia integrifolia, spinulosa and crenulata, Quercus alnifolia, Laurus involucrata, and other large plants; terminating in a large and tall specimen of Cupressus thurifera, associated with Araucaria Bidwillii, Cookii, and brasiliensis. In an adjoining apartment is a collection of dried plants, trunks of trees, and other botanical specimens, including a fine specimen of Welwitschia.

RHIPSALIS: ITS MODE OF GROWTH, ETC.

THE genus Rhipsalis is remarkable in many respects. In the first place it presents a marvellous variety of forms, very distinct from each other, and most of them quite different in aspect from any other members of the Cactus tribe, to which the genus belongs. Secondly, it is exceedingly interesting to the student of plant distribution in being the only genus of the family indigenous in the Old World. True, one or two species of Opuntia are now to be met with in a wild state in many parts of Africa and Asia, but we have good evidence that they were originally introduced from America. Only one species of Rhipsalis is indigenous in the Old World, but this species, R. cassytha, has a very wide geographical range, being found in Africa from Guinea southwards to the Cape Colony, Mauritius, and Ceylon, and also in tropical America. This is a very singular plant, having in the adult state fleshy cylindrical branches and yellowish white berries, resembling those of the Mistleto; indeed, we remember an instance in which a lady could not be persuaded by a full bench of botanists that it was not the same thing under different conditions, and she appeared to go away unconvinced and with a very low estimate of the wisdom of the botanists whom she had consulted.

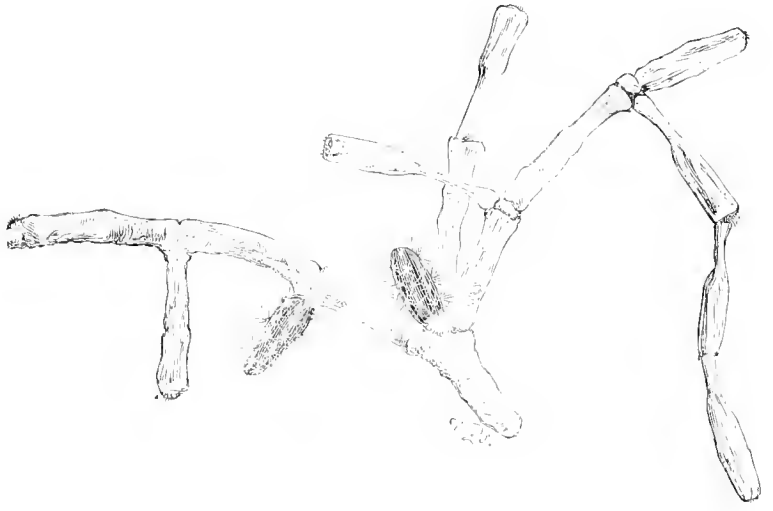

FIG. 134.—YOUNG CEREUS-LIKE SHOOTS OF RHIPSALIS SALICORNIOIDES.

As this is, perhaps, the commonest species in cultivation, a portion of the late Dr. Welwitsch's description of it, as he found it growing wild in Pungo Andongo and Golungo Alto in western tropical Africa, may be useful. This description appears in the second volume of Oliver's *Flora of Tropical Africa*, and runs as follows:—"Pendent shrub, reaching 4 to 9 feet or more, from rocks and moss-grown trees; branches cylindrical, smooth, glaucescent, articulated at the insertion, either dichotomous or approximately verticillate, occasionally rooting in young plants, and thinly clothed with tufted setæ." The last clause of this sentence brings us to the principal subject of this article. The facts we are about to describe are doubtless known to many cultivators, but cultivators sometimes neglect to write anything about many of the interesting phenomena of plant-life which come under their observation, because they assume that they must be already well known. It is no exaggeration to say that almost everything connected with the germination of seeds, and the history of plants in their earliest stages of growth, remains to be written; but it frequently happens that, when some novelty (to a botanist) in this direction is put on record, the gardeners say, "Why, everybody knew that."

We have already said that most of the species of Rhipsalis differ widely from other Cactaceæ, and this is more particularly the case in the species found in the Old World; but this and several others often exhibit the true Cactus form at some period of their existence. The accompanying figure of a branch of R. salicornioides (fig. 134) shows two shoots clothed with the tufted bristles characteristic of the Cactaceæ. The only English book in which we have seen this kind of reversion, if we may so term it, figured and described, is Loddige's *Botanical Cabinet*, plate 369. This was as long ago as 1819, and it is stated in the text that the upper branches and twigs of this plant are quite smooth, but it occasionally puts forth near the ground a jointed branch, which is furnished with soft hairy spines. But this peculiarity is not confined to any particular part of the plant, as prickly shoots appear here and there on any part of it. Vöchting, in an important article in the ninth volume of Pringsheim's *Jahrbücher für Wissenschaftliche Botanik*, on the morphology and anatomy of the Rhipsalideæ gives much interesting information on the development of this class of plants; among other things he mentions finding a shoot on an old plant of Rhipsalis paradoxa in the Berlin Botanic Garden strongly resembling normal Cereus speciosissimus. More recently (*Botanische Zeitung*, Nos. 13 and 14, 1876) Dr. Irmisch has figured and described the different stages of development of R. cassytha from germination to the flowering stage. We will briefly summarise his article.

Seeds of R. cassytha, exposed to a moderate degree of heat and moisture, will germinate in the course of a few days if laid upon the surface of a somewhat sandy soil. The season of the year appears to exercise little influence in this respect, for seeds germinated equally well in spring and summer as in October. The young plantlet, in its earliest stage after bursting the testa and protruding its primary root and seed-leaves, is a cylindrical or spindle-shaped fleshy body, surmounted by the very small triangular cotyledons, without any trace of the plumule or future stem. Soon, however, the cotyledons, which are about one-fortieth of an inch long, take a horizontal direction, and from the base of the rootlet proceed a number of very fine hairs, which serve not only as organs of absorption, but, in this early stage more especially, to fix the somewhat clumsy and top-heavy plant in the soil. The next change is in the upper part of the axis between the cotyledons, where a small eminence gradually forms, and on this, in a cross-wise direction to the cotyledons, appear two nipple-like expansions, which each give birth to a tuft of two, three, or four bristles. The stem then rapidly elongates, and two other nipples with tufts of bristles, in a vertical line with the cotyledons, are formed, to be succeeded by others above the first, and so on. The stem itself is thick, fleshy, and quadrangular, with concave sides, presenting all the characteristic features of a normal cactaceous plant. No trace of scales answering to those spirally arranged on the later developed cylindrical branches could be found. Cultivated in a room this first shoot continued to grow slowly for several months, and ceased quite during the winter; under more favourable conditions it is possible that the primary shoot may develope more rapidly, but probably never so rapidly as subsequently formed branches, which often attain their full growth in a few weeks. Without the figures illustrating Dr. Irmisch's paper it would be tedious to follow him through all the details. He found that they reached about the fifth degree of ramification before flowering, though this cannot be regarded as an absolute limit. Branches of the third order sometimes preserve the angular form and bristles, but the flowering branches are quite cylindrical and smooth. It is a noteworthy fact that in this, as in the species represented by the annexed figure, the ultimate branchlets are deciduous.

The foregoing notes show how interesting is the study of the life history of a plant, as it is sure to bring to light many interesting and previously unknown facts. We are indebted to Mr. Spencer Moore for calling our attention to the plant above figured.

Home Correspondence.

Narcissus biflorus.—There is a very good reason why N. biflorus should not be a native of this country, as it not only occurs in various forms mixed with N. poeticus in meadows in France, but is always, I believe, without a trace of ovules. I have examined it on very numerous occasions without finding a single ovule, except in a plant at Mr. Wilson Saunders', of unknown origin; and I have, moreover, in my garden an individual received some years since from that gentleman, in which there is but a single speck of red to show that it is N. poeticus. N. biflorus is, I believe, in this country always an escape from gardens. It used to be abundant at Cambridge in a small island

in the Cam, and, together with two or three other plants, it occurred clearly as an outcast from the Royal Garden at Fotheringhay, where I have frequently seen it, but the last time I was there it had vanished, from so many persons taking bulbs. I have plants still in my garden from the same source. It would be interesting to ascertain whether this peculiarity with respect to the absence of ovules is very general. *M. J. B.*

Mr. Grieve's Grape Vine Sport.—I cannot resist the appeal of my friend and neighbour of over twenty years' standing, Mr. Grieve, to give my opinion on the bunch of Golden Champion Grapes that was developed on his Trebbiano Vine under the circumstances and conditions so lucidly set forth by him in the *Gardeners' Chronicle* of May 20, as also in his former article, written at the time when all were invited to go and see and test the matter for themselves [1875, p. 21, fig. 4]. Those who know Mr. Grieve as I do, need no further proof as to the facts than his statement; but as some have doubted the facts, and being appealed to, I have no hesitation in confirming all that Mr. Grieve has stated. I saw, tasted, and handled the sport, and have no doubt whatever that the bunch was a veritable Golden Champion. Mr. Grieve will remember that I was very sceptical, and needed a good deal of convincing; for though tolerably conversant with Mr. Darwin's theories and striking instances of variations from normal types, I think every such case should be carefully judged on its merits, and none accepted as a matter of course without the clearest evidence. The facts in this case, too, seemed to rest on such a slender basis, for little or no Golden Champion was left when that variety was cut out; and the change in that one bunch was so complete, that the case at first sight seemed more like one of skilful manipulation than of natural growth. Hence my scepticism at first blush, and firm conviction after the most searching and careful examination. I have seen the Golden Champion at Clovenfords and elsewhere, and have grown it myself, and still grow a single Vine as a curiosity. I have also been familiar with the Trebbiano for thirty years, and am well aware that it is liable to considerable change, alike in size and form of bunch, and especially in form of berry, the latter being generally oval but occasionally also almost round. The skin is also rather thick and tough, partially adhering to the flesh. The flesh, too, in colour and quality, is widely different from that of the Golden Champion, alike in colour, texture, size, and general quality. In fact, few white Grapes could well be more unlike each other than the Trebbiano and the Golden Champion. Besides, the Golden Champion, in Mr. Grieve's case, manifested its peculiar characteristic of spotting to the fullest extent. This tendency also seems to overflow into some of the bunches of the Trebbiano nearest to the Champion bunch. Now, the Trebbiano, as a rule, exhibits no such tendency; on the contrary, well grown and pushed, it is one of the best keeping of late Grapes, and will hang till March or April. It ought perhaps also to be stated that my visit to Culford to see the sport followed close on that of one of our best practical pomologists, Dr. Hogg, who, after the most careful examination, labelled this bunch Golden Champion sport on the Trebbiano. The facts recorded in Mr. Grieve's last note also confirm the truth of the sport being a genuine Golden Champion. The non growth of the eyes was a Champion caprice. The progress and failure of this Vine has been a history of surprises. It grows here, refuses to grow there, finishes its fruit fairly well in one place, runs into sheer rottenness in another, without any apparent or tangible cause for such widely different results. What, therefore, more likely than that the eyes of the Golden Champion should refuse to grow or root? In fact it was just what might be expected. It will be interesting to hear the fate of those sent to its raiser, Mr. Thomson. This gentleman can do almost anything with Vines (see "Clovenfords"); but should the eyes sent to him root and fruit, and prove Trebbiano only, this will by no means disprove that the sport of the Golden Champion appeared. Sports hie back as well as forward, and in this case it is just possible that all the Champion tendency was used up in the production of that single bunch. It was of good size and form, and well finished. It may have had a sort of mechanical origin. Admitting that a plant is, perhaps, less a unity than a community, what more likely than that a cluster of gemmules of Golden Champion had been left in the old stock of the Vine? These might have been shot along with the ascending sap, and settled into this one bud. If so, the greater proportion, or even the whole of them, might have been expended in the development of this bunch of fruit, and the wood of the spur continue chiefly or wholly Trebbiano still; or only outer eyes might be formed under the potency of the Champion gemmules, and others under the influence of the Trebbiano only. Be all that as it may, no one can question that what Mr. Grieve and so many others saw, handled, tasted, was a bunch of Golden Champion Grape, on the head, or nearly so, of a Trebbiano Vine—that all the other bunches were Trebbiano—and that the spotting tendency of the Golden Champion had slightly infected the bunches of Trebbiano nearest to it. *D. T. Fish.*

—— Last October twelvemonth, when I was at Culford, Mr. Grieve kindly drew my attention to the Vine sport which took place with the Trebbiano, producing a bunch of the Golden Champion. Never having seen or heard of such a thing before, I examined it, and very naturally felt very much interested; indeed, I could scarcely believe my own eyes for a time, thinking it almost next to an impossibility, until I examined it more carefully, and was fully satisfied in my own mind; and seeing in the last issue of the *Gardeners' Chronicle* a statement relating to this important matter by Mr. Grieve, I would therefore in justice to him say, that I fully believe it to have been a true Golden Champion bunch; and it might be well if some of our vegetable physiologists would throw a little light on the subject, as it would appear that such a sport is of very rare occurrence. *George Erskine, Livermere Park.*

Odontoglossum vexillarium.—In the notice which appeared of the above (p. 598) Mr. Richards is said to speak of high moist heat being necessary for its successful culture. Mr. Newman (p. 700) seems to think something higher than Cattleya-house heat was intended. Mr. Richards no doubt intended to convey that the plant in question required more heat than the majority of Odontoglossums, which all who have grown it will, I think, admit. My experience is that Roezli, Phalænopsis, citrosmum, and vexillarium, thrive best in the heat of the Cattleya-house. It was in company with O. Phalænopsis, and other things requiring such heat, that I saw the splendid examples of vexillarium at Gunnersbury thriving. I may add that Mr. Richards is too practical a cultivator of Odontoglossums—as the plants under his charge will testify—to place them in more heat than is necessary for their full development. The best plant at Gunnersbury has forty-two buds possibly in bloom by this time, thus surpassing the one in Mr. Michael's collection mentioned by Mr. Newman. *James Huntley, The Gardens, Poulet Lodge, Twickenham.*

Pabrika or Hungarian Pepper.—I see that one of your correspondents asks about the Hungarian Pabrika. It is Cayenne pepper, but made I believe of some of the larger varieties of Capsicum, grown in Hungary, and by no means so hot as our Cayenne pepper. The Hungarians put it into all their dishes, and they consider their national dish to be what they call Pabrika hendel, which is a *fricassée* of chicken with a great deal of Pabrika in it. They give it you at every little inn in Hungary, just as you would gets eggs and bacon at an out-of-the-way English inn, and a very good dish it is. *C. W. Strickland, Hildenley, Malton.*

Pawlonia imperialis Flowering.—I fancy it is a rare event for the Pawlonia imperialis to flower in this climate, and think it may interest some of your readers to know that one is now in bloom in my garden. The tree was planted about eight years ago, and has grown well, but this is the first year it has flowered. *William Wickham, Binsted-Wyck, Alton, Hants.*

The Gladiolus.—I, some years ago, in my little book on the Gladiolus, expressed my view of the disease, and also stated Mr. Berkeley's opinion on it, and nothing that has been brought before me since has led me to alter my opinion. It is of course easy to say it is exhaustion that causes the death of the corms, but I want, in support of this, these facts to be accounted for:—1. That two bulbs I, or rather my friend Mr. Banks, received, direct from Souchet, of a sort that has never been "let out" until this autumn, were as badly diseased as any I ever saw. One of these was sent to Mr. W. G Smith. 2. That two years ago, on going through Mr. Kelway's ground, I found that a large number of the plants had died off, and that of half a dozen he was good enough to send me in 1874 two never even reached flowering, but died off just as the spike was formed. As to culture I imagine that Mr. Banks is as careful and painstaking a cultivator as can be, and yet his losses are something frightful; while, though in a smaller degree, I have seen the disease at Fontainebleau. I believe they are more free from it in France than we are, because of their drier and warmer autumns. *D., Deal.*

Gnat Bites.—A lady friend of mine, who suffers dreadfully from the unwelcome attentions of these insect pests, tells me that she has at last found a cure for their stings in the shape of a piece of common soda which, if moistened, and applied constantly, will prevent all inflammation. She invariably carries a bit of soda in her pocket. A branch of Elder leaves, too, is a preventive, and "prevention is better than cure," I should think. A gentleman I know, a great fisherman, says that when he sticks Elder leaves in his hat, the gnats never bite him. *H. E. Watney.*

The Squares of London.—When in town last June I noticed the disgraceful condition of one of the gardens mentioned by Mr. Waterall, and I was then informed by a lady residing in the neighbourhood of Euston Square that it arose from a dispute with a contractor, who, taking advantage of some power unfortunately possessed by him over the ground, carted all kinds of rubbish into the Square, much to the disgust of the occupiers of those handsome houses which front it. *Helen E. Watney.*

The Common and Germander Speedwells.—I always read with interest Mrs. Watney's notes, showing as they do so lively an appreciation of the beauties of Nature. That lady will excuse me if I say that I think she has confused Veronica Chamædrys (Germander Speedwell), which flowers in May, and is now a conspicuous ornament of our lane-banks, with Veronica officinalis (common Speedwell), which flowers a month later, and is a less attractive and less common flower. It is one of the many instances in botanical nomenclature where the term "common" is applied to a less common species. Mrs. Watney's suggestion that the Germander Speedwell is far prettier that many of our cultivated plants and deserves a place in gardens, is true enough; but I can speak from experience of the great difficulty of imitating in gardens, and especially in flower borders, the exact conditions under which wild flowers are so ornamental in our lanes. Wild gardens are very nice in theory, but those who, like the writer, have tried them, know that, except under very favourable circumstances, they are far more difficult to succeed with than ordinary flower gardens. *C. W. D.*

Hardiness of Rhododendron Dalhousiæ.—We have here a plant of R. Dalhousiæ in full bloom in the open air; it has 140 flowers open, and is a magnificent object. It is grafted on R. ponticum, and has been planted out about ten years, and during that time has never lost its buds through frost—while we have several other plants about the place, seedlings on their own roots, that lose their buds in sharp winters, 8° of frost being sufficient to destroy them. I have grafted some others on the ponticum to see if they will prove as hardy as the one in flower, but their flowers have succumbed to the frost of the past winter. *R. Gill, Cornwall.*

Protecting Trees.—I have fallen on a very good expedient for protecting the bark of young trees from the attacks of hares and rabbits, and such like, and if you think it worth notice in your paper your readers would find it a very simple and effectual way of saving themselves from a great annoyance. The material I use is the virgin cork, which is at present so much employed in the construction of ferneries, hanging baskets, &c. It can be procured in small pieces, which can be very easily placed round the stems of young trees, and attached in such a way that hares and rabbits are completely put at defiance. The mischief caused by dogs and cats to specimen trees planted near dwelling-houses on lawns or parks is thus effectually prevented, and fruit trees in orchards may also be saved from damage in the same way. The plan I follow is to fix the pieces of cork in a proper position by fastening them together with wire or strong twine, which can be done at trifling expense; or a more complete protector could be formed to close round the trees and open and shut with hinges. *W. Baxter Smith, Knowefield Nurseries, Carlisle.*

Toughened Glass.—Notwithstanding the efforts of several English glass manufacturers to produce toughened glass at their works, they do not as yet appear to have so completely effected their object as to be able to supply the market with articles made of that material. A certain amount of success has undoubtedly been achieved, but there would appear to be some detail of the process which has not yet been quite mastered, and the result is that the produce is not so uniform in quality as it must certainly be before it can assume a commercial position. On the other hand, M. de la Bastie, its inventor, has succeeded in establishing the manufacture of toughened glass in France, and is able to supply English houses with articles for domestic use made of that singular material, including that great desideratum lamp glasses. The first to avail himself of this circumstance is Mr. John Mortlock, of 203, Oxford Street, who must certainly take credit for having introduced toughened glass into England as an article of commerce. We recently inspected some specimens of the ware, consisting of tumblers, lamp glasses, and various other domestic articles, and upon that occasion were informed that they are in great request, extensive orders having been received. It may, therefore, be presumed that this invention, full of so much promise, is now on its test and fairly before the

public, and that the fruits of M. de la Bastie's ingenuity are beginning to ripen. It appears certain that, if the present trial be successful, the application of toughened glass will extend far beyond the range of domestic articles, and to this question Mr. Mortlock is addressing himself. Toughened glass is but in its infancy, and if it survives the present extended trial it will doubtless assume an important position in connection with the arts. *Times.* [We have not yet heard of its use by horticultural builders. EDS.]

Notes on Plant Names.—Some of the local names of plants are not fit for the ear in these days, while others border on the absurd. Those who have studied this subject trace certain popular names of plants to Church and Pagan origin, and in some instances blame the Puritans, as for substituting Venus for Our Lady, to suit their religious views. But plants had Pagan names long before the Puritans were heard of; besides, popular names are not easily effaced, especially by scientific ones. Botanists had this in view when, arranging or classifying plants according to the Linnæan system, they retained some of them as generic, or family titles, and others as specific ones only: for instance, Cat Mint is equivalent to Nepeta Cataria, Cowslip or Paigel to Primula veris, Venus' Comb to Scandix Pecten, said to be formerly Lady's Comb. It is a mistake to suppose that all plants having Church titles are of English origin. St. Peter's Wort, Symphoria glomerata, is from North America, and the same of St. Andrew's Cross, Ascyrum Crux Andreæ—the first introduced in 1730, the other in 1759; perhaps such names were sent with them. St. John's Bread, Ceratonia Siliqua, is from the Levant in 1750, while Judas' Tree, Cercis Siliquastrum, is a native of Southern Europe, sent here so far back as 1596—at least so noted in Curtis' *Botanical Magazine*. The legend that Judas hung himself on this kind of tree may have come with it; though tolerably hardy it is rather uncommon, and produces pink papilionaceous blossoms. Again we have Michaelmas Daisy, Aster Tripolium, whose generic name gives the title to upwards of 350 species, all of which, except itself, are of foreign origin, chiefly from North America. Some of them bloom at Michaelmas, and are like clusters of Daisies, hence the name, though some trace it to the feast of St. Michael; but our native Starwort blooms in August, and I may say nearly the same of the six other European species. One of the Lamiums is called Archangels, and another of them Lamium amplexicaule, is Henbit; while a very old writer, in his *Hortus Siccus*, has it Virtia Mortua. I note Henbane, Hyoscyamus niger, to mark that plant names ending in "bane" denote poison: such is Woll's-bane, Aconitum Napellus, the Monkshood, which, though common, is not of English origin. The latter name is derived from the blossoms being shaped somewhat like a monk's cowl. Some years back my attention was called to an incident of geese being poisoned by scooping Monkshood roots from under the snow, and I need hardly recall the awful calamity which happened to a dinner party at Inverness by the cook's mistake of using Monkshood roots for Horse Radish. Once more there is Danewort, Sambucus Ebulus. That sounds like a Norse name, and may be derived from the Scottish tradition of the invading Danes being poisoned by a decoction of its roots prepared by the inhabitants. Some ascribe it to the Picts, who were once invaders themselves. Anyhow, Danewort is a great pest: an inch or two of its roots may soon overrun yards of undisturbed ground. In this locality it is called Ground Elder; in Scotland Bishop-weed. *J. Wighton, Cossey Park.*

Early Ascot Frontignan Grape.—Allow us to correct a slight inaccuracy which occurs in your notice of this Grape in last week's issue. It states that the bunch shown at the Reading show had been cut from an early vinery, where it was growing with Black Hamburghs, and that it was "some days earlier in ripening than that variety." It should have been said that the Frontignan was ripe before the Hamburghs began to colour. The late Mr. Standish considered that it would make a very valuable Grape for outdoor culture. It will be distributed in the autumn at a moderate price. *John Standish & Co.*

The New Rose-house at Gunnersbury.—One of the latest additions to the flower-producing capacities of Gunnersbury Park, Acton, the residence of Baron Lionel de Rothschild, is a Rose-house, which is entirely devoted to the production of Roses in early spring. It was erected about twelve months ago by Mr. James Gray, of Chelsea, and it occupies a warm and sheltered position within the junction of a south and west wall, and it is screened from north-easterly influences by a background of tall trees. The house, which is span-roofed in elevation, is a little longer on the outer side than on the inner one, to suit the space formed by the junction of the walls, and it may be set down at about 36 feet in length at its widest part, by 30 feet in width. It is airy and commodious, and the main ventilation is on both sides of the roof-ridge, and so arranged that a windward draught can be avoided. The plants are all planted out, and are growing in a deep brick pit in the middle and round the sides of the house. At the bottom of the pit was placed a little over a foot of brick rubbish for drainage, and on this some 2 feet or so of a rich loam, and in this the Roses were planted about May and June last—a line of the stronger growing plants being placed along the centre of the bed to run up the pillars which support the roof; and the dwarf growing varieties are kept as bushes in front on either side. A line of Roses is planted against the sides of the house all round, the plants being trained up rafters to fill the roof; and there is space in front of these for a line of dwarf bushes. All the varieties of Roses planted are either Noisette or Teas. At one end is a fine example of Maréchal Niel. The following varieties are flowering with great freedom:—Mdlle. Cecilie Berthod, Marie Van Houtte, Madame Falcot, Belle Lyonnaise, Madame de St. Joseph, Marie Ducher, Belle Maçonnaisse, Souvenir de la Malmaison, Madame Willermoz, Madame Jules Margottin, and the new Tea Duchess of Edinburgh, Cheshunt hybrid, grows with great freedom, but flowers sparingly. A good dressing of cow-dung was placed on the surface a short time since, to the depth of 3 inches; this appears to have been very beneficial in its action. A vigorous growth pervades all, and there does not appear to be a trace of greenfly. Robustness of growth is certainly not incompatible with freedom of bloom. The house is kept close and warm, and some fire-heat is given at night when the air is cold. This has been necessary for some time since, the temperature falling very low at daybreak. The house is syringed twice a day, and abundant root-waterings are administered at this season of the year. Mr. Richards is enabled to cut a good quantity of flowers daily, and next spring, by which time the plants will have become thoroughly established, a rich harvest of bloom will result. *K. D.*

Clianthus puniceus.—I have known the above plant for many years. I knew it first when it was a stove plant; the Salvia splendens, too, was treated to a warm corner, and I have a lively recollection of the purgatorial punishment I endured, and the constant work I had to try and keep these plants clean, for the red-spider would pay them constant attention, and as the summer advanced was sometimes master of the situation. A few days ago I had the pleasure of visiting the charming and well-managed gardens of J. E. Esdaile, Esq., at Cothelstone House, and there for the first time in my life I saw the Clianthus in its true position and in its true character, planted out-of-doors against a south wall, over 15 feet high and 15 feet through, perfectly healthy and vigorous, and covered with bunches of flowers, many of which are 3 feet in length. At this season of the year I know of no wall plant so magnificent as my old friend Clianthus puniceus. *William Payne, Manager, The Exotic Nursery, Taunton.*

Sea-Gulls in the Garden.—Might not a sea-gull be sometimes a useful addition to a garden, and more especially a kitchen garden, as a means of keeping down slugs? Most of the feathered appliances which are at hand in the poultry yard do more harm than good; the hens send crops and soil alike flying before their scratching operations, the ducks attack the vegetables, and a peacock will follow the line of a row of freshly sown Peas deliberately, till none are left to be protected from other enemies; but a sea-gull prefers animal food if it can get it. All those who have lived near the coast will remember the flocks in which it will settle on some ground in process of being turned up; some of the birds scattered like flakes of foam all over the field, and some following the plough, all too intent on their prey in the newly-made furrows to care much for lookers-on. The birds can be made to eat vegetable food, but their great preference for the slugs and other garden foes to the plants which these prey on is a double security to the kitchen garden crops, and in this capacity a sea-gull who has been tamed by kindness sometimes is a very useful addition. As pets they seem capable of a good deal of attachment, either to their protectors or what they associate with them; and, in the case of a bird whose last illness I had been begged to prescribe for, amongst some entertaining notes of his habits, "Gulliver" is mentioned as trotting punctually at breakfast and dinner time to the lawn before the dining-room window and knowing his name. Bread with milk, scraps of meat, slugs, worms, and an additional mouse were his fare, with an addition of bacon—which possibly may have had something to do with his final illness. The disposition of the gull to drive off other birds as intruders would be another recommendation, and in itself it is a handsome addition to the garden, welcome picturesquely, and a safe pet where there are children. In the instance named the bird had been picked up, maimed, and tamed by the kindness of its owners, but young specimens could be procured from their rock or marsh breeding places, and tamed with certainly; or if some eggs were put under a duck it might save all difficulty. A hen cannot be trusted, and in the only instance in which I have myself tried one with sea-fowls' eggs, she selected them from her own and broke them all. *O.*

Notices of Books.

Botanical Names for English Readers. By Randal H. Alcock. London: L. Reeve & Co., 1876.

Mr. Alcock's aim in writing this little volume is a praiseworthy desire to lessen the difficulty which is felt by those who complain that "the scientific names of plants are so hard to learn;" and he has, therefore, "attempted to explain the scientific names of British plants in a popular manner, so as to be useful to those who have no knowledge of any foreign language." Whether the difficulty complained of is a real one may be doubted; at any rate many of those who profess to be frightened at the Latin names of plants will speak of Geraniums and Fuchsias, Rhododendrons and Azaleas, Delphiniums and Eschscholtzias, as if they were genuine English titles, resembling thus the exemplary gentleman who made the discovery that he had been talking prose all his life without knowing it. In any case, however, Mr. Alcock's little book will be a handy volume of reference for those who are ignorant of both Latin and Greek, and who yet like to know something of the meaning of scientific names, which in the majority of cases find their origin in one or other of these languages. We have tested the volume in several instances, and find it very correct; and the explanations are in many instances rendered the more interesting by the fact that they are not confined to bare derivations, but indicate also the reason why the names were first applied to the plants which bear them. Some of these are not, we fancy, generally known. Soldanella, for instance, is by Pfeiffer referred to the Italian coin "soldo," by reason of its round leaves; and the commemorative names are much more fully treated than is usual in books where derivations are given. The fact that certain names—notably many of those given by Adanson—are devoid of meaning, and were never intended to convey any, has not escaped Mr. Alcock's notice; and he has hence not attempted to find an explanation for them, a course which (as may be noticed under Cicendia) other writers have not always been wise enough to adopt. Other names, and some very common ones, are also wanting in explanation, such as Cichorium (which is of Arabic origin), and Trientalis. As instances of the information which is given under various names we may cite two examples:—

"Claytonia, Linnæus.—Named in honour of John Clayton, one of the earliest American botanists, and a correspondent of Gronovius, to whom he contributed the specimens for the *Flora Virginica*, which are now in the British Museum: he died in 1773."

"Avellana, Pliny.—According to Pliny, from Avellinum in Campania, the district in which it was first produced. The place is now called Avellino, and Hazel-nuts of a particular variety still abound there."

Only about half the volume, however, is devoted to the actual explanation of Latin plant names: the earlier portion being occupied with "a sketch of the history of botany, in reference to botanical nomenclature, up to the time of Linnæus." Although it may be said that this contains little that will be new to those who are acquainted with Pulteney's *Sketches* and other similar works, yet it may fairly be supposed that it will fall into the hands of many to whom the subject may be quite new, and to whom so readable and accurate a sketch will be both useful and interesting. Some of the earlier chapters—such as that on "Arab Physicians," will be acceptable even to a more advanced class of readers; and Mr. Alcock may be congratulated on his treatment of this portion of his subject. It may perhaps be doubted whether the class of persons for whom the book is intended is sufficiently large to create any great demand for it; but there is no doubt that the volume has the advantage of filling a gap which has hitherto been unoccupied, and that the statements contained in it are trustworthy and accurate.

—— The May number of the *Garden Flora*, which has just reached us, contains a coloured plate, t. 864, of Begonia Frobelii, D.C., in *Gardeners' Chronicle*, October, 1874, a hardy Begonia, suitable for bed

ding, but rather dull in colour. Calochortus venustus, β brachysepalus, tab. 865, a very lovely bulbous plant, differing from the type in the shorter sepals. M. Ortgies has an article on the species of Silver Fir, including Picea lasiocarpa, magnifica, bifolia, concolor, &c. Illustrations are given of the scales and seeds of the forms mentioned. Dr. Regel continues his synopsis of Cycadaceæ. Descriptions are also given of three new Agaves found in Southern California and introduced into European gardens by MM. Haage & Schmidt, of Erfurt, viz, Agave Deserti, A. Shawii, and A. Utahensis, all three species described by Dr. Engelmann, the two former in the *Transactions of the Academy of Sciences of St. Louis*, December, 1875; the latter in Mr. Watson's *Botany of the Fortieth Parallel*.

—— In the *Revue Horticole* for April 1 there is a coloured plate of Peach Nain Aubinel. This is described as an excellent variety for pot culture, being of small stature and compact growth. The leaves are very much crowded, and sometimes exceed 8 inches in length; they are very shortly toothed, taper very much towards both ends, and are furnished with prominent reniform glands. The flowers are of medium size, and of a bright rose colour, sometimes showing indications of stripes. Fruit nearly spherical, attaining 2¾ inches, or sometimes more, in diameter, often slightly unequal-sided, with a shallow furrow somewhat depressed at the summit, where there is a small nipple, around which the skin colours red. Skin covered with a very short dense down, pale yellow, more or less tinged with red when ripe, sometimes rather highly coloured where fully exposed to the sun. Cavity of the stalk rather narrow. Flesh firm, free deep yellow, very red around the stone, melting; juice abundant, of a very agreeable flavour. Out-of-doors this variety requires a very warm, sheltered situation, even in Paris; and it is recommended to remove some of the foliage when the fruit has attained nearly full size, in order to facilitate their colouring and perfect ripening. It was raised by M. Aubinel, of Grenade, Upper Garonne, in 1863, and may be called in English Aubinel's Dwarf Peach. It is said to come almost invariably true from seed, and it is spoken very highly of both as an ornamental plant and for its fruit.

—— M. Faillot, in the *Bulletin* of the Horticultural Society of Eure and Loire, recommends the propagation of Strawberries by seed rather than by runners. The plants so obtained are stronger and better. The plan is, however, not to be recommended in the case of forced Strawberries, nor for any other variety than the "Four Seasons," which reproduces itself true from seed.

PUBLICATIONS RECEIVED.—"Bulletin Ampelografico," fasc. iv., Roma, 1876, contains an account of the congress of wine growers at Colmar; descriptions of Vines grown in the province of Ancona; analyses of wines made in the province of Bari, Lecce, &c.—"Nuovo Giornale Botanico Italiano," April, 1876, contains papers on the structure of the leaves of Empetraceæ, by G. Gibelli; on the specific identity of the three forms known as Ruscus hypophyllum, R. hypoglossum, R. microglossus, by Professor Caruel; on the nutrition of cellular plants, by C. Cugini; on dichogamy and homogamy in plants, by F. Delpino; and other papers.—"Gazetta delle Campagne" (Turin).—"The Agricultural Students' Gazette," No. 5, containing some agreeably and, what is more, accurately, written articles on root crops, manures, analyses, &c., by Professors Church, Wrightson, Boulger, and others.—"Monthly Report of the Department of Agriculture," March and April (Washington).—"Journal of the Bath and West of England Society," 1875 (Clowes & Son), containing papers on the water required by plants and animals, the cultivation and training of fruit trees, and other interesting papers, to which we may allude at a future time.—"Food Chart," giving the names, classification, composition, alimentary value, rates of digestibility, adulterations, tests, &c., of the alimentary substances in general use, by R. Locke Johnson (Hardwicke & Bogue).—"The Optical Condition of the Atmosphere," by Professor Tyndall.—Beitraege zur Pelorienkunde," by Edmund Von Freyhold.—"Report on Diseased Leaves of Coffee and other Plants," by Dr. M. C. Cooke.

Reports of Societies.

Royal Aquarium, Westminster: *May 30 and 31*.—It is always more pleasant to record a success than a failure; and to-day we have the agreeable duty of chronicling the results of the competitions at what was admitted on all sides to be a very fine show. It is true that nothing specially wonderful was brought out, but there was a great deal of quality, and the competitions all round were very close. The Orchids were particularly good, but not what we had anticipated as regards numbers. Stove and greenhouse plants were remarkably well represented, so also were new plants, with which Mr. William Bull took the lead; and Heaths and Pelargoniums also came in for a full measure of praise, the latter especially, but we were sorry to see so many of their fine blooms falling off through the great heat. There was also for the season a capital display of fruit. In fine there was plenty of everything, and Mr. Wills' work of marshalling all into order and regularity must have been very heavy, and only rendered tolerable by reason of the knowledge that his taste and judgment would add to the pleasure and interest of the spectators.

ORCHIDS.—It was intended that the great feature of this show should consist of these gorgeous plants, but such was by no means the case, though there really was a finer lot brought together than has been seen for a long time at a metropolitan show. We had anticipated that the handsome prizes of £50, £30, and £20 offered for twenty Orchids would have brought out a really good competition and an interesting display, but—will it be believed?—there were only three competitors. Were the Orchid growers afraid of one another, and kept away for fear of being beaten? or what was the reason that these grand prizes almost went begging? If the response to such liberal invitations is to be so poor in numbers as it was to-day, exhibitors will only have themselves to thank if they do not get such a chance again for some time; and this is much to be regretted, for the cutting down policy that has been carried out pretty generally for some years has brought prizes for almost everything to such low amounts that they are barely worth competing for. The 1st prize was well won in the competition that ensued in the chief class by a remarkably fine lot staged by Mr. T. Hubbersty, gr. to O. O. Wrigley, Esq., Bridge Hall, Bury, Lancashire. Taken all in all such a collection of plants as these has not been seen in the South for a considerable number of years. It consisted of Odontoglossum Phalænopsis, more than 2 feet over, and very well flowered; Saccolabium guttatum giganteum, with five spikes; Cattleya Mendelii, with ten flowers, a nice variety, but not the darkest coloured we have seen; Thunia alba, seven spikes; Masdevallias Lindeni and Veitchii, both large and well-flowered, but the blooms rather small; Lælia purpurata, with fifteen richly-coloured flowers; Aerides Fieldingii, a good piece with five spikes; Calanthe veratrifolia, a massive piece with over thirty spikes; Dendrobium lituiflorum, about 2 feet through, and profusely bloomed; Vanda suavis, four spikes; a good Masdevallia Harryana; Odontoglossum crispum, with seventeen spikes; Anguloa Clowesii, with nearly three dozen flowers; Cypripedium caudatum, eleven flowers; Dendrobium nobile, 3 feet through, a mass of flowers; Cypripedium barbatum giganteum, 3 feet through, and very finely flowered; Aerides Lobbii, three spikes; the singular and rarely seen Anguloa uniflora superba, with two dozen of its soft white-tinted flowers; and a nice pan of Cypripedium niveum. The 2d prize went to Mr. J. Ward, gr. to F. G. Wilkins, Esq., Leyton, who had his fine specimen of Cypripedium Stonei; and good examples of Odontoglossum Phalænopis, Dendrobium thyrsiflorum, Odontoglossum hystrix, Dendrobium Dayanum, D. Devonianum, Phalænopsis grandiflora, Oncidium ampliatum, Dendrobium M'Carthiæ, and Odontoglossum Pescatorei. The 3d prize went to Mr. J. Douglas, gr. to F. Whitbourn, Esq., Loxford Hall, Ilford, whose plants were small, but very neat and fresh, the best specimens being of Cattleya Warneri, with ten lovely-coloured flowers; Cypripedium spectabile, Dendrobium Bensonæ, Masdevallia Harryana, and Cattleya Mossiæ superba. In the amateur class for six, Mr. J. Ward was more successful, occupying his old place in the front, and showing amongst others Odontoglossum vexillarium with twenty-three flowers; a very good Dendrobium nobile and Odontoglossum Bluntei with nine spikes. Mr. T. Hubbersty came in 2d with an excellent group; and Mr. F. Rutland, gr. to the Duke of Richmond and Gordon, Goodwood, 3d. The last-named exhibitor threw all his strength into the open class for eight, in which he came in 1st, staging Cattleya Mossiæ, with seventeen flowers; Oncidium sphacelatum, about 4 feet through and well flowered; Vanda suavis, six spikes; Cypripedium barbatum, &c. Mr. B. S. Williams was a very close 2d with good specimens of Cattleya Mossiæ, Cypripedium barbatum superbum, C. biflorum, Vanda tricolor insignis, and Oncidium phymatochilum, &c. Mr. J. Child, gr. to Mr. Torr, Garbrand Hall, Ewell, was 3d. In the nurserymen's class for twelve, Mr. Williams held his own, coming in 1st well with a fine lot; Mr. William Bull, with a small, fresh, and very nice lot taking 2d honours; and Messrs. J. Jackson & Son, 3d.

STOVE AND GREENHOUSE PLANTS.—These indispensable subjects made an admirable display, the contest in all the classes being particularly good, and in many instances very close. The sum of £25 offered as a 1st prize for twelve was won by Mr. Chapman, gr. to J. Spode, Esq., of Hawkesyard Park, Rugeley; the 2d prize of £15 being awarded to Mr. Ward, gr. to F. G. Wilkins, Esq., Leyton; and the 3d of £10 to Mr. E. Tudgey, gr. to J. H. G. Williams, Esq., Henwick Grange, Worcester. Mr. Chapman's plants made a very fine group, and included the large and very admirable specimen of Chorozema Chandleri, shown at Regent's Park last week; a large and well-flowered bush of Ixora coccinea; Erica eximia superba, about 4 feet over, and well-bloomed; Pimelea spectabilis, large and good; Aphelexis macrantha rosea, large, well-flowered, and very bright; and an abundantly flowered Clerodendron Balfourianum. The difference between the above collection and Mr. Ward's in favour of the former was very slight, the last-named exhibitor showing amongst others his well-known specimens of Darwinia tulipifera, Statice profusa, Erica affinis, Clerodendron Balfourianum, Anthurium Scherzerianum, and a plant of the comparatively new Ixora Williamsii, about 4 feet high and as much through, superbly flowered. In Mr. E. Tudgey's capital group the most conspicuous objects were a fine mass of Anthurium Scherzerianum and good-sized, effective specimens of Phœnocoma prolifera Barneslii, Ixora Williamsii, Stephanotis floribunda, Darwinia tulipifera, &c. The amateur's class for six brought out a set of smaller plants, very fresh and generally well-flowered; but in this, as well as in the other classes, with a painful sameness in the names. The 1st prize went to Mr. J. Child, gr. to Mrs. Torr, Garbrand Hall, Ewell; the 2d to Mr. S. Barrett, and the 3d to Mr. W. Chapman. The nurserymen's class for eight brought Messrs. Lucombe, Pince & Co., Exeter, to the front with some very large specimens of the usual varieties; followed by Messrs. Jackson & Son, Kingston, and Mr. B. S. Williams, Holloway, who each contributed excellent groups. Fine-foliaged plants were well shown, and included a little more variety than was the case with the flowering plants. The collections of twenty in 12-inch pots contributed by Mr. Bull and Mr. Williams, who were respectively 1st and 2d, were remarkably attractive; and the same exhibitors occupied the same relative position in a nurserymen's class for nine in pots not more than 12, nor less than 10 inches in diameter. In the corresponding class for amateurs, that very successful grower, Mr. Legg, gr. to S. Ralli, Esq., Clapham Park, came in a good 1st.

FERNS.—These contributed much to the success of the show, and especially the British varieties, which were brought out in unusual numbers. The larger specimens of Tree Ferns were used for the centres of the large groups, and answered the purpose most admirably. The most liberal and successful exhibitors were Mr. Bull and Mr. Williams, who sent some of their finest specimens. Mr. Hubbersty, gr. to O. O. Wrigley, Esq., had the six best Adiantums, large and well-grown plants; and the other prize winners were Mr. Smith, gr. to A. Cooper, Esq., Twickenham, and Mr. Shaen, gr. to E. Brooke, Esq., Caen Wood House, Highgate. Mr. B. S. Williams had the best half-dozen Filmy Ferns, Messrs. W. Rollisson & Son coming in 2d. The finest lots in a good class of twelve hardy Ferns came from Messrs. Jackson & Son, Kingston, and Messrs. Ivery & Sons, Dorking.

AZALEAS AND HEATHS.—There was a good show as regards numbers of both of these, but the Heaths were by far the best in quality. It is rather late for Azaleas, and consequently but little need be said about them. Messrs. Jackson & Son, Mr. Turner, and Messrs. Ivery & Sons were the leading exhibitors amongst nurserymen; and Mr. Child, gr. to Mrs. Torr, and Mr. Ratty, gr. to R. Thornton, Esq., amongst amateurs. Both trade and amateur classes for Heaths were well contested, and the plants generally were very good. In the open class for eight the leading prizes went to Messrs. Jackson & Son and Mr. Carmichael, gr. to H. W. Tugwell, Esq., Crowe Hall, Bath. Mr. J. Ward had the best six amongst amateurs, the other awards being made to Mr. Hinnell and Mr. Tudgey. Mr. Ward was also 1st in another class for six, with Mr. Legg 2d.

Show and fancy PELARGONIUMS were admirably shown by Mr. Ward, Mr. Turner, Mr. James, and Messrs. Dobson & Sons, who each had specimens quite up to their usual high standard. Gold and silver Tricolor Pelargoniums were contributed in considerable numbers, and so also were varieties of the Bronze or Bicolor section. The best eight Tricolors were contributed by Mr. H. Coppin, Croydon, and Mr. Meadsmore, of Romford, had the best twelve

Bicolors. In the amateurs' classes Mr. J. Lover, gr. to J. Roberts, Esq., Shirley Cottage, Croydon, and Mr. North, gr. to F. Hill, Esq., Brentwood, were the most successful. Pot Roses are getting past their best, consequently of the competition that ensued between those worthy foemen, Messrs. Paul & Son and Mr. Turner, nothing need be said except that equal 1st prizes were awarded. The best hardy herbaceous plants were contributed by Mr. Parker, Messrs. Rollisson & Son, and Mr. Roberts, gr. to W. Terry, Esq., and the finest collection of Amaryllis from Mr. Goddard, gr. to H. Little, Esq., Twickenham. Gloxinias were fairly well shown by Mr. Kinghorn, Sheen Nursery, Richmond, and Mr. Battram, gr., Tonge House, Lower Norwood.

NEW PLANTS.—Several classes for new plants were included in the schedule, and some very interesting novelties exhibited. The 1st prize for twelve new plants (Orchids excluded), in or out of commerce, was won by Mr. Bull, who staged the only plant in England of the handsome Pritchardia grandis, Cyathea Burkei, Artocarpus Cannoni, Dracæna Goldieana, Blandfordia princeps (p. 691) (in flower), Pandanus princeps, Croton trilobus Disraeli, C. spinalis, Bertolonia superbissima, &c. Mr. B. S. Williams was 2d, with Gleichenia rupestris glaucescens, Kentia Moorеana, Cycas intermedia, Dieffenbachia Parlatorei marmorata, Aralia Veitchii gracillima, Zamia Lindeni, Croton Andreanus (a form with oblanceolate leaves, the veins being picked out with orange-red on a dark green ground), and C. Disraeli, &c. Mr. Bull and Mr. Williams were also 1st and 2d, in the same order, with six new plants (Orchids excluded) not in commerce, the first-named showing Dieffenbachia triumphans, with broadly lanceolate green leaves, with scattered greenish-yellow blotches; Croton formosus, said to be a cross between C. Veitchii and C. Weismanni, with linear lanceolate leaves, spotted with orange; Aralia splendidissima, a fine foliaged plant with very dark green pinnate leaves, the leaflets themselves being irregularly cut, and each traversed by a pink midrib; Dracæna Goldieana, Croton trilobus and Sadleria cyathoides, a newly introduced Fern. Mr. Williams' six consisted of Araucaria Goldieana, Cycas intermedia, Woodwardia radicans cristata, Platycerium Willinckii and Sarracenia Williamsii. For three plants not in commerce Mr. Bull was again 1st, with Dracæna Goldieana, Astrocaryum murumuru, a very handsome pinnate-leaved Palm, with white fluffy down on the under surface, and thickly studded with prickles; and Dieffenbachia Carderi; and Mr. Williams 2d, with Cycas intermedia, Woodwardia radicans cristata and Astrocaryum murumuru. The same exhibitors also occupied similar positions in the class for six plants never before exhibited in Europe, Mr. Bull showing Smilax Shuttleworthii, a climbing plant, with coarse, dark green, cordate, ovate, blotched leaves; Gymnogramma Chelsoni; a new and unnamed Croton; Maranta inscripta, something in the way of M. Makoyana, with stripes of green alternately long and short, the shorter ones sharply pointed. Under the name Gunnera granatensis was an Anthurium-like plant, with large dark green cordate ovate peltate leaves, the stalks of which were studded with small prickles—the plant is probably an Aroid, far removed from Gunnera; and Dieffenbachia majestica, with green broadly lanceolate leaves speckled with yellow spots. Mr. Williams had Panax laciniatus, with dark green foliage, very deeply cut, so as to resemble the cut-leaved Elder; Phajus fimbriatus, a white-flowered species, with the lip fringed and marked with fine lilac stripes; Jambosa acida, a stove shrub, with closely set bold oblong lanceolate leaves, placed on short violet-coloured leaf-stalks; Croton Queen Victoria, C. Williamsii, a broad-leaved form, with leaves green, margined and blotched with milky white; and Ficus ovalifolium marmoratum. In the corresponding class for three Mr. Bull was again 1st, with Martinezia Roezlii, a pinnate-leaved Palm, with broad, curiously shaped rhomboid divisions; Bomarea Carderi, a very beautiful twining plant allied to Alstrœmeria, with drooping racemes of long pink flowers, the segments of which are marked with dark spots; and Dieffenbachia princeps, a form with lanceolate acuminate leaves, traversed by a white blotch along the midrib. Mr. Williams was 2d with Croton Williamsii, Adiantum Williamsii, and Ixora multiflora, a fine rosy orange-flowered form. Messrs. J. and R. Thynne, Great Western Road, Glasgow, were 3d with, amongst others, a plant shown under the name of Hechtia sp., with tufted habit and numerous long linear leaves of stout substance, reddish bronze colour, and provided at the margins with stout recurved teeth; one of the best new plants shown. Mr. J. H. Ley exhibited Pteris serrulata Leii, a curiously depauperate form of the common variety; Lomaria gibba cornuta, another curious variety, in which the pinnæ ran out into long, slender, needle-like points; and Zamia duplicata, a pinnate-leaved species with narrow segments, some horizontal, others projecting more or less vertically. Mr. Ley also showed in the class for three plants not in commerce, Calamus metallicus, Lomaria cristata, and Pteris serrulata Leii. Amongst several new plants shown by Messrs. Rollisson & Son Goodyera velutina, with ovate dark green leaves bordered with yellow; and a new Tree Fern from New Caledonia, named Dicksonia Delplanchei; and Mr. Ley had, amongst others, Plectocomia icthyospinus, a handsome pinnate-leaved Palm, glaucous on the under-surface, and with the leaf-stalks armed with spines; Cordyline lutescens, a plant with long, strap-shaped, recurved leaves of a yellow colour. The most noticeable plants in a group from Mr. Tudgey were Clerodendron Rolli-soni and Anthurium album. Under the name of Cattleya Bluntei, Messrs. Hugh Low & Co., Clapton, exhibited a new and very fine pure white variety, somewhat resembling C. Mendelii in form, and having a beautifully fringed lip.

FRUIT.—Considering the backwardness of the season, the show of fruit was all that could be desired, if we except perhaps the Pines, which were thin in numbers and small in size. Black Grapes were especially well represented, the colour and bloom being much better than could have been anticipated this sunless season. Ten fruits were shown in each of the classes for green and scarlet fleshed Melons; and of the former the best three in the order named were Victory of Bath, from Mr. Coleman, gr. to Earl Somers, Eastnor Castle, Ledbury; Golden Queen, from Mr. G. Holliday, gr. to J. Norris, Esq., Castle Hill, Bletchingly; and Heckfield Hybrid, from Mr. J. Atkins, Lockinge Gardens, Wantage. Read's Scarlet-fleshed was the best in its class, and its exhibitor was Mr. C. Howe, Benham Park Gardens, Newbury. An unnamed fruit, shown by Mr. E. Tudgey, was 2d. Ten dishes of Black Hamburgh Grapes appeared in competition, and the best was adjudged to be an excellent sample from Mr. J. Akehurst, gr. to S. Copestake, Esq., The Grove, Kentish Town. The next best, nice symmetrical bunches, wanting only in bloom, came from Mr. Bannerman, gr. to Lord Bagot, Blithfield, Rugeley; and the 3d, from Mr. P. Elwards, Fowley Gardens, Liphook, Hants. Highly Commended in the same class were good dishes from Mr. Bones, gr. to D. McIntosh, Esq., Havering Park, Essex; and Mr. Davis, gr. to G. Porter, Esq., Roehampton Park. The best examples of Black Prince were contributed by Mr. G. Holliday and Mr. J. Bolton, gr. to W. Spottiswoode, Esq., Coombe Bank, Sevenoaks; and the 1st prize in the class for any other black variety went to Mr. G. Grimmett, gr. to J. Wilmott, Esq., Pine House, Isleworth, who had a beautiful sample of Madresfield Court; Mr. Bannerman was 2d with Muscat Hamburgh. There were also nine or ten competitors in the class for Muscat of Alexandria, but the whole of the samples staged were quite green; and it is a pity that the class was inserted in the schedule, Muscats being very seldom perfectly finished so early in the season. It is useless to note the merits of green Grapes, so that we need only say that the prizes went, in the order named, to Mr. Douglas, gr. to F. Whitbourn, Esq., Loxford Hall, Ilford; Mr. G. Grimmett, and Mr. W. Bates, gr. to W. H. Punchard, Esq., Paulett Lodge, Twickenham. Excellent examples of the Grizzly Frontignan came from Mr. J. Hepper, and Mr. Bannerman; Mr. J. Douglas contributed the finest Buckland Sweetwater, followed by Mr. G. Parkhouse, gr. to T. Holman, Esq., Hawkhurst; and Mr. A. Phillips, gr. to A. Moss, Esq., The Mills, Chadwell Heath. Mr. Douglas was also 1st in the class for any other white Grape, with nice bunches of the Canon Hall Muscat; Mr. Bannerman and Mr. Gilbert, gr. to the Marquis of Exeter, Burghley, being respectively 2d and 3d with very good Foster's Seedling. The only dish of Figs staged was a very fine one of Brown Turkey, from Mr. Coleman, Eastnor; and of black and white Cherries, Mr. Miles, gr. to Lord Carington, Wycombe Abbey, was the only exhibitor—his fine samples of Elton and Black Circassian well deserving the 1st prizes awarded. The Strawberries generally were very good, and in the class for varieties of the Sir J. Paxton and Sir C. Napier type, Mr. C. Raffill, Tredegar Park Gardens, Monmouth, was 1st with Black Bess, and Mr. Douglas 2d with President. In the corresponding class for varieties of the British Queen or Dr. Hogg type, excellently coloured and large fruits of the British Queen from Mr. Douglas, and Mr. Earley, gr. to Dr. C. M. Ingleby, Valentines, were the respective prize winners. Amongst the miscellaneous subjects we noted a handsome dish of Tomatos from Mr. Miles, a good brace of Daniels' Duke of Edinburgh Cucumber from Mr. Gilbert, and collections of Apples from Mr. Earley and Mr. Gardner, gr. to E. P. Shirley, Esq., Eatington Park.

Tiverton Horticultural: *May* 24.—The County of Devon Agricultural Association having decided to hold its annual exhibition at Tiverton, a special horticultural show was held in connection with it, and a series of handsome prizes open to all were arranged. The two leading prizes were for eighteen stove and greenhouse plants and eighteen foliage plants, silver cups of £20 value being offered in each case as 1st prizes, in the 2d prizes of £5. These did not appear to be sufficient in value to induce any one to enter the lists against Messrs. Lucombe, Pince & Co., of Exeter, who became the winners of the cups. In the former class they set up some remarkably fine plants with a few of less merit, which would have materially detracted from their value had there been a close competition. The following were most successful examples of cultivation:—Aphelexis macrantha rosea, that fine form of it known as Chilman's variety; A. macrantha purpurea, Clerodendron Balfourianum, Ixora Williamsii, I. Colei, I. amabilis, and I. Prince of Wales; Bougainvillea glabra, Erica tricolor Wilsoni, very fine, Allamanda grandiflora, &c. Their foliage plants included a magnificent example of Latania borbonica, Thrinax elegans, Cycas circinalis, Pritchardia pacifica, Dicksonia antarctica, Croton undulatus, finely coloured; C. variegatus, a fine example; C. pictus, C. Weismanni, Dieffenbachia Bausei, Pandanus Veitchii, and Phormium tenax variegata. The same firm won the silver cup of £15 value for twelve Azaleas, having a few very large plants and some small in size but generally well grown, and carrying excellent quality of flower. The best examples were Magnificent, Trotteriana, Criterion, Cedo Nulli variegata Barclayana, Alexander, Sir C. Napier, Comte de Hainault, and Madame Thibaut, a fine high-coloured variety. They were the only exhibitors of six Ericas, having a remarkable example of E. Lindleyana, and small plants of vestita rosea, eximia superba, obbata, depressa, and affinis, Mr. C. Turner, Slough, sent down twelve beautiful examples of Roses in pots, of good size and in superb condition, which proved a very pleasant surprise for the Tivertonians. These were awarded the silver cup of £10. The special prizes for twelve cut Roses also fell to Mr. Turner. The best group of plants came from Mr. James, gr. to Sir J. W. Walrond, Bart., F. Parkins, Esq., being 2d. Other flowering plants consisted of Azaleas, Cinerarias, Calceolarias, Pelargoniums, &c., but they were not of a character to call for special remark. F. Parkins, Esq., had the best group of nine foliaged plants, the best being Croton pictus, Latania borbonica, Dicksonia antarctica, Croton variegatus, and Maranta zebrina. A large tent was completely filled with a collection of plants furnished by Mr. T. Veitch, nurseryman, Exeter, consisting of Ferns, Palms, &c., all of which were excellently arranged, and formed a valuable feature of the show. In the fruit classes the leading feature was a good Smooth Cayenne Pine from Mr. Wilson, gr. to Earl Fortescue, and who was awarded an extra prize for four other good fruits. The best three bunches of Black Hamburgh Grapes came from Mr. Powell, gr. to Earl Devon. Mr. Wilson had a nice dish of Stirling Castle Peaches, and there were some good Strawberries and well preserved Apples. The show of vegetables was most praiseworthy, the season considered; they were abundant, and of excellent quality, with a very few exceptions. Mr. James had the best collection, Mr. Powell and Mr. Chard being placed equal 2d. Collections of salads were well done also, Mr. Powell being the best, Mr. James coming in 2d. (*From a Correspondent.*)

Law Notes.

IMPORTANT ACTION TO AGRICULTURISTS.—In the Common Pleas division of the High Court of Justice, the case of *Horschitz and Others* v. *Clarke* was heard on Thursday before Mr. Justice Lindley and a common jury, sitting at Guildhall. The action was brought to recover the price of Trifolium seed which had been sold to the defendant, who alleged that the seed had no germinating power, and, therefore, relieved him from the settlement of the account.

Mr. Talford Salter, Q.C., and Mr. Glyn appeared for the plaintiffs, and Mr. Lumley Smith represented the defendant.

Mr. Talfourd Salter in opening the case on behalf of the plaintiffs explained that the action had been brought by Messrs. Horschitz & Co., seed merchants, of Mark Lane, against the defendant, Mr. W. G. Clarke, nurseryman and seedsman, carrying on business at Wellington, in Somersetshire, to recover the sum of £21 18*s.* 6*d.* which was the balance due to the plaintiff for three parcels of Trifolium seed sold to the defendant in September last. The defendant had pleaded that the seed had proved worthless, and had on that ground refused to settle the account. The plaintiffs, however, urged in reply that they had sold by sample, on which terms the defendant had bought. The defendant had also an opportunity of testing the seed, and having accepted the seed he was not entitled to refuse payment to the plaintiffs. It was contended on the other side that the defendant had the right to reject the seed after he had received the

sample and the seed in bulk; that the defendant had the power of testing the quality and germinating property of the seed, and had not done so; and, having had the opportunity and failed to take advantage of it, the defendant could not afterwards raise an objection against the seed in reference to the payment of the account. He would ask the gentlemen of the jury to decide against the defendant on the ground which was the only point of defence, as he would conclusively prove to them that it was not the custom of the trade for the seed merchants to warrant the germinating power of the seed.

William Neustetel, seed merchant, of 60, Mark Lane, in answer to Mr. Salter, said he did business with the defendant last year. Some correspondence referred to had taken place between his firm and the defendant, and, in reply to instructions received from the defendant, he sent samples and prices from time to time. On August 25 the defendant wrote to the effect that, owing to the high price of Trifolium, he had been unable to do any business, as the farmers in his district were waiting for and anticipating a decline. On August 27 he sent samples of Trifolium, and proposed some French seed, for which he would be glad of an order. On August 31 an order was received for an immediate despatch of Trifolium, and, in reply to this and other orders, Trifolium seed to the value of £8 2s. was despatched on September 11 last, of £4 1s. on September 18, and of £9 15s. 6d. on September 28. On September 27 he received a letter from the defendant, complaining of the seed supplied. There was a custom of the London merchants not to guarantee their seed—he was not speaking of nurserymen.

In answer to Mr. Lumley Smith the witness stated that he never tested the seed before he sold it. He remembered the letter of July 31, 1875, from Mr. Clarke to the plaintiffs, which was to the effect that he would be glad of sample and price of Trifolium, new and yearling. Yearling would mean seed of the growth of 1874, and new would refer to seed of 1875 At that time there would scarcely be seed of 1875, but new would refer to it at that time. Seed of 1874 ought to be a proper germinating seed in 1875. The good seed was not constituted of the seed in itself alone, it depended on many circumstances. Seed of 1874 would not in the ordinary course of business be sold in 1875. He did not test the seed which he supplied to the defendant, and never had done so to any one. His custom extended to London and also provincial dealers. The custom was in all cases to sell by sample only. Mere inspection of the sample would not enable one to judge with any certainty as to whether it had germinating power. He himself knew nothing about germinating power, it was never spoken about in the trade. That custom applied to all first and second class seed merchants. The defendant was a second-class seed merchant, as he bought from seed merchants to sell to growers. He himself was a first-class seed merchant, because he sold to others to sell again. The custom he referred to applied to all seed merchants of the same class as himself, but not to nurserymen. He had heard of the practice of sulphuring seed, to make it appear like new seed. The Act which had been passed imposed penalties on persons who doctored the seed. He was himself exposed to buying doctored seed in the market. The object of the doctoring was, not to make the seed good and new, but in order to improve it in appearance. He had never doctored seed himself. On September 27 the defendant wrote to him to the effect that he was extremely sorry to have to write to him to say that he had received many complaints about the lots numbered 910 not growing. He put in a sample himself, and, to his dismay, they germinated badly. One farmer had been obliged to plough up the field in which he had sown the Trifolium. He replied to that letter to the effect that he regretted to hear that the defendant was not satisfied with the Trifolium, as he did not guarantee the growth. The seed, however, was sent by sample, and no remedy could therefore be given to him.

In answer to Mr. Talford Salter, the witness stated that he had paid his own sellers, and had no remedy against them.

The learned Judge ruled that the last part of the answer was not evidence.

Re-examination continued:—The seed would not germinate if there was too much or too little rain—if the ground was too wet or too dry. It depended a great deal upon the ground and the weather. Seed might not germinate well if it was new seed which had been harvested in wet weather in September, and if it was put into the ground in that state. If it was put into the ground after it had become dry it might germinate. The softness of the seed in that condition would be apparent to the eye.

In answer to the learned Judge, the witness stated that there was a specific meaning in the trade to "fine" Trifolium seed. It meant that the seed was a little brighter in colour and appearance.

Henry Cutter, in answer to Mr. Salter, said that he was a seed merchant and factor, carrying on business at the London corn market. He had been upwards of thirty years in the business, and dealt largely in Trifolium seed. There was a custom in the trade amongst seed merchants in London not to give any guarantee. They had words to that effect upon their notes. When selling to seedsmen in London and the country he certainly would not guarantee the germinating power of the seed. It was his universal practice. The term "fine" as applied to Trifolium seed, implied no guarantee whatever. Some merchants called their seed "fine," others "super," and various names of that kind, but all at their own discretion. They implied no guarantee, classification, or quality.

In answer to Mr. Lumley Smith, the witness said he put the statement that he did not guarantee the seed on the notes, in order that everybody who dealt with him should understand his custom. It was the custom of the market not to guarantee the germinating quality of the seed.

George Anson Wheeler, in answer to Mr. Glyn, said he was principal of the firm of John Wheeler & Sons, in Mark Lane. There was a custom in the market to guarantee seed equal to sample, but not as to growth. There was no warranty implied by the sample. "Fine" Trifolium had no particular meaning in the trade.

Thomas Thornton, a London seed merchant, said there was no custom to guarantee the growth of seed sold. There was a practice of doctoring seed, which was very much applied to Trifolium. New seed would not be sulphured.

John Thompson Burnell gave similar evidence.

Mr. Lumley Smith, in opening the case on behalf of the defendant, explained to the gentlemen of the jury that his client was in the habit of retailing seed which he had bought to customers. In the course of business the defendant had bought seed on the occasions referred to from the plaintiff, and had again sold it to farmers in the neighbourhood. It had been found, however, that the seed, so far from being a live germinating seed, was without any such germinating power at all. Mr. Clarke had been called upon to pay for the seed, which he would ask them to decide should not be enforced; and besides giving a verdict against the plaintiffs, he would also ask them to say that Messrs. Horschitz should be directed to give the defendant such damages in respect of loss which he had sustained by the transaction, and also for compensation to those gentlemen who had made claims upon him. He had not and would not imply that Messrs. Horschitz had knowingly supplied bad germinating seed to the defendant, but when they had decided the questions of facts, which he submitted were in favour of the defendant, the learned Judge would consider the question as to how far the defendant under the circumstances was entitled to have a germinating Trifolium seed, or whether, because the defendant had bought by sample, his remedy was gone.

The learned Judge stated that his difficulty in the matter was as to how far the defendant had a free right of action. He took an unfavourable view of the question of law in regard to the defendant's case.

Mr. Talford Salter proposed that a formal verdict should be entered, and the case referred to the full Court.

Mr. Lumley Smith proposed that a nominal verdict should be entered for the defendant for £100.

Mr. Talford Salter opposed that course, saying that he was quite willing for the case to be referred for the opinion of the Court. He could not, however, consent to £100 being placed on the record.

The learned Judge said that he could not see that a verdict could be entered for the defendant, as he would have to tell the jury himself that there was no warranty, and that the bulk agreed with the sample, and, of course, that would be an end to the case.

Mr. Lumley Smith suggested that of course the legal point would be a matter for further discussion; he thought, however, that an agreement could be made as to the amount in which the verdict would be entered.

The learned Judge proposed that, if the Court considered he had taken an erroneous view of the law, the case might be referred to the Master for the damages to be assessed.

Mr. Lumley Smith thereupon suggested that it would be advisable to have the facts of the case upon the record.

Mr. G. Clarke, the defendant, stated that he was a nurseryman residing at Wellington in Somersetshire. He purchased from Messrs. Horschitz some of the Trifolium seed referred to, of which he sold a portion to Mr. Talbot and a portion to Mr. Corner.

In cross-examination the witness stated that he did not guarantee the seed to farmers when he sold it. It was not his practice to do so, and it was not the practice of the trade. It was, however, the practice in the London market to test the seed, and therefore he was not accustomed to do so. He tested the seed of which he complained, but not until after he had sold some of it. He would have done so if he had had time, but the farmer took the seed directly it arrived at the railway station. It was tested by putting the seed in pots. The seed in respect of which the action had been brought swelled, but would not germinate. If the seed was good, with the largest amount of heat that could be brought to bear upon it under glass it ought to come up in three days. If he were to use the best appliances in his power, he knew that it would not germinate in less than three days. All the seed was the same; of the lots he tested none of it came up at all.

During re-examination the witness stated that he had never been a London seed factor on his own account. He was in the employment of a seed merchant, and during that time bought seed from merchants in London. There was a custom in the London trade to guarantee the growth to the customers of the purchaser.

Mr. Talford Salter, in reference to the evidence which had been given by defendant as to the custom of the London market to test and guarantee the seed, asked him in whose employment he was when he bought from London merchants. The defendant replied that he was in the employment of Messrs. Rollisson & Sons, of Tooting, who were very celebrated nurserymen. They were famous for Tree Ferns, and took prizes at all the shows. They were seed merchants as well, but he did not learn his experience there; he had been in plenty of large country houses.

The learned Judge told Mr. Lumley Smith that if he wished to prove the custom, he must do so by somebody who knew more about the business referred to than the defendant.

Richard Corner said he was a farmer living near Taunton. He was well acquainted with Trifolium. It was particularly quick-growing. He bought six bushels of Trifolium from the defendant, which he sowed in a field of 7 acres. The ground was properly drilled; he never drilled a better piece of land. The seed was well sown. The Trifolium ought to have germinated, or to have appeared above ground in a week or ten days. It never came up at all—not a single one.

Mr. Talford Salter said he was perfectly satisfied with the evidence as against his client in regard to the germinating power of the seed.

Bernard Dyer, F.C.S., Member of the Society of Public Analysts, of 32, Burghley Road, Highgate Road, London, stated that he had received some samples of Trifolium from Mr. Clarke to analyse. One was Trifolium 910, out of parcel kept in shop; another 910, out of sack; and a third called 197. The result of his examination was, that each of the three samples had been submitted to the process of doctoring known as sulphuring. The process consisted of exposing the seed to the fumes of burning sulphur, which had the effect of bleaching the seed in the same way that straw was bleached for making straw hats. The consequence was to give to all damaged or old seed a fresh new colour. He supposed that it was not new seed because it had been doctored.

The learned Judge ruled the last answer was inadmissible as being an inference, and not a deduction from a test.

In cross-examination the witness stated that he found sulphurous acid in large quantities in the seed he analysed.

In answer to one of the jurymen he stated that the

seed, although doctored, would have no smell, because after exposure to moist air the sulphurous acid would lose its volatile powers, and would, therefore, have no smell.

In answer to Mr. Talford Salter, who remarked upon the youthful appearance of the witness, he stated that he had been engaged on his own account as an analyst for six months. He had been for three years in the laboratory of the celebrated Dr. Voelcker. He commenced his training as an analyst five years ago. He would not be able to test whether the seed had been doctored by tasting.

The learned counsel, having put some in his mouth and remarked that he could detect the taste of sulphur, handed some to the witness, and repeated the question.

The witness put some in his mouth, but said he failed to taste it, and remarked that only a man of great experience would be able to do so.

The learned Judge then turning to the jury stated that the case before them was a cross action, in which it appeared that the goods sold had been doctored. Neither the plaintiffs or defendants doctored the seed, and, therefore, it was a question as to which innocent person should suffer. He understood that if the merchant or factor bought seed in the market by sample all that the seller undertook was that the bulk should correspond with the sample. There was not, however, any question of the kind, as it was admitted that the bulk agreed with the sample. If it had not been Trifolium seed, but only some brown seed more or less like it, then there would have been no contract. It must be according to sample, but that was not the case on the present occasion, as Trifolium had been supplied in bulk. There was, however, a further question of warranty to the effect that the seed shall be warranted to grow. It had been held in regard to manufacturers that they must warrant their goods, but in the present case it was different, because the seller had not manufactured the article, and, therefore, there was no warranty. The defendant's case, therefore, fell, and he would ask them to return a verdict for the plaintiff on his claim, and then he could give the defendant an opportunity to have the matter put right.

The verdict was returned accordingly, and judgment given for the plaintiff, execution being stayed until after the first week in the next sitting.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, MAY 31, 1876.

MONTH AND DAY.	BAROMETER.		TEMPERATURE OF THE AIR.					HYGROMETRICAL DEDUCTIONS FROM GLAISHER'S TABLES 5TH EDITION.		WIND.	RAINFALL.
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	
	In.	In.	°	°	°	°	°	°	°		In.
May 25	29.62	−0.14	54.7	43.4	11.3	46.8	− 8.2	43.0	87	NNE: N	0.68
26	29.61	−0.15	52.1	42.0	10.1	45.8	− 9.4	44.1	96	WSW: W.	0.10
27	29.77	0.00	60.7	48.4	12.3	52.0	− 3.4	50.0	93	WNW: W.	0.02
28	30.00	+0.23	64.2	48.7	15.5	55.4	− 0.2	48.7	79	WNW: S.W.	0.00
29	30.01	+0.23	70.0	47.9	22.1	57.2	+ 1.4	48.0	71	W.	0.00
30	29.90	+ 0.11	73.4	45.4	28.0	57.6	+ 1.6	49.8	72	WSW: W.: WNW	0.00
31	29.95	+ 0.16	65.1	48.9	16.2	55.6	− 0.7	47.4	74	NW.: NNW	0.00
Mean	29.84	+0.06	62.9	46.4	16.5	52.9	− 2.7	47.3	82	W.	sum 0.20

May 25.—A cloudy day, with occasional showers in morning and evening. Cold.
— 26.—A dull cold day. Rain fell till 5 P.M.
— 27.—A dull cloudy day. Slight rain fell in early morning.
— 28.—A fine day, cloudy and gloomy in morning.
— 29.—A very fine warmer day. Clear.
— 30.—Very fine, warm and cloudless.
— 31.—A fine day, though very cloudy at times.

—— During the week ending Saturday, May 27, in the vicinity of London the reading of the barometer at the level of the sea decreased from 30.18 inches at the beginning of the week to 29.74 inches by the evening of the 22d, increased to 29.79 inches by the morning of the 23d, decreased to 29.68 inches by the afternoon of the 24th, increased to 29.86 inches by the evening of the 25th, decreased to 29.79 inches by the afternoon of the 26th, and increased to 30.06 inches by the end of the week. The mean reading for the week at sea level was 29.85 inches, being 0.34 inch lower than that of the preceding week, and 0.10 inch below the average.

The highest temperatures of the air observed by day ranged from 69½° on the 21st to 52° on the 26th; the mean value for the week was 59½°. The lowest temperatures of the air observed by night varied from 42° on the 26th to 48½° on the 27th; the mean for the week being 44½°. The mean daily range of temperature in the week was 15°, the greatest range in the day being 26° on the 21st, and the least, 10°, on the 26th. The mean daily temperatures of the air and the departures from their respective averages were as follows:—21st, 54°.8, + 0°.9; 22d, 51°.4, —2°.7; 23d, 52°.6, — 1°.7; 24th, 47°.5, — 7°.1; 25th, 46° 8, — 8°.2; 26th, 45°.8, —9°.4; 27th, 52°, —3°.4.

The mean temperature of the air for the week was 50°.1, being 4°.5 below the average of observations extending over a period of sixty years. The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 110° and 98½° on the 21st and 22d; on the 24th it did not rise above 60°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 31° on the 21st, and 37½° on the 26th. The mean value for the week was 38¼°.

The direction of the wind was S.W. and N.W., and gentle in motion. The weather during the week was dull, cold, and cloudy, with frequent rain. Rain fell on six days during the week. The amount collected was 1¼ inch.

In England the highest temperatures of the air observed by day were 73½° at Nottingham, and 73½° at Wolverhampton; at Sunderland 61° was the highest temperature in the week; the mean from all stations was 68°. The lowest temperature of the air was 34¾° at Cambridge, at Liverpool and Sunderland 43° were the lowest temperatures; the mean value from all stations was 40°. The range of temperature in the week was the greatest at Cambridge, 37½°, and the least at Sunderland, 18°; the mean range of temperature from all stations was 28°. The mean of the seven high day temperatures was the highest at Nottingham, 63½°; and the lowest at Liverpool and Newcastle-on-Tyne, 55¾°; the general mean from all stations was 59°. The mean of the seven low night temperatures was the lowest at Newcastle-on-Tyne, 40¼°; and the highest at Plymouth, 48°; the mean value from all stations was 45°. The mean daily range of temperature in the week was the greatest at Nottingham, 19½°, the least at Liverpool, 8¾°; the mean daily range from all stations was 14°. The mean temperature of the air for the week was 51°, being 1½° lower than the value for the corresponding week in 1875. The highest was 52¾°, at Bristol, and the lowest 50°, at London, Liverpool, Eccles and Sunderland.

The amount of rain measured at the several stations varied from 1¼ inch at London and Newcastle-on-Tyne to one-tenth of an inch at Truro and Plymouth; the average fall over the country was six-tenths of an inch.

The weather during the week was still very cold for the season, dull, and the sky generally cloudy, with frequent rain.

In Scotland, the highest temperatures of the air varied from 69° at Edinburgh and Dundee to 60½° at Greenock; the mean highest from all stations was 65°. The lowest temperatures of the air ranged from 40° at Paisley to 42° at Glasgow and Leith; the mean lowest from all stations was 41¼°. The mean range of temperature from all stations was 23¾°. The mean temperature of the air for the week was 52¼°, being ½° higher than the value for the corresponding week in 1875. The highest, 53½°, was at Dundee, and the lowest, 50¼°, at Aberdeen.

Rain was measured to the amount of three-quarters of an inch at Glasgow, at Paisley one-tenth of an inch only was measured; the average fall over the country was four-tenths of an inch.

At Dublin the highest temperature of the air was 70½°, the lowest 40¾°; the range was 29¾, the mean 53½°; and the fall of rain 1.01 inch.

JAMES GLAISHER.

Variorum.

THE RARER FERNS OF DEVON.—"It is, then, the beautiful and unrivalled forms of Fern life which fling over Devonshire scenery its almost indescribable charm. Peer at low tide into yon dark and dripping cavern which yawns upon the sea! The bright sunshine that dances upon the rippling waves pauses at the cavern's mouth, as if not daring to penetrate its gloomy depths. But just one tiny gleam of light has ventured to cross the threshold; and, sparkling on the dripping water, it flashes through the opaque blackness a kind of electric light. As the water falls, drip, drip, into the pool below, the light increases, and then—oh, glorious sight!—you see at the side and on the roof of this lonesome sea-cave the beautiful Sea Spleenwort (Asplenium marinum), hiding its roots in the cavern walls, and spreading out its bright green and shining fronds, that they may luxuriate in the dark humidity of its chosen retreat. Or peer over yonder cliff, whose inaccessible sides overhang the seething waves! Look closely into the shady cleft which nestles under yon projecting spur! There you may see, far out of your reach, one of the most rare and exquisite of the British Ferns—the Maidenhair (Adiantum Capillus-Veneris). Could you venture near enough to grasp it in your hand, you would indeed recognise that it is one of the most exquisite of plants. Its fine, black, wiry frond-stems, like a dark maiden's hair—it is most appropriately named—rise in clusters from its crown; the main frond-stems being branched with smaller and more beautiful hair-like stems, which bear upon their tender points the delicate light-green fan-shaped leaflets. Wandering through the cool lanes of Devonshire you may, too, meet with the fragrant hay-scented Buckler Fern (Lastrea æmula), which emits so beautiful an odour when pressed in the hand; with the delicately and transparently leaved Marsh Buckler Fern (Lastrea thelypteris); with the Mountain Buckler Fern (Lastrea montana), whose silvery fronds make the air fragrant when you tread upon them in their incipient unrolled state. But these varieties are not to be commonly encountered in every Devonshire lane. And still rarer—though found in Devonshire—are the lanceolate Spleenwort (Asplenium lanceolatum), the tiny forked Spleenwort (Asplenium septentrionale), the Tunbridge Filmy Fern (Hymenophyllum Tunbridgense), and Wilson's Filmy Fern (Hymenophyllum Wilsoni). The Moonwort (Botrychium lunaria), and the common Adder's tongue (Ophioglossum vulgatum), are also Ferns of Devonshire growth." "*The Fern Paradise*," *by Francis George Heath.*

THE CEDAR OF LEBANON.—It is stated in a small work on useful and ornamental planting, that at Highclere Park, in Hampshire, the Earl of Carnarvon planted seeds in 1739, from a cone gathered upon Mount Lebanon. Only two germinated, which after being planted out, remained rather stunted, and without showing any signs of vigour. In 1767 they were transplanted into a poor soil, in a bleak situation, being at that time 17 inches in girth at 1 foot from the ground, and from that date their growth was considered to be satisfactory.

No. 1 in 48 years measured 35 inches in girth at 3 feet from the ground.

No. 1 in 73 years measured 82 inches in girth at 3 feet from the ground.

No. 1 in 93 years measured 111 inches in girth at 3 feet from the ground.

No. 2 in 48 years measured 22 inches in girth at 3 feet from the ground.

No. 2 in 73 years measured 72 inches in girth at 3 feet from the ground.

No. 2 in 93 years measured 102 inches in girth at 3 feet from the ground.

These two Cedar trees, therefore, when 93 years old, measured respectively about 37 and 34 inches in diameter, and were making wood at the rate of 1 inch of diameter in about 2½ years. If this rate of growth is applied to the largest of the trees which Maundrell mentions that he saw upon Mount Lebanon, it would show them to be only about 350, or, at the most, 400 years old; and it is probable that this is somewhere about the limit of age which the Cedar trees attain, and not 3000 years, as has been asserted. The rapid growth of the Cedar tree is borne out by the careful examination of some logs brought from Honduras, which were found to exhibit a rate of growth even quicker than those mentioned, the concentric rings showing that 1 inch of wood diameter was made in rather less that two years." *Laslett's Timber and Timber Trees.*

Enquiries.

He that questioneth much shall learn much.—BACON.

118. DAISY RAKES.—*A. J. S.* has several acres of lawns to keep, and wishes to know from the practical experience of any of our correspondents which is the best Daisy rake. [Will "A. J. S." tell us how often he has seen a seedling Daisy?]

Answers to Correspondents.

AUTUMNAL HARDY FLOWERS: *J. P.* Aconitum autumnale and chinense; Anemone japonica and the white variety, Honorine Jobert; Antirrhinum majus, choice varieties; Aster Amellus, cabulicus, grandiflorus, multiflorus, Novæ-Angliæ, and others; Clematis Jackmanni and rubella; Colchicum speciosum, autumnale, especially the double forms; Pentstemons, choice varieties; Platycodon autumnale, Polygonum Brunonis, Pyrethrum serotinum, Schizostylis coccinea, Sedum Sieboldi, Sternbergia lutea. Many others might be added. They should be planted during the spring months, the bulbous kinds while resting.

COLEUS: *Cor.* We are quite at a loss to account for the disease. We can find neither insect nor fungus. Perhaps if you cut the diseased portion away, and place the plants in a better position, they may recover. Though the Coleuses are easily replaced it would be

worth trying, as it may lead you to ascertain the cause of their present condition. We do not think your Vines are likely to suffer. *M. Y. B.*

COMFREY: *J. H. B.* 1, Yes, we think it is; 2, from any of the large seed houses.

EXCHANGE: *Sir C. W. Strickland, Hildenley, Malton,* has a large quantity of seedlings of Hedychium Gardnerianum, which he would exchange, if any of our correspondents care for them; also a good many young plants of Scilla natalensis.

FUNGUS UPON A SMITH'S ANVIL: *S. D. D.* The large group of fungi from this singular habitat belongs to Agaricus squarrosus—a common parasite of old tree trunks. The fungi have doubtlessly arisen from "hybernating mycelium," or spawn in a state of rest. Such occurrences are not so rare as is sometimes imagined. In our volume for 1873, p. 1470, an instance is recorded of a large Agaric (A. dryinus) found growing upon the stand of one of the magnetic instruments of the Royal Observatory, Greenwich.

GRAPES: *J. G. P.* Your Grapes are suffering from a severe attack of mildew. Dust immediately the entire plant—leaves, berries and all—with flowers of sulphur, and keep the atmosphere a little drier for a day or two; then you may syringe the Vines forcibly with clear rain-water, so as to wash off the sulphur. This syringing must be thorough, or your Grapes will be spotted with the sulphur. We fear, however, the mildew has already spoiled them for this season.

HOTHOUSE: *Phantasie* You would not succeed in growing much else but Ferns, which should do admirably in such a situation.

NAMES OF PLANTS.—Professor Reichenbach has received by sample post a scarlet round card-box with a label—"1000 oeillets, D. E à Paris. No. J. T. P. 2;" address, German; stamp, English. No letter, or name of correspondent. Contents, a living Saundersian Orchid, and a minute flower of it. No doubt Hexadesmia fusiformis. From whom did it come? Particulars would oblige.—*A. W.* 1, Viburnum Opulus, Gueldres Rose; 2, Geranium pratense; 3, Symphytum officinale.—*W. S.* 1, Cymbidium aloifolium; 3, a hybrid Begonia, which we cannot pretend to name; 5, Saxifraga crassifolia; 6, Acer Negundo variegatum. The rest next week. The variegated Hawthorn is not uncommon.—*E. L.* Crepis biennis.—*A Subscriber from the Beginning.* We cannot name your Oak from a solitary leaf.—*W. H. D.* 1, Lonicera Ledebourii; 2, Rosa, sp.; 3, Bougainvillea spectabilis; 4, unrecognisable; 5, Allium ursinum; 6, Lonicera nigra?—*J. G.* We cannot undertake to name such scraps.

PANSY ROYAL BLUE: *W. Paul.* The blooms are stout and the colour good—a rich dark blue-purple, with dark blotch, having a bronzy flush. If the habit is good it will be a useful variety. You should sent it to Chiswick, to be grown there with other approved kinds for trial, and to give it an opportunity of being seen.

SCOTCH FIR INJURED BY A BEETLE: *W. D. & Sons.* The beetle that has done the mischief is Hylobus abietis. It is common enough in England, and still more so in Scotland, and from time to time does more or less damage by gnawing off the bark in the way shown in the specimen sent; but we have never in this country heard of any previous instance of wholesale damage like that described, but on the Continent its ravages have sometimes been very serious. *A. M.*

SISYRINCHIUM, &c.: *A. G.* Apply to Mr. Parker or Messrs. Rollisson & Sons, Tooting, Mr. Ware, Tottenham, or Messrs. Backhouse & Son, York.

UTRICULARIA: *A County Dublin Subscriber.* You are quite right. Utricularia montana is not an Orchid, and everybody knows it.

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COMMUNICATIONS RECEIVED.—J. H. L.—C. H. S.—Ebor.—C. W. S. (little yellow flower not yet received)—H. L. & Co.—H. J. V.—W. B.—G. P.—W. G. S.—Sir T. L. (next week).—Herman A. Frommer (many thanks).—C. T.—J. J.—J. F. R.

Markets.

COVENT GARDEN, June 1.

No changes of any consequence to quote; a steady supply and fair demand keeping prices much the same. *Jas. Webber, Wholesale Apple Market.*

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz.	4 0	..	Leeks, per bunch	0 2	0 4
— Jerusalem, p. lb.	0 3	..	Lettuces, per score	2 0	..
Asparagus (English), per bundle	.. 2 0	10 0	Mint, green, bunch	0 4	..
— French	.. 2 0	5 0	Mushrooms, per pott.	1 0	2 0
— Giant	.. 18 0	40 0	Onions, young, bun.	0 4	0 6
Beans, French, p. 100	1 3	2 6	Parsley, per bunch	0 4	..
— Longpod, basket	5 0	..	Peas, green, per qt.	3 0	..
Beet, per doz.	.. 1 0	2 0	Potatos, new Jersey, per lb.	.. 0 3	1 0
Cabbages, per doz.	.. 1 0	2 0	— Sweet, per lb.	.. 0 6	..
Carrots, per bunch	.. 0 6	..	Radishes, per bunch	0 1	0 3
— new, do.	.. 1 6	..	— Spanish, doz.	.. 1 0	..
Cauliflowers, p. doz.	2 0	4 0	Rhubarb, per bundle	0 6	1 0
Celery, per bundle	.. 1 6	2 0	Salsafy, per bundle	.. 0 9	..
Chilis, green, doz.	.. 1 6	..	Shallots, per lb.	.. 0 6	..
Cucumbers, each	.. 0 4	1 0	Spinach, per bushel	2 0	..
Endive, per doz.	.. 1 0	2 0	Tomatas, per doz.	.. 3 0	..
— Batavian, p. doz.	2 0	3 0	Turnips, per bundle	0 4	..
Herbs, per bunch	.. 0 2	0 4	— New French, do.	1 0	..
Horse Radish, p. bun.	3 0	5 0			

Potatos—Rocks, 105*s.* to 110*s.*; Regents, 140*s.* to 180*s.*; Flukes, 130*s.* to 160*s.*; Victorias, 120*s.* to 160*s.* per ton. Old stocks nearly exhausted.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1 6	5 6	Melons, each	.. 6 0	12 0
Apricots, per box	.. 2 0	3 0	Nectarines	.. 10 0	36 0
Cherries, per box	.. 3 0	6 0	Oranges, per 100	.. 6 0	12 0
Cobs and Filbts., lb.	0 9	1 0	Peaches, per doz.	.. 10 0	36 0
Figs	.. ..	10 0	Pears, per doz.	.. 3 0	15 0
Gooseberries, gr., qt.	0 9	1 0	Pine-apples, p. lb.	.. 1 6	4 0
Grapes, per lb	.. 3 0	12 0	Strawberries, per oz.	0 3	1 3
Lemons, per 100	.. 6 0	10 0			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	4 0	12 0	Narcissus, double,		
Azaleas, 12 sprays	.. 0 6	2 0	12 bunches	.. 9 0	24 0
Carnations, 12 blooms	2 0	4 0	Pelargoniums, 12 spr.	0 6	2 0
Cineraria, per bunch	1 0	2 0	— Zonal do.	.. 0 4	1 6
Eucharis, per doz.	.. 6 0	12 0	Pinks, white, per doz. bunches	.. ..	4 0 12 0
Gardenia, per doz.	.. 2 0	9 0	Primula, dbl., p. bun.	1 0	1 6
Heliotropes, 12 spr.	0 6	1 0	Rhododend., 12 hds.	1 6	6 0
Lily of Valley, 12 spr.	0 6	3 0	Roses, indoor, p. doz.	1 6	10 0
Mignonette, 12 bun.	6 0	9 0	Spiræa, 12 sprays	.. 1 0	4 0
Nemophila, 12 bun.	1 6	4 0	Stephanotis, per doz. sprays	.. ..	4 0 15 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	6 0	18 0	Heaths, in var., doz.	12 0	30 0
Azaleas, per doz.	.. 24 0	60 0	Lily of Valley, doz.	12 0	30 0
Begonias, per doz.	.. 6 0	12 0	Mignonette, do.	.. 6 0	9 0
Bouvardias, do.	.. 12 0	18 0	Myrtles, do.	.. 3 0	9 0
Calceolaria, per doz.	9 0	24 0	Palms in variety, each	3 6	21 0
— herbaceous, doz.	6 0	18 0	Pelargoniums, scarlet, per doz.	.. ..	4 0 9 0
Cineraria, per doz.	.. 6 0	18 0	— in variety, doz.	18 0	36 0
Cyperus, do.	.. 6 0	12 0	Petunias, double, doz.	9 0	36 0
Dentzia, do.	.. 6 0	18 0	— single, per doz.	.. 6 0	12 0
Dracæna terminalis	30 0	60 0	Roses, Fairy, do.	.. 9 0	15 0
— viridis, per doz.	18 0	24 0	— various, do.	.. 18 0	30 0
Ficus elastica	.. 2 6	15 0	Spiræa, per doz.	.. 9 0	24 0
Fuchsia, per doz.	.. 6 0	18 0	— palmata, each	.. 2 0	5 0
Genista, do.	.. 6 0	18 0			

CORN.

At Mark Lane on Monday trade was firm. For English Wheat factors held for an advance of 1*s.*, which was reluctantly given in some cases, the demand being wholly consumptive. Foreign white Wheat was also occasionally 1*s.* per quarter dearer. Barley was purchased at prices much the same as last week. Malt was slow of sale, and rates were no higher. Oats were quoted slightly dearer. Maize had a rather downward tendency, while Bean and Peas were quite on former terms. In flour transactions were few, but the quotations showed an improvement of from 6*d.* to 1*s.* on the week.—Trade was slow on Wednesday, with no important alteration in prices. The English Wheat was a small supply, but there were moderate arrivals of foreign, and with a small consumptive demand on provincial account last Monday's rates were supported. Barley, Oats, and other classes of spring corn were quoted as before. Flour experienced a dull sale, and prices were hardly so firm.—Average prices of corn for the week ending May 27:—Wheat, 45*s.* 3*d.*; Barley, 38*s.* 8*d.*; Oats, 28*s.* 1*d.* For the corresponding week last year:—Wheat, 41*s.* 10*d.*; Barley, 38*s.* 8*d.*; Oats, 29*s.* 7*d.*

CATTLE.

At the Metropolitan Market on Monday there was a shorter supply of beasts and a fair demand, consequently prices advanced. There were a few more sheep, but the demand was large and prices were higher, with a quick sale. The lamb trade was dull, and prices on the average lower. Choice calves were scarce and dearer.—Quotations:—Beasts, 4*s.* 4*d.* to 5*s.* 2*d.*, and 5*s.* 8*d.* to 6*s.* 2*d.*; calves, 4*s.* 8*d.* to 6*s.*; sheep, 5*s.* 8*d.* to 6*s.*, and 6*s.* 8*d.* to 7*s.* 2*d.*; lambs, 7*s.* 4*d.* to 8*s.* 4*d.*; and pigs, 4*s.* 6*d.* to 6*s.*—The supply of beasts was light on Thursday, and the best qualities firm, with a fair demand. In sheep the trade ruled rather quiet, and barely so firm. Lambs did not sell so readily as on Monday; prime calves brought full value; and pork quotations nominally unaltered.

HAY.

At the Whitechapel market on Monday, with a large supply and dull trade, prices were generally weaker. Prime Clover, 100*s.* to 145*s.*; inferior, 55*s.* to 95*s.*; prime meadow hay, 90*s.* to 135*s.*; inferior, 55*s.* to 75*s.*; and straw, 35*s.* to 46*s.* per load.—Trade continued quiet on Thursday, and the market was fully supplied. Clover, best, 115*s.* to 145*s.*; inferior, 85*s.* to 95*s.*; Hay, best, 112*s.* to 135*s.*; inferior, 55*s.* to 75*s.*; and straw, 34*s.* to 46*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 138*s.* to 147*s.*; inferior, 100*s.* to 120*s.*; superior Clover, 150*s.* to 160*s.*; inferior, 115*s.* to 130*s.*; and straw, 47*s.* to 52*s.* per load.

POTATOS.

The Borough and Spitalfields markets reports state that with moderate arrivals trade continues steady, and prices rule firm. Kent Regents, 150*s.* to 180*s.* per ton; Essex ditto, 130*s.* to 160*s.*; Scotch, 130*s.* to 200*s.*; Rocks, 100*s.* to 120*s.*; Flukes, 160*s.* to 195*s.*; Victorias, 180*s.* to 215*s.*; and Kidneys, 160*s.* to 175*s.*

COALS.

There was a good demand for house coals at market on Monday, and in some cases an advance on previous prices was obtained. Last quotations to hand:—Bebside West Hartley, 18*s.* 3*d.*; Seaham West Hartley, 16*s.* 9*d.*; West Hartley, 18*s.* 3*d.*; Walls End—Hetton, 20*s.*; Hetton Lyons, 17*s.* 9*d.*; Hawthorn, 17*s.* 9*d.*; South Hetton, 20*s.*; Chilton, 19*s.*; Kelloe, 18*s.* 3*d.*; Hartlepool, 19*s.* 6*d.*; Tees, 19*s.* 6*d.*

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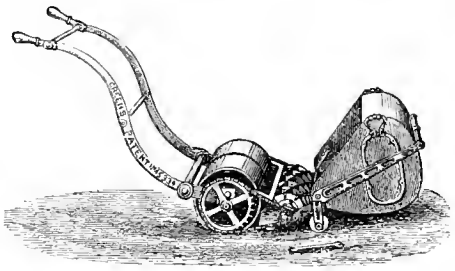

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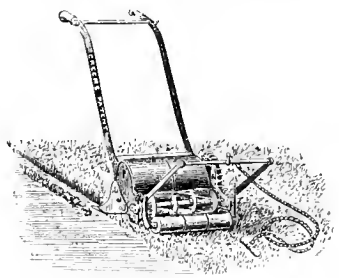

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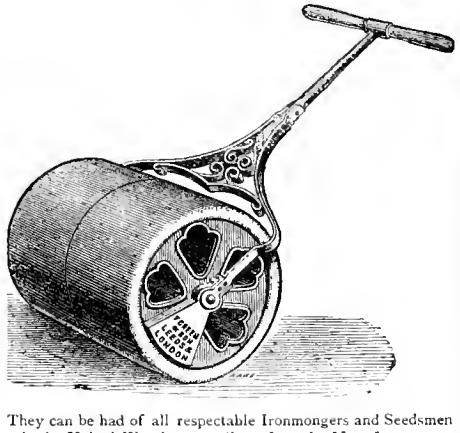

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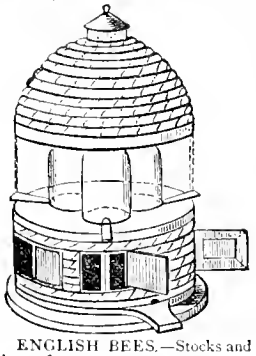

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FOR TRAINING PEAS, INSTEAD OF STICKS.
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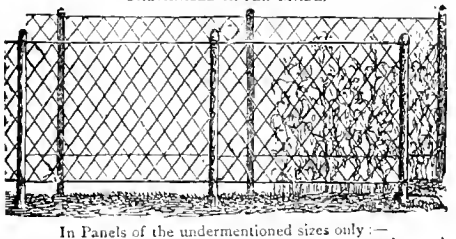

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Suitable for a Lady.

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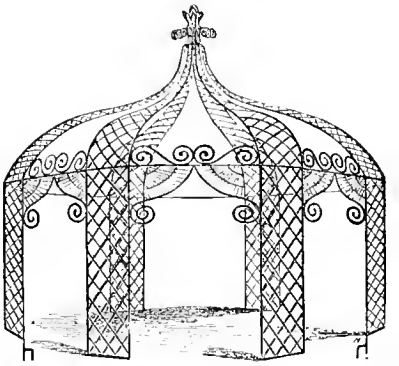

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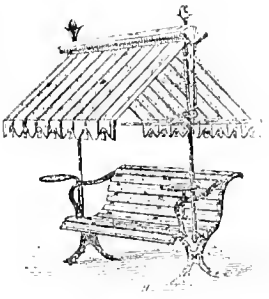

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With two revolving table and shifting gear for curtains.

Also the
NEW SELF-COILING HOSE REELS.

Of all Ironmongers, or of the Manufacturer,
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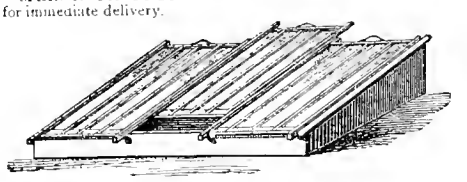

Height at back, 24 in.; at front, 13 in.; sides, 1¼ in. thick; lights, 2 in. thick. Made of best red deal, painted three coats; every pane of glass (21 oz.) is nailed as well as puttied in; each light has an iron strengthening rod and handle.
Cash prices, carriage paid to any station in England:—

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All 6 feet wide.		All 6 feet wide.	
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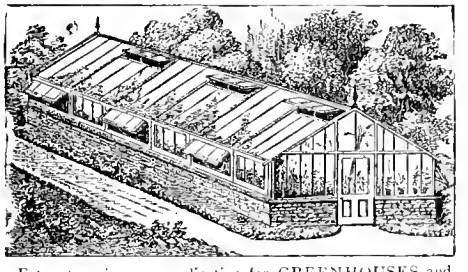

Estimates given on application for GREENHOUSES and CONSERVATORIES of all kinds, and to any design.

GARDEN BOXES and LIGHTS.	Each
Portable Box with One Light, 6 feet by 4 feet, glazed good 16-oz. sheet glass, painted four coats, and packed ready for use	£ s. d. 3 5 0
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LIGHTS ONLY.	
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Metallic Hothouse Builder to Her Majesty.
HENRY HOPE (late Clark & Hope, formerly Clark), HOTHOUSE BUILDER and HOT-WATER APPARATUS ENGINEER.
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BOOKS of DESIGNS, 5s. each.
☞ The Extensive Ranges of Metallic Hothouses in the Royal Gardens, Windsor and Osborne, were executed at this Establishment

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Can be obtained in all sizes and qualities, of
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B. & S. have always a large Stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., in 16-oz. and 21-oz.

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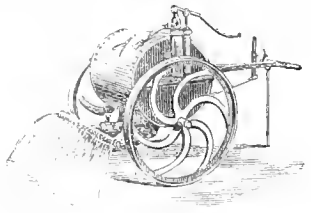
HAND WATER-CART and GARDEN ENGINE.



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The delivery valve can be worked at the outlet when filling a watering pot. It holds 35 gallons. The Spreader, for watering lawns, &c., can be removed at pleasure.
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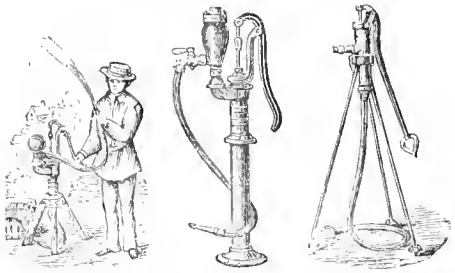
For Baths, Cisterns, Kitchen, or Garden use.
GARDEN PUMPS, NON-FREEZING PUMPS, COTTAGE PUMPS, LIQUID MANURE PUMPS.



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New Patent Garden Pump.
Price 25s. complete
(Packed for Rail, 2s. extra).

This Pump is on an entirely new principle, and for ease of working and portability stands unrivalled.
Descriptive Catalogue gratis and post-free.
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STEAM PLOUGHING MACHINERY,
ROAD LOCOMOTIVES, TRAMWAY LOCOMOTIVES,
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For Prices, Description, and Reports of Working, apply to the Manufacturers,
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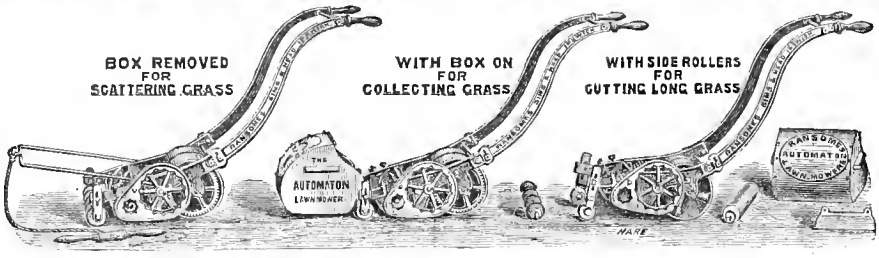
AVELING & PORTER'S ENGINES have gained the highest Prizes at every important International Exhibition. The Two Medals for Progress and Merit were awarded them at Vienna for their STEAM ROLLERS and ROAD LOCOMOTIVES; and at the last trials of the Royal Agricultural Society of England their AGRICULTURAL LOCOMOTIVES gained the First Prize after exhaustive trials, when one of their 10-horse power Engines, fitted with single slide and ordinary link-motion, indicated 35-horse power with a consumption of *three and one-fifth pounds of coal* per horse-power per hour.

RANSOMES' AUTOMATON LAWN MOWERS.



THE BEST, SIMPLEST, AND MOST DURABLE MACHINES.
The "Automatons" are thoroughly strong, well-made Machines, easy to work, and cut the grass perfectly and leave no ribs. They collect the cut grass into a box in front of the Machine, or deliver it on the Lawn behind the Machine as required. They have adjustable handles to suit the height of any person, and are sent out with both front and side rollers, the former for use in general work, and the latter when cutting long grass, or when it is unnecessary to roll the grass in front of the cutters. These Machines have the best wheel gearing, combined steel and iron knives, an automatic silent action, instead of ratchets, and all the parts easily adjustable. Twelve thousand in use.
Sizes, 8 to 20 inches. Prices from 55s.

RANSOME'S "LITTLE GEM" LAWN MOWERS,
For small gardens. These perfect "Little Gems" have a grass-collecting box, and the height of cut can be varied. They have an adjustable ledger blade, and the height of the handle can be adjusted to suit any person. The cutters can be reversed when blunt by driving the Machine in the opposite direction.
Prices, 6 in., 25s.; 8 in., 35s.
Free Delivery to all principal Railway Stations. Trial allowed.
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MANUFACTURERS OF
CELEBRATED PRUNING AND

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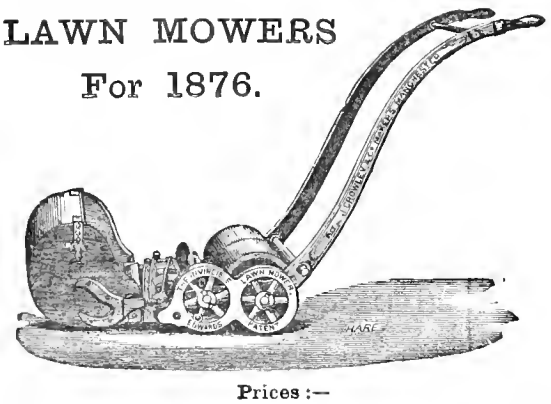
GLAMORGAN WORKS, SHEFFIELD.

LAWN MOWERS
For 1876.



Prices :—
6 in. £1 5s. 8 in. £2 10s. 10 in. £3 10s. 12 in. £4 10s. 14 in. £5 10s. 16 in. £6 10s. 18 in. £7 10s.
20 in. £8 10s. 24 in. £9 10s.
Every Machine Guaranteed. Catalogues on application.

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LAWN MOWER CONTEST,
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EVERY MEDAL AWARDED
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1875.
THE "INVINCIBLE."
Results have proved conclusively that the "INVINCIBLE" is without exception, the
Best Lawn Mower Made.
Cuts Wet or Dry, Long or Short Grass.
S. EDWARDS, Patentee.
SOLE MAKERS :—
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HORTICULTURAL BUILDERS AND HOT-WATER ENGINEERS,

LILLIE BRIDGE, FULHAM, LONDON, S.W.,

WILL BE HAPPY TO FURNISH

Plans and Estimates for the Erection and Heating complete of Conservatories and Hothouses of every description.

VERANDAHS, PAVILIONS, GLASS APPROACHES, &c.

MANSIONS, CHURCHES, SCHOOLS, PICTURE GALLERIES, HALLS, &c.,

Heated by Hot Water on the best principles.

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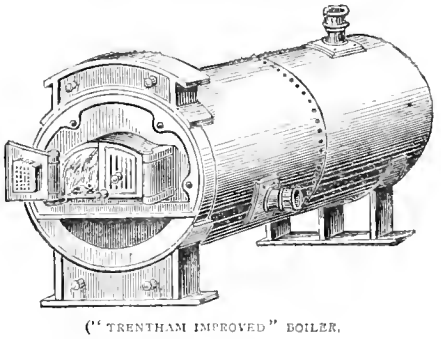
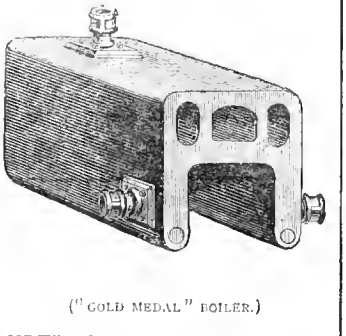


("TRENTHAM IMPROVED" BOILER.



("GOLD MEDAL" BOILER.)

NEW PATENT "CLIMAX" BOILER (1874). See p. 666, 1874, *Gardeners' Chronicle.*

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☞ *The largest and most complete Stock in the Trade; upwards of Twenty Thousand Pounds' worth to choose from.*

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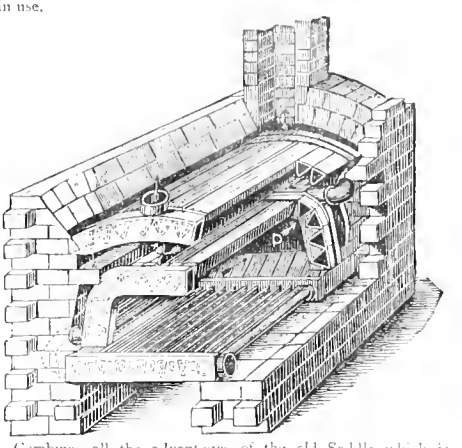
Which can be attached to any ordinary Boiler. These Tubes are the greatest Economisers of Fuel and Preservatives of Boilers, Fire Bars, and Furnace Fronts ever yet introduced to the public.

HOT-WATER APPARATUS ERECTED COMPLETE.

PRICE LIST on application; or, Six Stamps for DESCRIPTIVE CATALOGUE, 4th Edition.

MESSENGER AND COMPANY'S PATENT TUBULAR BOILER.—Nearly 3000 now in use.



Combines all the advantages of the old Saddle, which is acknowledged to be the most economical, with the Tubular, the most powerful form of boiler. By the use of triangular tubes a larger amount of heating surface is exposed to the direct action of the fire than in any other form of boiler. The water-bridge (D) also receives the most intense heat. The boiler is made of cast-iron, which is admitted to be the best material as regards durability, strength, &c. In consequence of the above advantages we are enabled to supply boilers with a large amount of heating-power at very moderate rates. The power of this boiler can at any future time be increased by adding another row of tubes. Illustrated List free on application to

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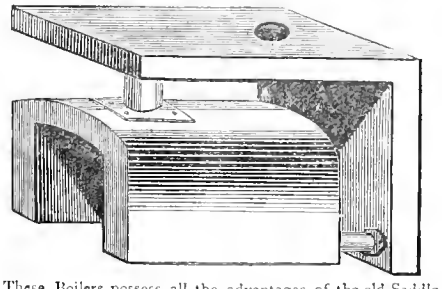

These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements—viz., the water space at back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel; the cost of setting is also considerably reduced, and likewise the space occupied; at the same time these Boilers are simple in construction, and being made of wrought iron are not liable to crack. They are made of the following sizes:—

Sizes.			To heat of 4-in. Pipe.	Price.
High.	Wide.	Long.	Feet.	£ s. d.
20 in.	18 in.	18 in.	300	7 0 0
20 ,,	18 ,,	24 ,,	400	8 0 0
20 ,,	18 ,,	30 ,,	500	9 0 0
24 ,,	24 ,,	24 ,,	700	12 0 0
24 ,,	24 ,,	30 ,,	850	14 0 0
24 ,,	24 ,,	36 ,,	1,000	16 0 0
24 ,,	24 ,,	48 ,,	1,400	20 0 0
28 ,,	28 ,,	60 ,,	1,800	25 0 0

Larger sizes if required.

From Mr. CHARLES YOUNG, *Nurseries, Balham Hill, S.W., May 29, 1873.*

"Having given your Patent 'Double L' Boilers a fair trial at my Nurseries, I beg to say that they are most satisfactory. I consider them the best in use, and without doubt the most economical of all boilers; they will burn the refuse of other tubular boilers I have in work."

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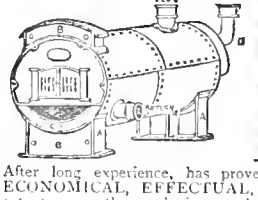
When ordering Boilers please refer to the above advertisement.

STEVENS'
TRENTHAM GREENHOUSE BOILER,



After long experience, has proved the most SIMPLE, ECONOMICAL, EFFECTUAL, and LASTING BOILER extant; recently much improved. For Illustrations, with full particulars, apply to the Sole Makers,

F. & J. SILVESTER,
Castle Hill Foundry, Engineering and Boiler Works, Newcastle, Staffordshire.

☞ Our Boilers are the ONLY ones made with the sanction and under the inspection of the inventor, Mr. Stevens—all others being base imitations.

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7 ,,	..	..	0	4	6	18 ,,	..	..	0	10	0
8 ,,	..	..	0	5	0	19 ,,	..	..	0	10	6
9 ,,	..	..	0	5	6	20 ,,	..	..	0	11	0
10 ,,	..	..	0	6	0	21 ,,	..	..	0	11	6
11 ,,	..	..	0	6	6	22 ,,	..	..	0	12	0
12 ,,	..	..	0	7	0	23 ,,	..	..	0	12	6
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Subscribers who wish to have "The Gardeners' Chronicle" forwarded DIRECT FROM THE OFFICE are respectfully informed that payment MUST BE MADE IN ADVANCE.

ROYAL BOTANIC SOCIETY, Gardens, Regent Park, N.W.
EXHIBITION of PLANTS, FLOWERS, and FRUIT, WEDNESDAY June 21. Gates open at 2 o'Clock.
EVENING FÊTE, WEDNESDAY, July 5. Gates open at 8 o'Clock.
Schedules of Prizes can be had on application by Post.
Tickets to be obtained at the Gardens only, by Vouchers from Fellows of the Society. Price, for June 21, 5s. each, and for the Evening Fête 10s. each, or on the day of the exhibition, 7s. 6d. each, and on the day or evening of the Fête, 15s. each.

CRYSTAL PALACE.—GREAT ROSE SHOW, FRIDAY and SATURDAY next, June 16 and 17. See future advertisements.

ALEXANDRA PALACE.—GREAT ROSE SHOW of the Season, FRIDAY and SATURDAY, July 7 and 8. LAST DAY of ENTRY, JULY 1. Schedules of Prizes and all particulars may be had on application to
ALEX. McKENZIE, 1 and 2, Great Winchester Street Buildings, E.C., and at the Alexandra Palace, Muswell Hill, N.

SPALDING HORTICULTURAL SHOW, JUNE 21 and 22. ENTRIES close JUNE 16. Schedules on application to
GEORGE KINGSTON, Secretary.

LEE and BLACKHEATH HORTICULTURAL SOCIETY will hold its ANNUAL EXHIBITION in the Grounds of John Penn, Esq., The Cedars, Lee, on WEDNESDAY and THURSDAY, June 21 and 22.
Schedules and Forms of Entry may be had on application to 5, Buones Road, Lee, S.E. C. HELMER, Sec.

COLCHESTER and EAST ESSEX HORTICULTURAL SOCIETY.—A two days' Show will be held at Lexden Park, Colchester, on JUNE 28 and 29, in connection with the Essex Agricultural Show. £200 will be offered for Plants, Roses, Orchids, &c., in classes for Amateurs and Growers. Two Military Bands will attend. Prize Lists, &c., may be obtained of
Mr. WM. HARRISON, Sec.
Colchester, and Birch Villa, near Colchester.

THE TORBAY HORTICULTURAL SOCIETY.—The Committee have the pleasure to announce that their SUMMER SHOW will be held at Torquay on JUNE 29 and 30. FIFTY POUNDS will be offered as Special Prizes for CUT ROSES (open to all England). Classes for FRUIT and VEGETABLES (open). Prize Lists, &c., ready. Entries close on Friday, June 23.
W. FANE TUCKER, Capt., Hon. Sec. T. H. Soc.
Braddon Tor, Torquay.

TORBAY HORTICULTURAL SOCIETY, ROSE SHOW, JUNE 29 and 30, 1876.
NOTICE.—In Class A, each treble may be shown in three stages of bloom, viz, one bloom fully open, a second half open, and the third in bud
W. FANE TUCKER, Capt., Hon. Sec.

SOUTHPORT PAVILION and WINTER GARDENS GRAND HORTICULTURAL EXHIBITION, JULY 5, 6, 7, and 8. Over £400 in Prizes. ENTRIES CLOSE JUNE 27. Special Prize for 24 Cut Roses, to Nurserymen only. 1st Prize, £5 5s.; 2d Prize, £3 3s.

SUTTON'S GRASS SEEDS for PASTURES, 22s. 6d. to 36s. per Acre. Carriage free.

SUTTON'S GRASS SEEDS for PARK GROUNDS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for GARDEN LAWNS, 20s. per Bushel. Carriage free

SUTTON'S GRASS SEEDS for CROQUET GROUNDS, 20s. per Bushel. Carriage free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

Hyacinths, Tulips, Crocus, Narcissus, &c.

BUDDENBORG BROS., Hillegom, Haarlem, Holland.—WHOLESALE CATALOGUE of DUTCH BULBS now ready, and may be had free on application to
Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

Fruiting and Planting Vines.

THE COWAN PATENTS' COMPANY (late Meredith) have still on hand a good selection of the above. Catalogues and prices on application. They can also offer good Fruiting and Succession PINES.
The Vineyard, Garston, near Liverpool.

To the Trade.

ASPARAGUS, 1-yr., 2-yr., and 3-yr. TROPÆOLUM CANARIENSE.
JAMES BIRD, American Nurseries, Downham.

ROBINSON'S CHAMPION DRUMHEAD CABBAGE.—Extra good autumn-sown plants, price 3s. 6d. per 1000
JAS. IVERY AND SON, Dorking Nursery, Surrey.

Mangel and Swede.

JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself.
Bardney Manor, Lincoln

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

PINES.—Sixty in Fruiting Pots, also a quantity of SUCCESSION PLANTS, for Sale. Apply to R. LAING, Gardener, Furze Down, Tooting Common, S.W.

Hothouses, Hot-water Apparatus, &c.

HALLIDAY AND CO., HOTHOUSE BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates and Plans free. Best Construction! Best Materials! Best Workmanship! Catalogues free.
Offices: 22, Barton Arcade, MANCHESTER

Wood Engraving.

MR. W. G. SMITH, ARTIST and ENGRAVER on WOOD, 15, Mildmay Grove, London, N.

CATALOGUES.—His Excellency Pierre Wolkenstein will feel greatly obliged if Nurserymen and Seedsmen will kindly send him their Catalogues. They should be forwarded (by post) to
S. E. PIERRE WOLKENSTEIN, Secrétaire de la Société Impériale d'Horticulture de Russie, St Petersburg.

TO BE SOLD or EXCHANGED, SIX LARGE FINE-FOLIAGE PLANTS. May be seen and taken to at the Regent's Park Show on the 21st inst. Small Palms, Orchids, Azaleas, &c., wanted.
The GARDENER, Braymick Lodge, Maidenhead.

Notice.

FOR SALE.—A fine ORANGE TREE, in pot, height 8 feet, breadth 6 feet; also a fine LEMON TREE, in pot, height 8 feet, breadth 4 feet.
WANTED, good PERESKIA STOCKS: state size and price.
W. CUTBUSH AND SON, Highgate Nursery, London, N.

WANTED, VERBENAS, Purple King, and 300 GERANIUMS, Beauty of Calderdale.
JOHN CARTER, Nurseryman, Keighley, will be glad of quotations for above.

Adiantum Ferns.

WANTED, good healthy plants, in 10 or 12-inch pots, or larger, of Adiantum affine, A. assimile, A. cardiochlæna, A. excisum multifidum, A. formosum, A. hispidulum, A. graciliimum, A. fulvum, A. tinctum, A. pedatum, A. pubescens. State size and price to
W. D., Post-office, Christchurch.

WANTED, in October next, 1000 WARRINGTON GOOSEBERRIES; plants to be 1-yr. transplanted; state price. Price wanted also for 3-yr. and 4-yr. APPLE TREES of best Market varieties, by the 100 or 1000.
GRANT AND CO., The Rose and Fruit Tree Nursery, Portadown, Ireland.

CARTER'S GRASS SEEDS for Lawns and Parks, 20s. per bushel.

CARTER'S GRASS SEEDS for Permanent Pastures, 22s. 6d. to 36s. per acre.

CARTER'S GRASS SEEDS. Carriage Free. To suit all Soils.

CARTER'S GRASS SEEDS for Renovating Meadows and Lawns, 18s. to 20s. per bush.

CARTER'S, THE QUEEN'S SEEDSMEN, 237 and 238, High Holborn, W.C.

JOHN WATERER AND SON'S Exhibition of RHODODENDRONS is now on view at The Gardens, Manley Hall, Manchester.

DAHLIAS.—For choice kinds apply to GEO. RAWLINGS, Romford, who devotes himself almost entirely to the cultivation of this noble flower.

PRIMULA FIMBRIATA flore plena.—Double white and various other shades of colour, a few hundreds of good plants in 48's are offered cheap at per 100, to the Trade.—J. JACKSON, Nursery, Kidderminster.

Verbenas, Verbenas, Verbenas.

WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

EXHIBITION STOVE and GREENHOUSE PLANTS to be Disposed of. For List and Prices, apply to
G. AND W. YATES, Nurserymen, Manchester.

TRICOLOR GERANIUMS.—20,000 Mrs. Pollock and Sophia Dumaresque, at 3s. 6d. per doz., package included, or post-free at same price. The Trade supplied.
ALFRED FRYER, The Nurseries, Chatteris, Cambridgeshire.

Pelargoniums, Pelargoniums.

JAMES HOLDER'S unrivalled Collection—strong healthy Plants, Show, French, and Fancy varieties, at 35s. per 100, cash, hamper and packing included. Extra strong plants, in 48's and 32's, at 9s. and 12s. per dozen, basket and packing extra.
Crown Nursery, Reading.

DOWNIE AND LAIRD beg to intimate that their fine stocks of Show and Fancy PANSIES, also VIOLAS, are now in fine flower at their Pinkhill Nurseries. Many of their Seedlings this season are of surpassing beauty. Inspection invited. Edinburgh, May 24, 1876.

Notice.—Seeds, Seeds.

WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds.
CATALOGUES now ready, which contain every requisite, at fair prices, post-free on application.
Highgate, London, N.

Plant Catalogue.

CHARLES TURNER'S DESCRIPTIVE LIST of PLANTS for the Season, including several new varieties now offered for the first time, is ready, and may be had on application.
The Royal Nurseries, Slough.

Cinerarias.

MESSRS. JOHN STANDISH AND CO.'S strain of Cinerarias is now acknowledged to be the finest in the Kingdom. Carefully saved Seed may now be had post-free at 1s. 6d. and 2s. 6d. per packet. Wholesale price to the Trade on application.
Royal Nurseries, Ascot, Berks.

Cymbidium eburneum.

WM. MAULE AND SONS have to offer a few small, thoroughly established, home-grown Plants from a flowering specimen of Loddige's true variety. Price, 63s. each. The Nurseries, Bristol.

CENTAUREA CANDIDISSIMA, in single pots, nice plants, 20s. per 100, package included. Not less than 25 at the above price. Half to quarter specimens.
KALOSANTHES COCCINEA, well set for flower, 3s. 6d., 5s., to 7s. 6d. each
JOHN HOUSE, Eastgate Nurseries, Peterborough.

ARAUCARIA EXCELSA, very healthy, well furnished plants, admirably adapted for decorative purposes, 15 to 18 inches high. Price on application. Trade supplied.
FRANCIS & ARTHUR DICKSON & SONS, Upton Nurseries, Chester.

ASPLENIUM ADIANTUM NIGRUM—the best hardy Fern for Bouquets. Fronds supplied by the 1000, and roots by the 100, very cheaply. Offers requested. Hampers sent weekly if desired.
GARDENER, Milford Post-office, Lymington.

LETTY COLES.—This Rose is now being sent out; plates may be had for eighteen stamps. The finest Tea Rose sent out for years.
JOHN KEYNES, Nurseryman, Salisbury.

SALES BY AUCTION.

New Blue Flowering Orchid.

MR. J. C. STEVENS has received instructions from Messrs. J. Sander & Co. to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, June 14, at half-past 12 o'clock precisely, the new and magnificent ODONTOGLOSSUM CELESTE, Reichenbach, described in this week's *Gardeners' Chronicle*. Mr. Klaboch, Mr. Roezl's fortunate nephew, and the discoverer of this importation, writes: "Many miles distant, the beauty of the Odontoglossum cirrhosum being still before me, I once more return to the haunts of the blue marvel (Mr. Klaboch has repeatedly sent this Orchid home, but never before alive). It is a magnificent and grand Orchid, and I know of no other so lovely and beautiful; its 4 inch large bright flowers are produced in great abundance, and on one plant alone which I sent home to you you will find were over forty flowers, and to see these fully expanded is the grandest sight imaginable. The 4 to 5 inch large flowers of this grand novelty are produced abundantly on long thick flower-stalks, standing boldly off from the leaves; centre of the flowers light blue, shading off into dark purplish blue; the petals are often white tipped, column blue, lip clear bright yellow and lilac." Also about THIRTY LOTS, the entire quantity alive out of several cases of Odontoglossum vexillarium found in a new and warm district, fine masses of Selenipedium Hartwegii? Reich., sent home by Mr. Wallis, a grand variety, with nine to twelve flowers on a spike; fine healthy plants of Oncidium Weltoni, O. Krameranum, Selenipedium Roezlii, Oncidium papilio, O. superbiens, and the entire stock of a white Batemannia, discovered by Mr. Wallis. Flowers and Drawings will be shown on the day of Sale.

On view the morning of Sale, and Catalogues had.

Kelvedon.

Important Unreserved SALE of the celebrated MARKS HALL COLLECTION of EXHIBITION STOVE and GREENHOUSE PLANTS, &c., on FRIDAY, June 23.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mrs. F. E. Honywood to SELL by AUCTION, without reserve, on the Premises, Marks Hall, Kelvedon, Essex, on FRIDAY, June 23, at 11 for 12 o'Clock precisely, the valuable Collection of STOVE and GREENHOUSE PLANTS, containing many matchless Exhibition Specimens, which for many years past have obtained First-class Prizes at the leading County Shows, including a grand plant of Anthurium Scherzerianum, 3 feet through; also magnificent examples of Stephanotis floribunda, Pandanus Veitchii, Adiantum farleyense, Alocasias, Allamandas, Ixoras, Crotons, Draccenas, and Clerodendrons, Theophrasta imperialis, and others. Also some noble Palms, amongst which may be named Cocos Weddelliana, 6 feet; Kentia Fosteriana, 7 feet 6 inches; Verschaffeltii melanochætes, 8 feet; Latania borbonica, 13 feet through; Chamærops humilis, 10 feet through; likewise fine plants of Cybotium princeps, C. Schiedei, and Alsophila australis, each 11 feet through, and other Tree Ferns, an unusually fine double white Camellia, 14 ft. high; several handsome specimen Azalea indica, a considerable number of specimen hard-wooded Heaths and New Holland Plants, Pelargoniums, Fuchsias, Fruiting and Succession Pines, a Force Pump with Hose, &c.

May be viewed the day prior and morning of Sale on the presentation of a Catalogue, which may be obtained (price 1s. each, returnable to purchasers), of Mr. ELLIOTT, on the Premises; and of the Auctioneers and Estate Agents, 98, Gracechurch Street, E.C.; and Leytonstone, Essex, E.

Mr. John Thompson's Carr Nurseries, Doncaster, YORKSHIRE.

VALUABLE FREEHOLD ESTATE.

MESSRS. THOMPSON AND WOOD will SELL by AUCTION, by order of the Executors of the late Mr. John Thompson, at the Royal Hotel, Doncaster, on FRIDAY, June 16, at 6 for 7 o'Clock in the evening, subject to Conditions of Sale to be then read, the following valuable FREEHOLD NURSERY LAND, RESIDENCE, COTTAGES, GREENHOUSES, and other Buildings, situate one mile from the important market town of Doncaster, viz:—

	A. R. P.
LOT 1.—A PLOT of LAND, used as Nursery Ground, well sheltered with Beech and other hedges, and containing the following erections, viz:—A well-built eight-roomed Dwelling House, standing within its own pleasure garden. A Building, consisting of a two-stall Stable, Implement Shed, Coach-house or Potting Shed, with Offices and Seed Warehouse above. A Span-roof Plant-house, 47 ft. by 21 ft. 6 in., fitted with requisite Water Tanks, Stone Slab, Plant Stands, &c., and Plant Pit attached thereto—38 ft. 6 in. by 4 ft. A Vinery, 30 ft. by 15 ft. 6 in., stocked with Vines in a bearing condition. A Propagating House behind, 30 ft. 6 in. by 10 ft. A Span-roof Cucumber House, 55 ft. by 15 ft. A range of Forcing Pits, 77 ft. 6 in. by 6 ft. A Span-roof Plant Pit, 54 ft. 6 in. by 6 ft. 6 in. The Wells, Pumps, Heating Apparatus, and other conveniences, are in a very complete and superior condition, well adapting this plot for the purposes of either a Private Residence or a Nursery and Market Garden, the whole Plot containing by recent survey	4 0 36
LOT 2.—A PLOT of LAND, also used as Nursery Ground, adjoining Lot 1, and containing, by recent survey	4 1 7
LOT 3.—A PLOT of LAND, also used as Nursery Ground, adjoining Lot 2, with two Cottages, a Vinery, 22 ft. by 13 feet, stocked with Vines in a bearing condition; a Plant Pit, 32 ft. by 6 ft. 9 in.; a Store Shed, with flag floor, Piggeries and Hencote, containing, by recent survey	5 0 27
Total Acres	13 2 30

The purchaser of each lot may take at a valuation in the usual way the whole of the large stock of FOREST and FRUIT TREES, SHRUBS, and PLANTS, growing thereon, and also the divisional HEDGES growing on Lot 1, and if not so taken the Vendors reserve the right to remove the same up to January 1, 1877, when possession can be had.

The whole of the Land is of a most fertile and productive nature, and well adapted for a Nurseryman and Market Gardener, having for twenty years received unremitting care and attention from the late owner, who spared neither pains nor expense in his endeavour to make the same a model garden and nursery.

Particulars of the Stock and a plan of the Estate and further information may be had on application to

Mr. F. M. THOMPSON, 18, French Gate, Doncaster, the Auctioneers, Great Grimsby, Lincolnshire; or at the Offices of COLLINSON, LITTLEWOOD, AND PARKIN, Solicitors, Doncaster, June 1.

Established Orchids and Ferns,

The property of the late H. Smithes, Esq., of Sydenham.

MR. J. C. STEVENS has received instructions to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY and WEDNESDAY, June 20 and 21, at half-past 12 o'Clock precisely each day, the choice COLLECTION of ORCHIDS, formed by the late H. Smithes, Esq., at Lamme Park, Sydenham, consisting of all the leading varieties of Cattleyas, Vandas, Odontoglossums, Phalænopsis, Oncidiums, &c.; also a small collection of FERNS.

May be viewed the morning of Sale, and Catalogues had.

To Lovers of Gardening.

FOR SALE, a DETACHED RESIDENCE, charmingly situate in the environs of the city of Canterbury, within a quarter of an hour's walk of the Cathedral, commanding a most picturesque view, standing in its own grounds of above 4 acres, which are tastefully laid out and planted with choice Fruit Trees, Shrubs, &c., now in full bearing. The Soil is extremely fertile. The House contains 4 Reception Rooms, 10 Bedrooms, good Offices, Greenhouse, Conservatory, &c. For further particulars, apply to

Mr. F. KEYES, Auctioneer, West Gate, Canterbury.

To Market Gardeners and Others.

TO BE SOLD, the LEASE of nearly 4 Acres of rich Ground, and about 16,000 feet of Glass especially erected for Grape Growing for Market purposes, built regardless of cost and upon the most approved principles. The heating is most efficient, and the working details throughout perfect. The houses are stocked with young Vines in grand condition, and just coming into fruit. The whole is held for a term of sixteen and a half years from Midsummer next, at a peppercorn rent, and is within four miles of Covent Garden, situate south.

Apply to Mr. RANSLEY TANTON, Horticultural Valuer, Office, 17A, High Street, Borough, London, S.E.

TO BE SOLD, about 16,000 feet of GLASS, specially erected for Grape Growing for Market purposes, built regardless of cost and upon the most approved principles. The heating is most efficient, and the working details throughout perfect. The Houses are stocked with young Vines in grand condition and just coming into fruit.

TO BE LET, upon long Lease, about 4 acres of rich GROUND which is attached, and within 4 miles of Covent Garden, situate south. Apply to

Mr. RANSLEY TANTON, Horticultural Valuer: Office, 17A, High Street, Borough, London, S.E.

Exeter, Devon.

To NURSERYMEN and GARDENERS.

TO BE LET, with Immediate Possession, an excellent NURSERY, fully planted with Forest Plants, Thorns, &c., about 5 Acres in extent, with good House, Greenhouse, Vinery, and Packing Sheds thereon. An additional 5 Acres of Land can be had adjoining if required. Apply to

Mr. EDWARD ELLIS, Surveyor, Exeter.

Dutch Bulbs.

C. G. VAN TUBERGEN, JUN., FLORIST, &c., Haarlem, Holland, begs to call the attention of the Trade to his NEW CATALOGUE of Hyacinths, Tulips, &c., which may be had free on application to

Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Special Offer.—Vesuvius, Crystal Palace Gem.

WILLIAM BADMAN offers good plants of VESUVIUS from single pots, 10s. per 100, 85s. per 1000. CRYSTAL PALACE GEM, 15s. per 100. MADAME VAUCHER, finest White Pelargonium, 10s. per 100. Package included. Terms cash.

Cemetery Nursery, Gravesend, S.E.

J. VANDERSWAELMEN, NURSERYMAN, Gendbrugge, Ghent, Belgium, begs the buyers of the following to send their orders immediately, as the demands always exceed the stock:—

HELLEBORUS NIGER, at 16s. per 100, or 120s. per 1000, first size. Next autumn.

SPIRÆA JAPONICA, at 12s. to 16s. per 100, first size. Next autumn.

English-raised Roses.

CHARLES TURNER is now prepared to execute orders for the fine new varieties MRS. BAKER and OXONIAN, strong plants, at 7s. 6d. each. For Descriptions and Opinions of the Press see new Catalogue, which may be had on application. The four varieties, JOHN STUART MILL, MISS HASSARD, REV. J. B. M. CAMM, and ROYAL STANDARD, sent out last Season by CHARLES TURNER, and which have been greatly admired at the Metropolitan Exhibitions this spring, are also strongly recommended.

The Royal Nurseries, Slough.

REGAL PELARGONIUMS.

CAPTAIN RAIKES, MARIE LEMOINE, QUEEN VICTORIA—the three best Geraniums ever offered—one of each, post-free, 3s. 6d., or 12s. per dozen; also BEAUTY OF OXTON and KÖNIG ALBERT. The set of five for 10s. 6d. Post-office Orders payable to

FREDERICK PERKINS, Nurseryman, Regent Street, Leamington.

Cranston's Nurseries (Established 1785).

TEA-SCENTED ROSES—20,000 strong, well hardened plants, in 5½-inch pots.

April and May are the best months for Bedding or Planting-out the Tea-scented, China, Noisette, and all Roses on their own roots. Selections, left to us, from 12s. to 15s. per dozen.

Descriptive Priced LISTS on application to

CRANSTON AND MAYOS, Hereford.

PANSIES—CHEAP PANSIES.

BLUE KING, the best Hardy Blue Bedding Plant ever introduced, 1s. per dozen, 8s. per 100, 70s. per 1000. Plants suitable for Beds or Potting for Market.

DUKE OF PERTH, large black, 1s. per dozen, 8s. per 100.

CLOTH OF GOLD, from pots, 2s. 6d. per dozen, 17s. 6d. per 100.

MRS. FELTON, pure white, large violet eye, 2s. 6d. per dozen, 17s. 6d. per 100.

YELLOW KING, very large and showy, 2s. 6d. per dozen, 17s. 6d. per 100.

FINEST SHOW VARIETIES, 6s. per dozen, 40s. per 100.

FREDERICK PERKINS, Nurseryman, Regent Street, Leamington.

THE WISBECH GREAT ANNUAL ROSE SHOW and HORTICULTURAL EXHIBITION will be held in the Grounds of Colville House, on THURSDAY, June 29. All Exhibitors compete without entrance fees. Schedules of Prizes and all information on application to

Wisbech. CHARLES PARKER, Hon. Sec.

RICHMOND HORTICULTURAL SOCIETY.

President H.S.H. the Duke of TECK, G.C.B.

Under the Royal and Distinguished Patronage of—

H.R.H. the Duchess of CAMBRIDGE,

H.R.H. the Princess MARY OF CAMBRIDGE, Duchess of TECK,

H.R.H. the Duc D'AUMALE, &c.

The SECOND EXHIBITION of PLANTS, FLOWERS, FRUIT, VEGETABLES, and DINNER-TABLE DECORATIONS, will be held in the Old Deer Park, Richmond Green (by the kind permission of Mr. Fuller), on THURSDAY, June 29, 1876. Schedules may be obtained of the Hon. Secretary.

ALBERT CHANCELLOR, Hon Sec.

1, King Street, Richmond, S.W.

THE OUNDLE EXHIBITION of FLOWERS, FRUITS, VEGETABLES, POULTRY, PIGEONS, RABBITS, and CATS will be held on WEDNESDAY, July 5. Prizes, £170, with Special Prizes for STOVE and GREENHOUSE PLANTS, FERNS, and ROSES. All Entries close June 28. Schedules, &c., of the Secretary,

ALFRED KING, Oundle.

HUNTINGDONSHIRE HORTICULTURAL SOCIETY.—The SUMMER SHOW will be held on WEDNESDAY, July 5, in the grounds of Castle Hill House, Huntingdon. SILVER CUPS for Collections of GREENHOUSE PLANTS, for 24 ROSES (Amateurs and Nurserymen). For Schedules of Prizes, &c., apply to

J. OLDMAN, Esq., Hon. Sec., Huntingdon.

NOTTINGHAM and MIDLAND COUNTIES GRAND ROSE SHOW and HORTICULTURAL EXHIBITION (Open to all England) will be held at the Arboretum, Nottingham, on THURSDAY, FRIDAY, SATURDAY, and MONDAY, July 6, 7, 8, and 10. The Mayor of Nottingham President. Prize List amounting to upwards of £600. Space will be allotted for the Exhibition of Horticultural Implements and Garden Furniture. Medals and Certificates of Merit awarded.

Schedules are now ready, and may with particulars be obtained on application to

Municipal Offices, Nottingham. ALFRED KIRK.

SANDOWN PARK CLUB. GRAND FLOWER and FRUIT SHOW.

A GRAND FLOWER and FRUIT SHOW, under distinguished Patronage, will be held in Sandown Park, Esher, Surrey, on FRIDAY and SATURDAY, July 7 and 8, when upwards of £350 will be given in Prizes. Schedules are now ready, and may be had on application to

JOHN WILLS, Royal Exotic Nursery, Onslow Crescent, South Kensington, S.W.

J. WHITTAKER BUSHE, General Manager.

BRISTOL, CLIFTON, and WEST of ENGLAND ROSE and STRAWBERRY SHOW. POSTPONEMENT of DAY.

The ROSE and STRAWBERRY SHOW, fixed to be held in the Zoological Gardens, Clifton, on TUESDAY, July 4, is POSTPONED to THURSDAY, July 13, 1876.

Schedules of Prizes, with rules and regulations, may be obtained of the Gatekeepers, at the Gardens; or by letter addressed to the Secretary, Zoological Gardens, Clifton.

SHROPSHIRE HORTICULTURAL SOCIETY.—The ANNUAL EXHIBITION will be held in The Quarry, Shrewsbury, on WEDNESDAY and THURSDAY, August 16 and 17. PRIZES amounting to about £230, including for 12 Stove and Greenhouse Plants, £15, £10, and £8. Schedules and all particulars from the Hon. Secs., Messrs. ADNITT AND NAUNTON, Shrewsbury.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION, for the relief of decayed Farmers, their Widows and Orphans.

Patron—HER MAJESTY THE QUEEN.

President—His Grace the Duke of RICHMOND AND GORDON.

Allowances to Pensioners:—

Married	£40 per annum.
Male	20 ,,
Widows and unmarried Orphan Daughters	20 ,,

Every information to be had of the SECRETARY, by whom Subscriptions and Donations will be thankfully received.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.—The ANNUAL GENERAL MEETING will be held at Willis's Room, St. James's, on WEDNESDAY, June 21, at 11 o'Clock precisely; and the ELECTION of PENSIONERS will take place on the same day at 11.30 o'Clock.

All Subscriptions shall be deemed payable on January 1 in each year; and no Contributor shall vote in respect of an Annual Subscription while the same is in arrear.

Offices of the Institution—

No. 26, Charles Street, St. James's, London, S.W.

Edinburgh, June 6, 1876.

To MR. R. T. MACKINTOSH,
12, Melbourne Place,
Secretary of the Scottish Seed and Nursery Trade Association.

SIR,—We the undersigned hereby request you to CALL a MEETING of the MEMBERS of the ASSOCIATION on an early date to consider some most important matters relative to the Seed Trade of the Country, especially the working of the Seed Adulteration Act, and some better means of enforcing its provisions.—We are, yours faithfully,

(Signed) DAVID ROUGHEAD, Chairman;
DAVID SYME, Manager of Lawson Seed Co.;
MUIR CRAWFORD, Seed Merchant, Leith;
Members of Sub-Committee.

GENTLEMEN,—In terms of the above requisition, I hereby CALL a MEETING of the MEMBERS of the ASSOCIATION, to be held within the HALL of the CHAMBER of COMMERCE, 11, Melbourne Place, Edinburgh, on WEDNESDAY, the 14th instant, at 3 o'Clock P.M.—I am, Gentlemen, your obedient servant,

R. T. MACKINTOSH, Secretary.

Verbenas, Verbenas.

JOHN SOLOMON offers the following good, strong plants, well hardened and established in single pots:—
VERBENAS, scarlet, purple, white, and other mixed sorts, 12s. per 100; GERANIUMS, Vesuvius, Silverleaf, and Flower of Spring, £1 per 100; CALCEOLARIAS, best bedding yellows, 12s. per 100; LOBELIAS, speciosa, pumila, and Blue King, 12s. per 100, all true, from cuttings; HELIOTROPES, best bedding sorts, 12s. per 100 Package included.
Cash to accompany all orders.
Islington Nursery, Park Street, Islington, N.

NEW STRIPED ROSE—BEAUTY OF GLAZENWOOD.—"A Rose of golden-yellow, striped and flaked with scarlet or vermilion, sounds like a dream or a fairy tale. It is nevertheless a reality." H. CURTIS, in the *Garden*. Full particulars free by post.
LEWIS WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

LILIUM AURATUM.—Strong healthy plants with bloom-buds, in 6-inch pots, 12s. to 18s. per dozen, cheaper per 100.
ISAAC DAVIES, Brook Lane Nursery, Ormskirk.

Spring Flowers—Sow Now.

MYOSOTIS ALPESTRIS NANA, M. A. NANA ALBA, and M. SEMPERFLORENS—three charming Forget-me-nots, the former about 6 inches and the latter 9 inches high—profuse bloomers; 500 seeds of each free for 2s. 6d.
J. J. MARRIOTT, Highfield Nursery, Matlock.

DAHLIAS, 100 finest named exhibition, in 50 varieties, 20s; 50 in 25 varieties, 10s. 6d.; 12 in 12 varieties, 4s., package free. Fine plants. No Catalogue. Cash must accompany all orders
THOMAS MILVER, Nurseryman, Bradford.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.
Mr. WEBB, Calcot, Reading.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

A. M. C. JONGKINDT CONINCK begs to offer:—
CROCUSES, DUC VAN THOLL TULIPS, LILIES, &c., at the lowest prices.
CRYTOMERIA JAPONICA, strong 1-yr. seedlings, 20s. per 1000.
Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

PYRUS MAULEI.—This hardy Japan fruit still continues to produce its gorgeous orange-scarlet flowers, with an abundant crop of fruit set at the same time. The distinct character and utility of this fruit must commend itself as a great favourite to every garden in Britain. Plants now sending out in pots, at 21s., 15s., and 10s. 6d. each.
WM. MAULE AND SONS, The Nurseries, Bristol.

Primulas, Primulas, Primulas.

WILLIAMS' superb strain, 1s. 6d. per dozen, 10s. per 100; package and carriage free. CINERARIAS, choicest assortment, same size and price. The above are quite equal to those I have sent out in previous years. Cash with order.
JOHN STEVENS, The Nurseries, Coventry.

LUCOMBE, PINCE AND CO.'S new CLEMATIS DEVONIENSIS. This is a most beautiful and distinct variety, obtained by crossing C. Jackmanni and C. lanuginosa. The flower is the brightest and most delicate azure, unusually large and well formed, robust in habit, perfectly hardy, and a very free bloomer. Will be sent out the first week in July. Price 21s. each. Terms to the Trade on application. Exeter Nursery, Exeter.

F. W. COOPER, SEEDSMAN and FLORIST, Huntingdon, begs to offer the following:—
GERANIUMS.—Scarlet: Frogmore, Tom Thumb, and Crystal Palace, in separate pots, 12s. per 100. Pink: Christine, 12s. per 100. Nosegay: Maid of Kent, very free, 12s. per 100. Violet Hill, 14s. per 100.
LOBELIA PUMILA MAGNIFICA, 10s. per 100.
MESEMBRYANTHEMUM CORDIFOLIUM, var., 10s. per 100.
ALTERNANTHERA PARONYCHIOIDES, 10s. per 100.
GOLDEN PYRETHRUM, 2s. 6d. per 100.
GNAPHALIUM LANATUM, 12s. per 100.
STELLARIA GRAMINEA AUREA, 8s. per 100.
ABUTILON THOMPSONIÆ, 2s. 6d per dozen.
FUCHSIAS, excellent spring-struck named plants, 20s. per 100.

NEW H.P. ROSE, TRIOMPHE DE FRANCE, strong plants, with from twelve to twenty joints, 2s. 6d. each.
Raiser's description:—"Beautiful bright carmine, of extra large size, very full, opening well, perfect form; a good and free bloomer, growth rather vigorous; a most distinct and grand Rose. This splendid variety has been exhibited as a seedling, received its name from the judges, who awarded it a gold medal £3 in value."
TEA ROSES.—MARIE GUILLOT, the best Exhibition White and the finest Tea Rose known, 2s. each.
PERLE DES JARDINS, the best perpetual blooming Exhibition Yellow, 2s. each.
JEAN DUCHER, most distinct and beautiful, 2s. each.
All by the dozen or 100. Price on application.
H. BENNET, Manor Farm Nursery, Stapleford, Salisbury.

DAVID LLOYD AND CO. (LIMITED).
CELEBRATED RED VEIN CONSERVATORY COAL.—This Coal is sent to all parts of England and Wales for use in Conservatories. It is of semi-anthracitic nature, IS ABSOLUTELY SMOKELESS, and the fires when made up will last for SIX HOURS, rendering NIGHT STOKING UNNECESSARY.
Testimonials and Prices on application to the COMPANY'S OFFICES, at Llanelly, South Wales, or to the following:—
J. T. RUBERY, 88, Rumford Place, Liverpool.
SUMMERS AND BOULTON, Dawley, Shropshire.
HORTON AND PERRY, Merchants, Wolverhampton.
THOMAS KNOWLES, Princess Road, Egbaston, Birmingham.
R. AND J. TAYLOR, 17, Vachel Road, Reading.
AGENTS WANTED.

Ferns.

W. AND J. BIRKENHEAD devote almost the whole of their attention to the Cultivation of BRITISH and EXOTIC FERNS. Their Collection consisting of many thousands, they are enabled to offer them by the dozen or hundred, at most reasonable Prices. CATALOGUES sent on application.
Fern Nursery, Sale, near Manchester.

New Zealand Native Shrub and Tree Seed.

GEORGE PURDIE AND CO. have always on hand an assortment of the above, carefully selected. Three and Five Guinea Collections, including the leading AUSTRALIAN GUMS and WATTLES, post-free to all parts of the World. All Orders must be accompanied by a remittance.
GEORGE PURDIE AND CO., Seed Merchants, &c., Timaru, Canterbury, New Zealand.

E. G. HENDERSON AND SON.
SEEDS EXTRA QUALITY
PRIMULA SINENSIS FIMBRIATA, 2s. 6d. and 5s. per packet
" " FLORE PLENA, 2s. 6d and 5s. per packet.
CINERARIA and CALCEOLARIA, 2s. 6d and 5s. per packet.
CYCLAMEN PERSICUM, choice quality, 1s. and 2s. 6d. per packet.
" " double-flowered, 2s. 6d. and 5s. per packet
Wellington Nursery, St. John's Wood, N.W.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000, and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.
Wonersh Nursery, Guildford, Surrey.

NEW AND CHOICE PLANTS

FOR 1876.

Carter's

CATALOGUE

OF THE ABOVE IS NOW READY,

And will be sent, gratis and post-free, to Purchasers.

THE QUEEN'S SEEDSMEN,

237 and 238, HIGH HOLBORN, LONDON, W.C.

Annual Exhibition of Rhododendrons at the Old Nurseries, Cheshunt, N.

MESSRS. PAUL AND SON respectfully invite an inspection of their artistically arranged Show of RHODODENDRONS.
By frequent trains of Great Eastern Railway, Liverpool Street, to Cheshunt Station, N.

Cheap Plants.—Cheap Plants.

WILLIAM BADMAN offers the following cheap plants for present potting:—
VERBENAS, Purple, White, Scarlet, Rose, Crimson, &c., rooted cuttings, 6s. per 100, 50s. per 1000; good plants from single pots, 1s. 6d. per dozen, 10s. per 100; twenty named sorts, 8s. per 100.
CALCEOLARIA, Golden Gem and Kayii Improved, 5s. per 100, 40s. per 1000; or strong established plants, 1s. 6d. per dozen, 10s per 100.
LOBELIA SPECIOSA (true), from cuttings, 3s. per 100, 20s. per 1000; good plants, from single pots, 1s. 6d. per dozen, 10s. per 100.
HELIOTROPIUM, finest dark, 6s. per 100; or large plants, 1s. 6d per dozen, 10s. per 100.
PELARGONIUMS, Vesuvius and Jean Sisley, scarlet; Madame Vaucher, fine white; Mrs. W. Paul and Blue Bell, pink; Waltham Seedling, fine bedding crimson; all good plants, from single pots, 1s. 6d. per dozen, 10s per 100; Master Christine, finest pink, 2s. per dozen, 15s. per 100.
" Gold-leaf: Crystal Palace Gem, good plants, 2s. per dozen, 15s. per 100.
" Silver-leaf: Flower of Spring, Bijou, Prince Silverwings (fine), 2s. per dozen, 15s. per 100.
" Tricolor: Mrs. Pollock, 2s. 6d. per dozen, 18s. per 100.
ALTERNANTHERA, magnifica and paronychioides, 6s. per 100, 50s. per 1000; amœna spectabile (finest), 8s. per 100, 1s. 6d. per dozen.
AGERATUM, Imperial Dwarf, blue, makes a fine bed, 1s. per 100; from single pots, 1s. 6d. per dozen, 10s. per 100.
IRESINE, Lindeni, crimson leaf, fine thing, 6s. per 100, 1s. per dozen.
COLEUS, Verschaffeltii, from store pots, 6s. per 100, or larger, 1s. 6d. per dozen, 10s per 100.
STELLARIA AUREA, new golden edging plant, 4s. per 100, 1s. per dozen.
CENTAUREA CANDIDISSIMA, silver-leaf, 3s. per dozen, 20s. per 100.
Package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

Bedding Plants.—Surplus Stock.

F. AND A. SMITH offer the undernoted, in extra strong plants, prices on application. Alternantheras amœna, magnifica and paronychioides; Calceolaria aurea floribunda; Centaurea candidissima, Cuphea platycentra, Dahlias; Geraniums, Crystal Palace Gem, Silver variegated, Vesuvius, Bronze, and Tricolor; Heliotropium, Lantana, Lobelia Blue Stone and Turquoise; Mesembryanthemum, Nierembergia gracilis, Pentstemons, Petunias, Phloxes, Pyrethrum aureum, Tropæolums, Verbenas, &c.
The Nurseries, West Dulwich, S.E.

HENRY MAY begs to offer the undernamed new PELARGONIUMS, selected from many thousand seedlings, and guarantees them of sterling merit: 10s 6d. each, the set for 42s ready, in strong blooming plants—viz.:—
YORKSHIREMAN (May).—A brilliant variety, of robust habit, and most abundant bloomer; white centre, orange-rose lower petals, black top petals margined with carmine.
JOHN WILSON (May).—Very fine form, lower petals rosy-purple with maroon blotch; white centre, top petals maroon with rose edge.
RISING SUN (May).—Very bright and distinct, brilliant orange lower petals, maroon top petals with scarlet margin large white centre.
ATTRACTIVE (May).—Rose lower petals, upper petals bright rose, with distinct maroon spot on each petal, fine habit and free bloomer, extra.
LIVELY (May).—Light pink lower petals, top petals rose and maroon, pencilled like Hermit, but much superior; free and attractive.
HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

NEW and SELECT PLANTS, Post-free.—The following selections are very select and superb in each class; the Plants are well established, from single pots, and so packed as to ensure safe transit by post:—
FUCHSIAS, 12 new varieties of 1875, selected from the best, 4s.
" 12 select varieties of 1874, very fine, 3s.
" 12 varieties, best selected, of previous years, 2s.
HELIOTROPIUMS, 12 new and select varieties, fragrant, 2s. 6d.
GERANIUMS, Double, 12 new and select varieties, including George Sand, the largest and best double white, 6s.
" 12 select varieties of Zonals, 3s.
" 12 new varieties of Zonals of 1874, fine, 4s
" 12 new varieties of Zonals, selected from Pearson's, Bull's, Postans', Denny's, and Smith's, new varieties of 1875, very superb, 9s.
" Golden Bicolor, 12 select varieties, fine, 4s.
" Double, 12 new varieties of 1875, including Emily Laxton and the new striped variety, 9s.
VERBENAS, 12 very select varieties, show, fine, 2s.
LANTANAS, 12 very select varieties, free blooming, 2s 6d.
PHLOXES, 12 superb varieties, hardy perennial, fine, 3s.
PENTSTEMONS, 12 very select varieties, extra fine, 4s.
LOBELIAS, 12 fine dwarf, in six fine varieties, 2s.
MIMULUS, Henderson's new large-flowered, 12 superb varieties, 6s.
FERNS, Greenhouse, 12 select varieties, very fine, 6s.
GREENHOUSE PLANTS, 12 fine varieties, very select, 6s.
STOVE PLANTS, 12 select varieties, extra fine, 9s.
TREE CARNATIONS, 12 fine varieties, winter blooming, 6s.
VICTORIA DAISIES, new, 12 superb varieties of 1875, fine, 6s.
" 6 first varieties, 2s.
PELARGONIUMS, 6 new varieties, perpetual blooming, 4s.
" Zonal, 6 fine varieties, new, striped, fine, 4s.
HERBACEOUS LOBELIA, 6 select varieties, tall, hardy, 3s.
HERBACEOUS MIMULUS, 6 select varieties, tall, hardy, 2s.
POMPON and JAPANESE CHRYSANTHEMUMS, 12 select varieties, large flowered, 2s. 6d.
COLEUS, 12 select new varieties of 1875, fine, 3s.
" 12 very select varieties, older, superb, 2s.
PELARGONIUMS, Cape, 12 fine varieties, sweet-scented, 4s.
IVY-LEAF GERANIUMS, 12 fine varieties, including the new double variety, Konig Albert, 5s.
BOUVARDIAS, 12 fine varieties, winter blooming, 6s.
SEDUMS, Rock Plants, 12 select varieties, hardy, 2s 6d
SAXIFRAGES, Rock Plants, 12 select varieties, hardy, 2s. 6d.
PELARGONIUMS, Fancy and French, 12 select varieties, show, 6s.
AGERATUM, Duchess of Edinburgh, the best dwarf blue bedder yet produced, 12 new, 3s.
All the above sent post-free, in good plants, from
B. W. KNIGHT, Florist, Battle, Sussex.

Pelargoniums, Bedding and other Plants.
All established in single pots.

WOOD AND INGRAM beg to offer:—
PELARGONIUMS, Golden Tricolor, J. D. Bassett, Macbeth, Miss Batters, 6s. per dozen; Peter Grieve, 9s. per dozen; Louisa Smith, Mrs. Dix, Pre-eminent, 4s. per dozen; Queen Victoria, Sir R. Napier, Countess of Craven, Sunset, 4s. per dozen; Sophia Dumaresque, 3s. 6d. per dozen.
" Silver Tricolor, Prince Silverwings, 3s. per dozen.
" Bronze and Gold, The Dragon, 3s. per dozen; Perilla, 3s. per dozen; Prima Donna, 4s. per dozen.
" Crystal Palace Gem, 18s. per 100; Vesuvius, 18s. per 100 Master Christine, 20s. per 100.
COBŒA SCANDENS, 4 feet, 1s. each.
" " VARIEGATA, 1s. 6d. each.
AGERATUM, Imperial Dwarf, 2s. per dozen, 14s. per 100.
ALTERNANTHERA, sorts, 2s. per dozen, 14s. per 100.
CINERARIA MARITIMA, 2s. per dozen, 14s. per 100.
" CANDIDISSIMA, 2s. per dozen, 14s. per 100.
GNAPHALIUM LANATUM, 2s. per dozen, 14s. per 100.
" " VARIEGATUM, 2s. per dozen, 14s. per 100.
IRESINE HERBSTII, 2s. per dozen, 14s. per 100.
LOBELIAS, best varieties, 2s. per dozen, 14s per 100.
MESEMBRYANTHEMUM CORDIFOLIUM, 2s. per doz. 14s per 100.
CALCEOLARIA AUREA FLORIBUNDA, 2s. 6d. per dozen, 18s. per 100.
PETUNIAS, of sorts, 2s 6d. per dozen, 18s. per 100.
SALVIAS, of sorts, 2s. 6d. per dozen, 18s. per 100.
COLEUS VERSCHAFFELTII, 2s. 6d. per doz., 18s per 100
LILIUM AURATUM, 1s. 6d to 5s. each.
ADIANTUM CAPILLUS-VENERIS, 8s. per dozen.
ASPLENIUM MARINUM, 9s. per dozen.
GAZANIA SPLENDENS, 2s. per dozen.
OREODOXA OLERACEA, in 5-inch pots, 2s. each, 18s per dozen.
SENECIO MACROGLOSSUS (Cape Ivy) 1s. each, 9s per dozen.
The Nurseries, Huntingdon

New Catalogue of Bulbs, Fruits, Plants, &c.

ROBERT PARKER begs to announce that his New CATALOGUE is now published, and will be forwarded to applicants. It contains Select Descriptive and Priced Lists of Alpine and Herbaceous Plants, Aquatic and Marsh Plants, Begonias, tuberous-rooted; Bulbs, Chrysanthemums, early blooming bedding varieties; Delphiniums, Ferns, hardy, greenhouse and stove; Fruit Trees, Grapes, Hardy Climbing and Wall Plants, Iris germanica, miscellaneous Bedding and Decorative Plants, Narcissus, Palms and Cycads, Pæonia sinensis, Phlox, herbaceous; Potentillas; Pyrethrums, double-flowered; Sweet Violets, &c.

Exotic Nursery, Tooting, Surrey, S.W.

Eupatorium riparia variegata.

RODGER McCLELLAND AND CO. are now sending out this charming Novelty. The whole plant is thoroughly variegated (somewhat after the manner of Abutilon Thompsoni) with creamy white, which occasionally covers nearly the whole of the leaf. The type is well known to be an exceedingly free-growing plant, and this is, as most variegated plants are, only a little less so. It will prove one of the most useful Bedding Plants ever introduced, and its hardy character, standing as it does in a cold house or frame during the winter, where frost is barely excluded, renders it a most useful subject for winter decoration. Price 5s. each, 48s. per dozen. The usual discount to the Trade. Also the following:—

	s.	d.	
ASTER ARGOPHYLLUS	2	6	each.
BALLOTA ACETABULOSA ..	3	6	,,
KLEINIA TROPÆOLOIDES ..	2	6	,,
OTHONNA CARNOSA	2	6	,,
,, CRASSIFOLIA	3	6	,,
PSORALEA BITUMINOSA ..	1	6	,,
TROPÆOLUM SPECIOSUM ..	6	0	per doz.

64, Hill Street, Newry.

BEDDING PLANTS, BEDDING PLANTS, &c., FLORIST'S FLOWERS and ROSES in pots for late planting:—

BEDDING GERANIUMS, Zonal and Nosegay, 16s. and 20s. per 100.
CALCEOLARIAS, LOBELIAS, AGERATUMS, 16s. per 100
BRONZE GERANIUMS, 24s and 28s. per 100.
ANTENNARIA TOMENTOSA, white carpet bedder, 1 inch high, 10s. per 100.
SEDUMS, SAXIFRAGES, SEMPERVIVUMS, for carpet bedding, the best, 10s to 16s per 100
DACTYLLIS GLOMERATA, fol. var., 4s. 6d per 100.
KLEINIA REPENS (the best blue foliage, 4 in. high), 3s. per dozen.
ECHEVERIA GLAUCA, 2s. per dozen.
SANTOLINA INCANA, fine silvery-grey foliage, 3s. per dozen.
VIOLAS, in bloom and showing, yellow, white, or purple, 1s 6d and 2s per dozen.
BEDDING PANSIES, 1s. 6d. and 2s per dozen.
PENTSTEMONS, PHLOXES, PANSIES, ANTIRRHINUMS, in pots, or turned out, 3s. per dozen, all first-class named sorts.
COLEUS, FUCHSIAS, SALVIAS, CHRYSANTHEMUMS, 3s. per dozen
GERANIUMS, for pot culture, fine new sorts, 4s. per dozen.
CLEMATIS, 15s per dozen.
ROSES, in pots, fine plants on Manetti, 12s. per dozen; on own roots, 15s per dozen.

CATALOGUES on application.

WM CLIBRAN AND SON, Oldfield Nursery, Altrincham.

NOTICE.

The American Plants at the Knap Hill Nursery are now in bloom,

AND MAY BE SEEN DAILY, SUNDAYS EXCEPTED.

The Nursery is near the Woking Station, where capital conveyances may always be had.

ANTHONY WATERER,

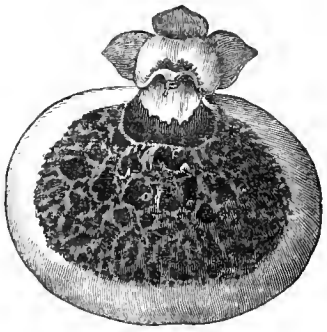
KNAP HILL NURSERY, WOKING STATION. SURREY.

DANIELS BROS.'

CHOICE SEEDS OF

FLORISTS' FLOWERS.

We have much pleasure in offering the following Choice Strains of Florists' Flower Seeds, which will be found of a very superior class:—



	Per packet—s.	d.
AURICULA, choicest mixed Alpine	1	0
CALCEOLARIA HYBRIDA, our own splendid strain, 1s. 6d. and	2	6
CARNATION, from stage flowers	2	6
,, Perpetual or Tree, choicest	2	6
CINERARIA HYBRIDA, very choice .. 1s. and	2	6
COLEUS, from the newest varieties	1	6
GLOXINIA, very choice mixed	1	6
PANSY, English, very choice	1	0
,, Fancy	1	0
,, King of the Blues	1	0
PENTSTEMON, from named flowers	1	0
PHLOX, choicest Perennial	1	0
PICOTEE, from stage flowers	2	6
POLYANTHUS, Gold-laced, very fine	1	0
PRIMULA SINENSIS, choicest fringed red	1	6
,, ,, ,, ,, white	1	6
,, ,, ,, ,, mixed	2	6
SWEET WILLIAM, Auricula-eyed, splendid, mixed ..	1	0

Mr. D. T. FISH, *writing of our strains of Calceolaria and Cineraria says*:—

"A word concerning your Calceolarias. Having seen some of the finest strains at the different shows, I have pleasure in stating that yours are equal to the best in size, colour, and variety of flowers, and their habit most compact; in fact, more uniformly dwarf than any I have seen. Your Cinerarias this season were also a most excellent strain—size, substance, and colour of flowers being all that could be desired, with a very dwarf habit."

From Mr. J. HANNIBALL, *Kingswood, Bristol.*

"We have a splendid show of Pansies and Sweet Williams, and they are the admiration of all who see them. Your Polyanthus also was first-class."

A fine assortment of choice Bedding Plants, &c., now on offer. Catalogues free on application.

DANIELS BROS.,

Seed Growers and Nurserymen,

ROYAL NORFOLK SEED ESTABLISHMENT,

NORWICH.

Calceolaria, Cineraria, and Primula.

F. AND A. SMITH can supply Seed of the above, saved from their well-known superb strain, in 1s., 2s. 6d., and 5s. packets. Terms to the Trade upon application. The Nurseries, West Dulwich, S.E.

FRANCIS & ARTHUR DICKSON & SONS.

106 Eastgate St. & The "Upton" Nurseries CHESTER.

Farm Seeds Extra Select

& of Unsurpassed Quality

Carriage Paid.

Illustrated Catalogue, Free.

THE

NEW PLANT and BULB COMPANY

BEG TO OFFER, IN FINE HEALTHY PLANTS,

DARLINGTONIA CALIFORNICA—The extremely rare and beautiful Pitcher Plant from California. Plants with five to seven pitchers.

PELLÆA ORNITHOPUS var. BRACHYPTRUM—An extremely rare and very beautiful Fern from California.

CHEILANTHES GRACILLIMA—A very elegant addition to this charming class of Ferns. Also from California.

DENDROBIUM WARDIANUM—The finest of all Dendrobes: fine plants recently imported and breaking freely.

ODONTOGLOSSUM CRISPUM (ALEXANDRÆ)—Fine plants recently imported and breaking freely.

The above are all at extremely low prices.

For particulars see SPECIAL LIST (No. 27), free on application.

LION WALK, COLCHESTER.

BEDDING PLANTS, &c.

LITTLE & BALLANTYNE,

THE QUEEN'S SEEDSMEN.

CARLISLE,

SOLICIT EARLY ORDERS FOR

DAHLIAS, HOLLYHOCKS, LOBELIAS, VERBENAS, FUCHSIAS, PELARGONIUMS, PANSIES,

AND

An extensive Assortment of Plants suitable for Beds and Borders,

INCLUDING THE

Best Varieties of Dwarf Variegated Plants and Succulents for Edgings, &c.

KNOWEFIELD NURSERIES, CARLISLE.

NEW BLUE FLOWERING ORCHID.

MR. J. C. STEVENS has received instructions from Messrs. F. SANDER & CO., to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, June 14, at Half-past 12 o'Clock precisely, the new and magnificent BOLLEA CŒLESTI, REICHENBACH, described in this week's *Gardeners' Chronicle*. M. Klaboch, M. Roezl's fortunate nephew and the discoverer of this importation, writes:—

"Many miles distant, the beauty of Odontoglossum cirrhosum being still before me, I once more return to the haunts of the blue marvel [M. Klaboch has repeatedly sent this Orchid home, but never before alive]. It is a magnificent and grand Orchid, and I know of no other so lovely and beautiful; its 4-inch large bright flowers are produced in great abundance, and on one plant alone which I sent home to you, you will find there were over forty flowers, and to see those fully expanded is the grandest sight imaginable. The 4 to 5-inch large flowers of this grand novelty are produced abundantly on long thick flower-stalks standing boldly off from the leaves; centre of the flowers light blue, shading off into dark purplish blue; the petals are often white-tipped, column blue, lip clear bright yellow and lilac."

Also about Thirty Lots, the entire quantity alive out of several cases, of ODONTOGLOSSUM VEXILLARIUM, found in a new and warm district; fine masses of SELENIPEDIUM HARTWEGII (?), Reich., sent home by Mr. Wallis—a grand variety, with nine to twelve flowers on a spike; fine healthy plants of ONCIDIUM WELTONI, O. KRAMERIANUM, SELENIPEDIUM ROEZLII, O. PAPILIO, O. SUPERBIENS, and the entire stock of a White BATEMANNIA, discovered by Mr. Wallis. Flowers and Drawings will be shown on the day of Sale.

ON VIEW THE MORNING OF SALE, AND CATALOGUES HAD.

H. WALTON begs to thank his numerous Friends, who have favoured him with orders for Show and Fancy PELARGONIUMS from previous Advertisements, and, as he has still a few hundreds left, he will include several fine fringed varieties, 25 plants for 21s., 55 plants, 42s., package included.

TUBEROUS ROOTED BEGONIAS.—H. W. offers strong established plants of the following varieties:—Boliviensis, Chelsoni, Hermine, Lady Adair, Mrs. Masters, Professor T. Dyer, Rubra superba, Vesuvius—the eight varieties 22s. 6d., package included. Catalogues free on application.

Edgend, Brierfield, near Burnley, Lancashire.

HOWCROFT AND WATKINS (late Charlwood & Cumminsi), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of

WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

TREE FERNS.

THE LARGEST AND BEST STOCK IN EUROPE.

WILLIAM BULL, F.L.S.,

Respectfully invites the Nobility and Gentry to an inspection of the above, also of his

MAGNIFICENT SPECIMEN ORNAMENTAL PLANTS,

Adapted for the decoration of Conservatories and Greenhouses, or suited for Sub-tropical Gardening.

ESTABLISHMENT FOR NEW AND RARE PLANTS, KING'S ROAD, CHELSEA, LONDON, S.W.

OSBORN & SONS

BEG TO ANNOUNCE THAT THEIR DESCRIPTIVE

CATALOGUE OF PLANTS

Is now ready, and will be forwarded, post-free, to all applicants.

IT CONTAINS A

SELECT LIST OF STOVE AND GREENHOUSE PLANTS

(including Novelties),

FERNS (British and Exotic), AZALEAS, CAMELLIAS, &c.

THE NURSERIES, FULHAM, LONDON, S.W.

INTIMATION.

J. S. IRELAND, formerly Manager of Messrs. THOMAS METHVEN & SONS' Seed Department, Princes Street, Edinburgh, and D. W. THOMSON, from Messrs. VEITCH & SONS' Royal Exotic Nursery, Chelsea, S.W., have formed a COPARTNERY under the designation of

IRELAND & THOMSON,

For the purpose of carrying on a General Nursery and Seed Trade.

From the experience they have had in their several departments they hope to merit a share of the patronage of their Friends and the Public.

NURSERIES: CRAIGLEITH, COMELY BANK;
SEED WAREHOUSE: 20A, WATERLOO PLACE, } EDINBURGH.

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NORFOLK IRONWORKS, NORWICH.

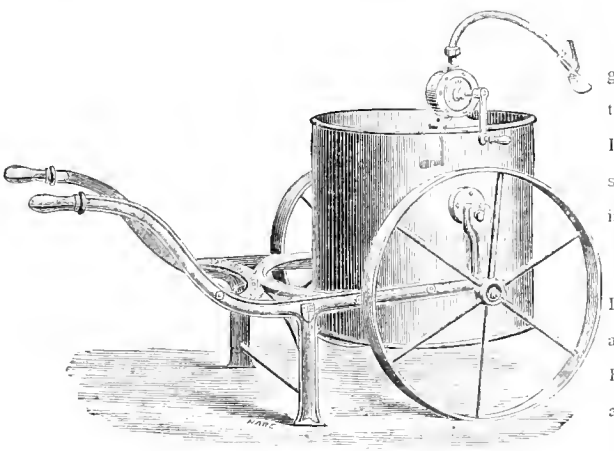
GREATEST NOVELTY OF THE SEASON.

PATENT ROTARY PUMP.

Hitherto unsurpassed in action by any other Pump.

Throws a continuous stream from 40 to 50 feet.

Is very simple in construction, and can be worked by a child.



This Pump is generally sold attached to our Water Barrows, but can be supplied separately if desired.

Illustrated Price List of above, with all other Garden Furniture, free on application.

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TWELVE BEST NEW FRENCH ROSES for 18/0 on receipt of Post office Order for 27s. 6d.

TWELVE BEST TEA and NOISETTE ROSES on receipt of Post-office Order for 21s., 24 for 40s.

The Plants are all exceedingly healthy and vigorous.

EWING AND COMPANY, Eaton, Norwich.

TO THE TRADE ONLY.

YUCCA VARIEGATA, 36s. to 42s. per dozen.
" " fine specimens, 7s. 6d. to 21s. each.
EUCHARIS AMAZONICA, 15s. per dozen.
NEPHRODIUM MOLLE CRISTATUM, 24s. per dozen.
LASTREA FELIX-MAS, CRISTATA, 9s. per dozen.
SPIRÆA JAPONICA, splendid plants in bud, 30s. per 100.
AUBRIETIA PURPUREA, 15s. per 100.
LILIUM AURATUM, very strong, in pots, 18s. to 24s. per doz
" " four bulbs in each pot, 60s. per dozen.
POLYSTICHUM SETOSUM, 9s. per dozen.
W. RUSHFORTH, Nurseryman, Woodhouse Hill, Leeds.

COCOA-NUT FIBRE REFUSE, as supplied to H.R.H. the Prince of Wales, the Emperor of Germany, Messrs. Veitch & Co., and thousands of Nurserymen, Gardeners, &c., IS INVALUABLE for Forcing and Plunging, a wonderful incentive to growth of Flowers, Vegetables, &c. 20 bushels, 6s. 8d.; 50 for 12s. 6d., truck, 45s.; sample bag, 2s. 6d.; 20 bushels and upwards free on to rail or within 5 miles.

ABBOTT AND CO., 80, Bishopsgate Street Without, E.C., Manufacturers of Cocoa-nut Fibre, Mats, and Matting, at Eagle Steam Works, Hatcham Road, Old Kent Road, S.E. Importers of Russia Mats, Raffia Fibre, &c.

Price LISTS on application.

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality, for Orchids, Stove Plants, &c., 46 6s. per truck.

BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, New Holland Plants, 17s. per ton.

Delivered on rail at Blackwater, S. E. R., or Farnborough, S. W. R., by the truck-load. Sample sack, 5s. 6d. each.

Fresh SPHAGNUM, 10s. 6d. per sack.

WALKER AND CO., Farnborough Station, Hants

BELL'S MILDEW COMPOSITION, as used by them for the last twenty-five years at their "HORTICULTURAL ESTABLISHMENT, BRACONDALE," their "NURSERIES, LAKENHAM," and "VINERIES, THORPE HAMLET," consisting of over 30,000 feet of glass. Retail, 1s. 6d. and 2s. 6d. per bottle, of the Sole Manufacturers,

BELL AND SON, 10 and 11, Exchange Street, Norwich.

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.

Sold Retail by Seedsmen, in boxes, 1s., 2s., and 10s. 6d. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

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TOBACCO PAPER, CLOTH, and CORD.

Particulars on application,

CORRY & SOPER,
BONDED TOBACCO STORES, SHAD THAMES, LONDON, S.E.

FRENCH COLD GRAFTING WAX (Mastic L'homme Lefort).—Widely celebrated as the best and most easily applied substance for Budding, Grafting, &c. Always ready for use. Tins, 6d., 1s., 2s., 4s., and 9s. each. Wholesale and Retail of

HOOPER AND CO., Covent Garden, London, W.C.

RUSSIA MATS, for Covering Garden Frames.—ANDERSON'S TAGANROG MATS are the cheapest and most durable. Price List, which gives the size of every class of Mat, forwarded post-free on application.

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RUSSIA MATS.—A large stock of Archangel and Petersburg, for Covering and Packing. Second sized Archangel, 10os.; Petersburg, 60s. and 80s.; superior close Mat, 45s., 50s., and 55s.; packing Mats, 20s., 30s., and 35s. per 100; and every other description of Mat at equally low prices, at

J. BLACKBURN AND SONS, Russia Mat and Sack Warehouse, 4 and 5, Wormwood Street, E.C.

DICK RADCLYFFE AND CO. supply every Sundry for the Wholesale Trade: VIRGIN CORK by the cwt. or ton, lowest prices; GARDEN LABELS and STICKS, cheaper than any; BARHAM POT DRAINERS; METAL and IMMORTELLE WREATHS; BOUQUET PAPERS. Wholesale Lists on application.

FLORETENS or WALL POT HOLDERS.—We have the entire right of manufacture of this article, and none are genuine unless made by us. We caution any one against infringing our rights.

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ROYAL HORTICULTURAL SOCIETY.

GREAT SUMMER SHOW, JUNE 7 & 8, 1876.

AWARDS OF THE JUDGES.

CLASS 1.—12 STOVE or GREENHOUSE PLANTS, in flower, distinct (Amateurs.)
1st, Mr. J. Child, Gr. to Mrs. Torr, Garbrand Hall, Ewell, Surrey, £15.
2d, Mr. G. Wheeler, Gr. to Sir F. H. Goldsmid, Bart., M.P., St. John's Lodge, Regent's Park, £10.

CLASS 2.—9 STOVE or GREENHOUSE PLANTS, in flower, distinct. (Nurserymen.)
1st, Messrs. T. Jackson & Son, The Nurseries, Kingston, £10.
2d, Mr. B. S. Williams, The Nurseries, Upper Holloway, £6.

CLASS 4.—Group of STOVE and GREENHOUSE PLANTS, arranged for effect, and not occupying more than 300 square feet. (Open.)
1st, Mr. J. Wills, Royal Exotic Nursery, South Kensington, £10.
2d, Mr. J. Aldous, Florist, &c., Gloucester Road, South Kensington, S.W., £7.

CLASS 5.—12 ORCHIDS, distinct. (Amateurs.)
1st, Mr. H. Heims, Gr. to F. H. Philbrick, Esq., Q.C., 28, Avenue Road, Regent's Park, N.W., £12.

CLASS 6.—12 ORCHIDS, distinct. (Nurserymen.)
1st, Mr. B. S. Williams, £12.
2d, Messrs. T. Jackson & Son, £8.
3d, Mr. W. Bull, King's Road, Chelsea, S.W., £4.

CLASS 7.—6 ORCHIDS, distinct. (Amateurs.)
1st, Mr. J. G. Hepburn, Esq. (J. Loveman, Gr.), Sidcup Place, Kent, £6.
2d, Mr. H. Heims, £3.
3d, Mr. J. Child, £2.

CLASS 8.—12 NEW PLANTS (Orchids excluded), in or out of commerce; those in commerce sent out in 1874, 1875, or 1876. (Open).
1st, Mr. W. Bull, £6.
2d, Mr. B. S. Williams, £4.

CLASS 9.—8 GREENHOUSE AZALEAS, distinct. (Nurserymen.)
1st, Mr. C. Turner, Royal Nursery, Slough, £8.
2d, Mr. J. Wills, £6.

CLASS 10.—6 GREENHOUSE AZALEAS, distinct. (Amateurs.)
1st, Mr. J. Child, £6.
2d, Mr. A. Ratty, Gr. to R. Thornton, Esq., The Hoo, Sydenham Hill, £4.
3d, Mr. G. Wheeler, £3.

CLASS 11.—9 ERICAS, distinct. (Open.)
1st, Mr. G. Wheeler, £6.

CLASS 12.—6 ERICAS, distinct. (Amateurs.)
1st, Mr. G. Legg, Gr. to S. Ralli, Esq., Cleveland House, Clapham Park, S.W., £5.
2d, Mr. G. Wheeler, £4.

CLASS 14.—20 FINE-FOLIAGE PLANTS, in pots not exceeding 12 inches in diameter. (Open.)
1st, Mr. W. Bull, £7.
2d, Messrs. H. & G. Wright, The Nurseries, Turner Road, Lee, S.E., £6.
3d, Mr. B. S. Williams, £3.
Equal 3d, Mr. J. Wills, £3.

CLASS 15.—9 SHOW PELARGONIUMS, distinct, in pots, not exceeding 8 inches in diameter. (Nurserymen.)
1st, Mr. C. Turner, £9.
2d, Messrs. Dobson & Son, Woodlands Nursery, Isleworth, £6.

CLASS 16.—9 SHOW PELARGONIUMS, distinct, in pots not exceeding 8 inches in diameter. (Amateurs.)
1st, Mr. J. James, Gr. to W. F. Watson, Esq., Redlees, Isleworth, £9.
2d, Mr. A. Ratty, £6.

CLASS 17.—6 FANCY PELARGONIUMS, distinct, in pots not exceeding 8 inches in diameter. (Nurserymen.)
1st, Messrs. Dobson & Son, £3.
2d, Mr. C. Turner, £2.

CLASS 18.—6 FANCY PELARGONIUMS, distinct, in pots not exceeding 8 inches in diameter. (Amateurs.)
1st, Mr. J. James, £4.

CLASS 20.—9 FINE-FOLIAGE PLANTS, distinct. (Amateurs.)
1st, Mr. G. Legg, £9.
2d, Mr. J. Harrow, Gr. to H. Bessemer, Esq., Denmark Hill, Camberwell, S.E., £6.

CLASS 21.—6 STOVE or GREENHOUSE FERNS, distinct. (Amateurs.)
1st, Mr. G. Wheeler, £6.

CLASS 22.—4 TREE FERNS, large. (Nurserymen.)
1st, Mr. J. Wills, £7.

CLASS 23.—2 TREE FERNS, large. (Amateurs.)
1st, Mr. G. Wheeler, £3.

CLASS 24.—6 PALMS, distinct, large (Nurserymen.)
1st, Mr. B. S. Williams, £6. | 2d, Mr. J. Wills, £4.

CLASS 25.—4 PALMS, distinct. (Amateurs.)
1st, Mr. J. Harrow, £4. | 2d, Mr. G. Wheeler, £3.

CLASS 26.—6 CROTONS, distinct. (Open.)
1st, Mr. J. Harrow, £4.

CLASS 27.—12 DRACÆNAS and CORDYLINES, distinct. (Open.)
1st, Mr. W. Bull, £6. | 2d, Mr. J. Wills, £4.

CLASS 28.—6 NEW PLANTS (Orchids excluded), in or out of flower, exhibited for the first time in England. (Open.)
1st, Mr. W. Bull, £4. | 2d, Mr. B. S. Williams, £3.

CLASS 30.—12 AGAVES. (Open.)
1st, Mr. J. Croucher, Gr. to J. T. Peacock, Esq., Sudbury House, Hammersmith, W., £4.

CLASS 32.—6 CYCADS, distinct. (Open.)
1st, Mr. B. S. Williams, £4.

CLASS 33.—12 HARDY FERNS, distinct. (Amateurs.)
1st, Mr. J. Stone, Gr. to C. Walton, Esq., Manor House, East Acton, £3.
2d, Mr. J. James, £2.
3d, Mr. E. Jenkins, Gr. to L. Clarke, Esq., Hitherwood, Sydenham Hill, S.E., £1.

CLASS 34.—12 CLEMATIS, distinct. (Open.)
1st, Mr. M. Young, Milford Nurseries, Godalming, Surrey, £6.

CLASS 35.—20 ROSES, distinct, in pots not exceeding 8 inches in diameter. (Open.)
1st, Mr. C. Turner, £10.

CLASS 36.—12 ROSES, in pots. (Nurserymen.)
1st, Mr. C. Turner, £12.
2d, Messrs. Paul & Son, Old Nurseries, Cheshunt, £9.

CLASS 38.—48 ROSES, distinct, 3 trusses of each. (Nurserymen.)
1st, Mr. C. Turner, £6.

CLASS 39.—24 ROSES, HYBRID PERPETUALS only, distinct, 3 trusses of each. (Nurserymen.)
1st, Messrs. Paul & Son, £4.

CLASS 40.—24 ROSES, distinct, single trusses. (Nurserymen.)
1st, Mr. C. Turner, £3. | 2d, Messrs. Paul & Son, £2.
3d, Mr. S. Taylor, Alderbury Common, Salisbury, £1.

CLASS 41.—24 ROSES, distinct, single trusses. (Amateurs.)
1st, Mr. J. W. Chard, Gr. to Sir F. Bathurst, Bart., Clarendon Park, Salisbury, £4
2d, Mr. J. Tranter, Upper Assenden, Henley-on-Thames, £3.

CLASS 42.—12 ROSES, distinct, single trusses. (Amateurs.)
1st, Mr. J. Voce, Gr. to A. Williams, Esq., Church Fields, Salisbury, £2.
2d, Mr. H. W. Warren, Gr. to the Right Hon. the Earl of Portsmouth, Hurstbourne Park, Hants, £1 10s

CLASS 43.—2 QUEEN PINE-APPLES. (Open.)
1st, Mr H. Plummer, Gr. to R. Thornton, Esq., Cannon Hill Park, Merton, £2.
2d, Mr. T. W. Bond, Gr. to G. A. Smith, Esq., The Beeches, Weybridge, £1 10s.
3d, Mr. H. W. Ward, Gr. to the Earl of Radnor, Longford Castle, Salisbury, 15s.

CLASS 45.—1 PINE-APPLE, any other kind. (Open.)
1st, Mr. H. Battram, Gr to R. T. Crawshay, Esq., Cyfarthfa Castle, Merthyr Tydvil, £1.
2d, Mr. H. W. Ward, 15s.
3d, Mr. G. T. Miles, Gr. to Lord Carington, Wycombe Abbey, High Wycombe, 10s.

CLASS 46.—3 Bunches of BLACK HAMBURGH or FRANKENTHAL GRAPES. (Open.)
1st, Mr. H. W. Watren, £2.

CLASS 48.—3 Bunches of GRAPES, any other Black kind (Open.)
1st, Mr. J. Bolton, Gr. to W. Spottiswoode, Esq., Combe Bank, Sevenoaks, £2
2d, Mr. G. Holliday, Gr. to J. Norris, Esq., Castle Hill, Bletchingley, £1 10s

CLASS 49.—3 Bunches of MUSCAT OF ALEXANDRIA GRAPES. (Open.)
1st, Mr. J. Douglas, Gr. to F. Whitbourne, Esq., Loxford Hall, Ilford, £2
2d, Mr. P. Edwards, Gr. to W. B. Tristram, Esq., Fowley Liphook, Hants, £1 10s.

CLASS 50.—3 Bunches of BUCKLAND SWEETWATER GRAPES. (Open.)
1st, Mr. J. Douglas, £2.

CLASS 51.—3 Bunches of GRAPES, any other White kind. (Open.)
1st, Mr. J. Douglas, £2.

CLASS 53.—6 PEACHES, any kind. (Open.)
1st, Mr. J. Burnett, Gr. to Mrs. Hope, The Deepdeen, Dorking, £1 10s.
2d, Mr. W. Coleman, Gr. to Earl Somers, Eastnor Castle, Ledbury, £1.
3d, Mr. G. Sage, Gr. to Earl Brownlow, Ashridge Park, Great Berkhampstead, 15s.

CLASS 54.—6 NECTARINES, any kind. (Open.
1st, Mr. J. Holliday, £1 10s.
2d, Mr. W. Gardiner, Gr. to E. P. Shirley, Esq., Lower Eatington Park, Stratford-on-Avon, £1.

CLASS 56.—9 FIGS, any kind. (Open.)
1st, Mr. G. T. Miles, £1.

CLASS 57.—50 BLACK CHERRIES, any kind. (Open.)
1st, Mr. G. T. Miles, £1. | 2d, Mr. H. W. Warren, 15s.

CLASS 58.—50 WHITE CHERRIES, any kind. (Open.)
1st, Mr. G. T. Miles, £1. | 2d, Mr. H. W. Warren, 15s.

CLASS 59.—25 STRAWBERRIES, British Queen or Dr. Hogg. (Open.)
1st, Mr. J. Douglas, £1.
2d, Mr. W. Earley, The Gardens, Valentines, Ilford, E., 15s

CLASS 60.—25 STRAWBERRIES, Sir J. Paxton or President. (Open.)
1st, Mr. J. Douglas, £1. | 3d, Mr. H. W. Ward, 10s.
2d, Mr. J. W. Chard, 15s.

CLASS 61.—1 MELON, green or pale-fleshed. (Open.)
1st, Mr. W. Coleman, £1.
2d, Mr. J. Atkins, Lockinge Gardens, Wantage, 15s.
3d, Mr. G. Holliday, 10s.

CLASS 62.—1 MELON, scarlet-fleshed. (Open.)
1st, Mr. W. Saunders, Gr. to J. East, Esq., Longstock House Stockbridge, £1.
2d, Mr. W. Coleman, 15s. | 3d, Mr. T. W. Bond, 10s

Prizes Offered by Mr. W. Bull.

(CLASSES 63 to 65.)

CLASS 63.—12 NEW PLANTS introduced by Mr. Bull, and sent out for the first time since the commencement of 1873. (Amateurs.)
1st, Mr. G. Legg, Silver Cup, value £15 15s.

CLASS 64.—12 NEW PLANTS introduced by Mr. Bull, and sent out for the first time since the commencement of 1873. (Horticulturists.)
1st, Messrs. H. & G. Wright, Silver Cup, value £15 15s.
2d, Mr. B. S. Williams, Silver Cup, value £10 10s.

CLASS 65.—12 NEW PLANTS introduced by Mr. Bull, and sent out for the first time since the commencement of 1873. (Amateurs, who have not previously won any of Mr. Bull's Silver Cups.)
1st, Mr. C. Kann, Handcross Park, Crawley, Sussex, Silver Cup, value £15 15s.

Prizes offered by Messrs. J. Carter & Co.

CLASS 67.—4 Dishes of PEAS (50 pods to form a dish), to include Carter's Extra Early "Premium Gem," and Carter's "First Crop."
1st, Mr. W. G. Pragnell, Gr. to G. D. W. Digby, Esq., Sherborne Castle, Dorset, £3 3s.

Prizes offered by Messrs. Sutton & Sons.

CLASS 68.—6 Dishes of PEAS, distinct varieties (half a peck to comprise a dish), to include Sutton's "Emerald Gem," Sutton's "Bijou" Dwarf Wrinkled, and Sutton's "Ringleader."
1st, Mr. W. G. Pragnell, Silver Medal and £2 2s.
2d, H. W. Ward, Bronze Medal and £1 1s.

Miscellaneous.—Extra Prizes.

Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea S.W., for a Miscellaneous Group of Plants, Gold Medal.
Mr. M. Young, Milford Nurseries, Godalming, Surrey, for Group of Hardy Plants, Gold Medal.
Mr. J. Richards, Gr. to Baron L. de Rothschild, Gunnersbury Park, Acton, for Odontoglossum vexillarium, Gold Medal.
Mr. C. Turner, for a Group of Specimen Ivies, Silver Medal.
Mr. B. S. Williams, for a Group of Plants, Silver Medal.
Messrs. Osborn & Sons, The Nurseries, Fulham, S.E., for a Group of Ornamental Foliage Plants, Silver Medal.
Mr. R. Parker, Exotic Nursery, Tooting, for a Group of Plants Silver Medal.
Mr. C. E. Waters, Gr. to A. Mongredien, Esq., Forest Hill, S.E., for a Group of Herbaceous Calceolarias, Silver Medal.
Mr. J. Laing, The Nurseries, Forest Hill, S.E., for a Group of Ornamental-foliage Flowering Plants, Silver Medal.
Mr. F. R. Kinghorn, Sheen Nursery, Richmond, for a Group of Saxifraga nepalensis, Bronze Medal.
Messrs. Hooper & Co., Covent Garden, E.C., for Cut Flowers of Bulbous Plants, Bronze Medal.
Mr. G. T. Miles, for a Dish of Tomatos, Bronze Medal.

B. S. WILLIAMS'

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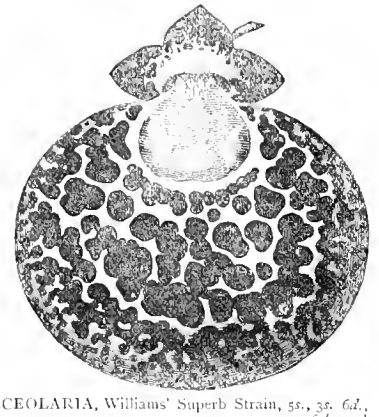
FLOWER SEEDS.

	Per Packet.—s. d.
AURICULA, saved from the finest show varieties ..	1 0
,, ALPINE, extra choice	1 0
BEGONIA FROEBELII (new). This is a new and distinct species	2 6
,, SEPENI SEMI-PLENA, a new semi-double flowering variety	2 6



CALCEOLARIA, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1 6
CARNATION, from choice double flowers, 5s., 3s. 6d., 2s. 6d. and	1 6
CINERARIA, Weatherill's Extra Choice Strain, 5s., 3s. 6d., 2s. 6d., and	1 6
CYCLAMEN PERSICUM, Williams' Superb Strain, 5s., 3s. 6d., 2s. 6d., and	1 6
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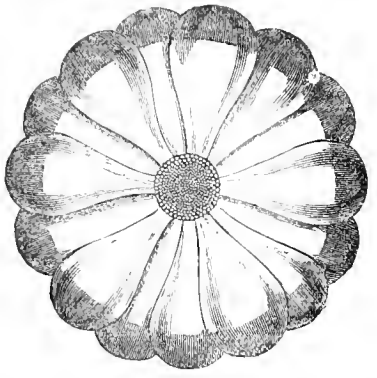

GLOXINIA, Finest Drooping Varieties	1 6
,, Finest Erect Varieties	1 6
HOLLYHOCK, from the best named flowers	1 0
PANSY, from finest Prize Flowers .. .. 2s. 6d. and	1 0
PICOTÉE, extra choice mixed	1 6
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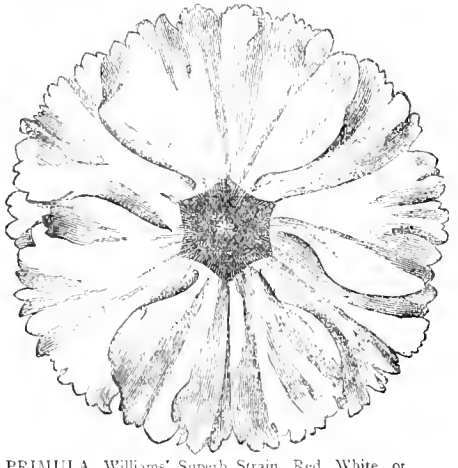

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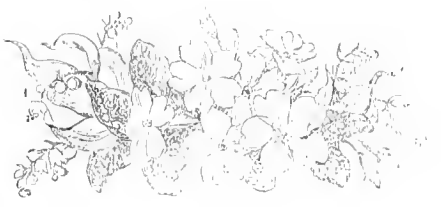

SATURDAY, JUNE 10, 1876.

THE RHODODENDRON.*

THE Rhododendron, under the forms presented by Messrs. Waterer's Exhibition, is one of the plants which, without saying anything irreverent, have positively been created by the skill of the florists of the nineteenth century. The aboriginal forms are coëval with the Lilies—with the Oak, the Palm, the Forget-me-Not, and everything else that existed in the beginning; while, however, the Lilies, &c., upon which to-day we look with pleasure, present, in all likelihood, the same complexion that their ancestors did thousands of years ago, the Rhododendron is seen in colours and even in shapes perfectly new.

Let us first glance at the meaning of the name. Literally, this signifies "Rose tree," the old Greek word *rhodon*, usually translated "Rose," having denoted fine red flowers in general, the genuine Rose and the Pomegranate blossom included. The ancients were not so exact as ourselves in botanical and floral discrimination; they were at all events more economical in the employment of their plant names, and often made a single term do duty for a dozen different things. The practice survives to some extent even into the critical times we call our own, for in the country we may hear the scarlet Corn Poppy called the Gipsy Rose, and a certain magnificent crimson Hibiscus is by gardeners called Rosa sinensis, or the China Rose. The second half of the word, *dendron*, with the ancient Greeks denoted primarily a tree—a tree of any description, and, in a more extended sense, a shrub or ligneous plant: a practice likewise continued by ourselves in such names as the Tree Pæony and the Tree Mallow. The compound term Rhododendron was first applied to the Oleander,† that splendid Levantine shrub which has leaves like those of the Almond tree, only firm, leathery, and evergreen, and bunches of large pink flowers at the end of every branchlet. The foliage of the Oleander being in some degree Laurel-like, in course of time this showy plant came to be designated the Rose Bay, which name was passed on, in turn, to the purple Rhododendron, and is retained for it in Loudon's *Arboretum*. There is no reason to believe that the original application covered anything besides the Oleander. It appears certain that no member of the modern genus Rhododendron was even so much as noticed by the ancients, unless possibly some attention may have been attracted to the plant familiarly known as the yellow Azalea, which in reality is a Rhododendron, allusion being made to the deleterious effects of the honey, in the famous account given by Xenophon of the homeward march of the 10,000 Greeks, say about four centuries B.C. During the whole of the long period which elapsed between the time of Pliny and that of Elizabeth, Rhododendron meant nothing more.

* By way of introduction to the Rhododendron Show now being held at Manley Park, Manchester, Mr Leo Grindon has written an historical account of the Rhododendron, and the changes imposed upon it by the hand of the gardener. From this account we have condensed the above article. Manley Park, it will be remembered, was formerly the residence of Sam Mendel, Esq., so well known in horticultural annals, and has now been converted by Mr. Slate, of Bowdon, and Mr. Milner, of Sydenham, into a recreation ground. In these grounds Messrs. John Waterer, of Bagshot, are now holding an exhibition of Rhododendrons similar to those which they used to hold in London, and Mr. Grindon's article has been prepared as an appropriate accompaniment.

† Pliny, book xvi., chap. 33.

But with the restoration of learning and the birth of modern science came a change. In the famous old *History of Plants* compiled by Cæsalpinus, and published at Florence in 1583, it was extended to those lovely little denizens of the Swiss mountains which still go by the name of the alpine Rose, the Rhododendron ferrugineum and the R. hirsutum of Linnæus, who, though he made so many changes, often ruthless, in the nomenclature employed by his predecessors, in this case allowed the name to stand. Under the influence of the great Swede everything in the way of nomenclature was rendered more exact, and in the middle of the eighteenth century Rhododendron became limited to the plants so-called at the present moment. It is interesting to look back upon the little alpine Roses, and to think in how small a rill commenced the fame which now pertains to the queen of flowering shrubs. They are scarcely more than a foot high, somewhat harsh and rude in foliage, but delicious in the plenty of their scarlet or crimson flowers. The hirsutum, the flowers of which are dotted with amber, was cultivated at Lambeth by the celebrated John Tradescant as early as 1656. Both are now very common in English gardens, though lost beneath the shadow of their splendid kindred. Upon the Alps these two little shrubs obtain the highest elevation above the sea-level which in Europe is reached by anything ligneous, and help, like the deep blue Gentians, to "make glad the solitary place."

About 120 years ago the favourite old Ponticum seems to have begun to attract the attention of gardeners. It is said to have been first cultivated in the neighbourhood of Gibraltar, and to have been introduced thence in 1763, though derived originally from south-western Asia. The province it there occupies extends from the shores of the Black Sea, through Armenia, to the western frontiers of Persia. The Ponticum is the well-known old purple Rhododendron, the plant so often found embellishing sylvan grounds that were laid out sixty or seventy years ago. How effective it becomes at Alton Towers, where, viewed across the valley, the flowers seem a delicate lilac surf tossed up by the waves of distant verdure, is known to every one who at Midsummer has made acquaintance with that charming place. It is the same which is so frequent in Manchester suburban gardens, consort, not infrequently, of a disconsolate Aucuba, and though covered with grime and soot, still blooming cheerfully: for the Rhododendron does not know what surrender means; the most happy-tempered of shrubs, it holds on when everything else has died of dismay.

In the course of the 18th century, several species were transmitted from North America. The first there discovered appears to have been the maximum, a native of Pennsylvania, and which attaining in the wild state the height of 16 feet, was innocently supposed to be the largest of the race. It is readily distinguished from the Ponticum by the under-surface of the leaves being rusty, and by the comparatively pale green of the entire plant. Next came the punctatum, the leaves of which are curiously dotted underneath, and which was introduced from Carolina towards 1785, and after this followed the Catawbiense, so named because especially abundant near the source of the river Catawba, a stream flowing at the base of the Alleghanies, though plentiful also on the mountains of Virginia. The height attained by this one seldom exceeds 4 feet; it is remarkably hardy and robust in constitution; the leaves are shortly oval, rounded at the base, and glabrous. In England, after 1809, the Catawbiense, which in flowers does not differ materially from the Ponticum, soon became, like the latter, extremely common.

(*To be continued.*)

LUNCHEON BASKET.

As you did not think the washing-stool (see p. 666) unworthy of the notice of your readers, you may also deem the enclosed sketch of a luncheon basket worthy of the attention both of the proprietors of the "Mugby Junction" refreshment-rooms and the customers thereof. Travelling some time since from Paris to Basle direct, a journey of some twelve or fourteen hours, my companion and myself were asked by one of the guards of the train at one of the stations if we intended to dine at Vésoul; if so, he would telegraph on to that effect. Thinking naturally that the object was simply to apprise the *restaurateur* of the number of persons who might be expected to partake of the *table-d'hôte* with which Continental travellers are familiar in the course of long railway journeys, we expected to alight in due course, and partake of the viands provided. On arriving at the station, however, behold a cook in white cap and apron hurrying along with a basket such as is here depicted, a small boy staggering along with another. The two baskets were hurriedly thrust into our carriage; it was explained that the "empties" would be called for at

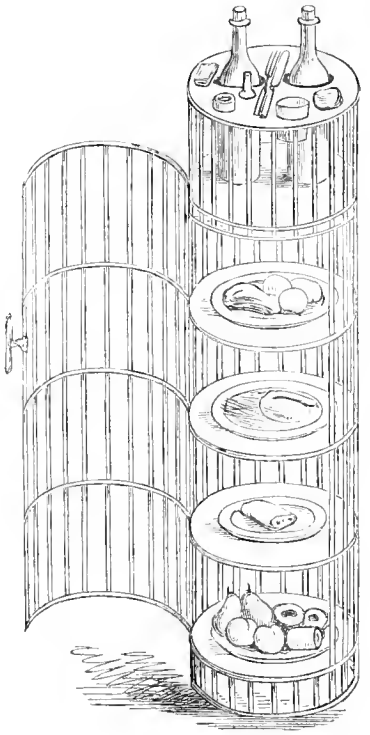

FIG. 135.—LUNCHEON EN ROUTE.

another station down the line, and all we had to do was to fall to. Securing the frail structure as best we could between our knees, we proceeded from above downwards to partake more or less of wine and water from the bottles on the topmost storey, went on to fish in the second storey, cutlet in the next, vegetables in the next, till we reached the dessert, consisting of cheese, and fruit at the bottom. So substantial a repast occupied some little time. Our appetites were, however, more than appeased before we arrived at the station, where the boy called for the empty plates. I can't pretend to measure other people's appetites by our own, but I would suggest that one basket for two people would probably be enough for most folk. The difficulty of keeping the basket in a state of stable equilibrium while the train is going at full speed adds more to the fun than to the comfort of the procedure, but an old traveller, accustomed to the discomforts of the way, will not be disposed to condemn this mode of passing the time on a dull route. *Rambler.*

BEGONIA ROYALTY.

THIS is one of the few acquisitions which we owe to the intercrossing of the tuberous Begonias, of which the introduction of B. boliviensis, B. Veitchii, and others was the starting point. The present variety was shown by Mr. Chambers at the meeting of the Royal Horticultural Society on October 7, 1874, and the stock has passed into the hands of Mr. Williams, by whom it is being distributed. It is of dwarf and free growth, and of branching habit, with green pale-ribbed leaves, and bears a profusion of very large orange-red flowers, which are as much as 4 inches across—the females nearly or quite as large as the males, and both of them of great substance, and lasting a considerable period in beauty. It was awarded a First-class Certificate, which it well deserved, when exhibited on the occasion above referred to. We are indebted to Mr. Williams for the illustration (fig. 136).

WANTED—THE LOST CONSTITUTION OF OUR ROSES.

UP to within a few years people planted Roses for a permanent crop. Only give them a fair soil, room to grow, and cut them in every season, in winter or early spring, and the Roses went on growing and blooming as summer succeeded winter and harvest seed-time. The old Cabbage never failed in its fulness or fragrance, the Maiden's Blush blushed with equal beauty every year, the dark Damask put on its velvet robes with unerring certainty, and the Provence and Moss Roses appeared in all their purity of colour and depth and greenness of fringe. As for the plants dying or becoming diseased it was never thought of, and, more to the purpose and pleasure of growers, it never happened. A few aphides came now and then to share or mar our delight in Roses, but a dash of strong soapsuds or tobacco-water made this sheer off to sweeter quarters; or a gentle nip between finger and thumb placed them beyond reach of our favourite Roses. As for weakness below or sudden death above—black mould or red rust slaying their thousands—such things were wholly unknown. My first experience of Roses was the produce of plants much older than myself; and visiting the "old house at home" some years since, I found the old Cabbage, Maiden's Blush, and Damask Roses still to the fore. Yes, the modern Roses go almost as fast as they come, but these old favourites grow on for ever, in comparison.

Is it that fragility and the highest beauty and sweetness are linked together by some law of Nature? It can hardly be so, for what Rose, even now, is more beautiful or more sweet than the common Moss or Cabbage, Provence, Damask, or Maiden's Blush? Or is it the Dog Rose that has failed in vital power and ability to adopt and sustain the modern beauties perched on its crown? Perhaps. Assuredly it has been shamefully treated. Torn from its sunny hedge-banks by thousands annually, often nearly all its roots left behind, its naked stumps tossed about anyhow, air-dried, frost-bitten, sent long distances in close packages, and then suddenly exposed, and planted in rich, it may be wet soil—as different as possible in every particular to that from which it was so roughly torn—it makes a few shoots, more in virtue of the organisable sap manufactured in its sunny, cosy, dry hedgerows, than because of any new roots that it has formed. These are budded and beheaded in due season, before the growth had time to re-establish the plant in its new quarters and conditions. The buds taken perhaps grow, and when the autumn comes this enfeebled plant is again lifted, perhaps transported into the Rose grower's garden. It seems all right, but nevertheless its constitution is so enfeebled that it is predisposed to disease, and its final and speedy death may surely be largely traceable to the above course of treatment. But then, what of seedling Briars? Why this: that they are a step in the right direction, and probably towards a sounder constitution. And were the whole end one of stocks, which it is not, seedling Briars for stocks would go a long way to remedy the constitutional debility of so many of our Roses.

But weakness comes also through the top as well as the bottoms of our Roses. I believe the rage for perpetual flowering Roses is partly responsible for it. With this object Tea blood has been too freely poured into our so-called perpetual Roses, to the undermining of their constitution. More than this, a Rose that flowers twice or more within the compass of our summer is necessarily more tender than a variety that flowers but once. We cut Roses say as late as October. It is practically impossible for the wood that produced such late Roses to be ripe before the frosts are upon it. The greenness of the wood renders it tender; for it cannot be too often repeated that

hardiness is a matter of condition more than of species. I have seen an Oak killed by the frost when it was in leaf; and of course Roses are equally or more sensitive to cold when it comes upon them in an immature state. Neither is this evil wrought by the frost on immature wood always or generally visible at the time. The plants seem to pass the winter unscathed, but they break weakly in the spring. This weakness invites aphides and other pests, especially the red rust, which is speedy destruction to Roses of enfeebled constitution. The modern practice of cutting back Roses through June and July, or even later, to force late flowers, intensifies the evils of immature wood. Were the old flowers merely taken off the shoots would break into new growth at their heads, and in the autumn or spring they might be cut back to mature wood—that is, the wood made for the first flowers in June. This might mitigate the evil, which, however, lies deep in the restless excitement of the blood, and this excitement has come through our anxiety to have all Roses perpetual flowerers, and consequently almost, also, perpetual growers; and nothing can be more certain than that continuity of growth means also constant liability to injury or destruction by a degree of cold that dormant plants would pass through uninjured.

Another cause of the loss of constitution and of longevity in our Roses arises, no doubt, from the forcing treatment to which most of them are subjected in a young state. The demand for new Roses is so urgent that all the most stimulating modes of increase are employed to supply it within the least paying time. Could our Roses write the history of their infancy—the constant cuttings and bud pickings and forcings to which they are subjected through the first few years of their lives—we would probably cease to wonder at their frequent breakdowns in after-life, or the difficulty of growing or keeping alive many of the finest varieties of Roses.

Finally, it is to be feared that constitution is not considered as it ought to be in the rearing of the Rose: size, colour, form, substance of flower are too often all that is most valued by the Rose raiser. Even fragrance has been a good deal sacrificed to these in many cases, though La France covers a multitude of sins in this respect by its unrivalled sweetness. But vigour and stability of constitution ought to be demanded as of the first importance in our new Roses. Why should we not have many more of the type of Baronne Prevost, which I cite as a model of constitutional strength? longevity. Other qualities are important, but this is essential, for the beauty of the Rose is becoming more fleeting as far as the individual lives of plants is concerned. Of a good many of them we can hardly say they are here still—they have died out. It is only in virtue of perpetual budding that we manage to keep them at all.

Doubtless a good deal might be done by selecting Roses for localities, and if growers would furnish lists of the sorts that thrive best with them there might be a hope of securing a good collection for most districts. But the fact is, Roses are mostly chosen on the exhibition tables. Growers and lovers of Roses go round, note-book in hand, and make out their lists from the beauties before them. The plants come home, are planted and treated quite differently to what they have been before, and the grand show flowers refuse to come, and the plants to live even, under their widely changed conditions. What is needed is a more intimate knowledge of the character of each Rose, and the physical and cultural conditions under which it arrived at such perfection; in a word, a knowledge of its constitution and previous culture. With that, and ability and skill to humour the one and imitate the other, there might be a chance of longer life and more robust health for our modern Roses. Still the cry is needed—for it has not yet been answered by hybridists or raisers of new varieties—Wanted: Better Constitutions for our Roses. *D. T. Fish.*

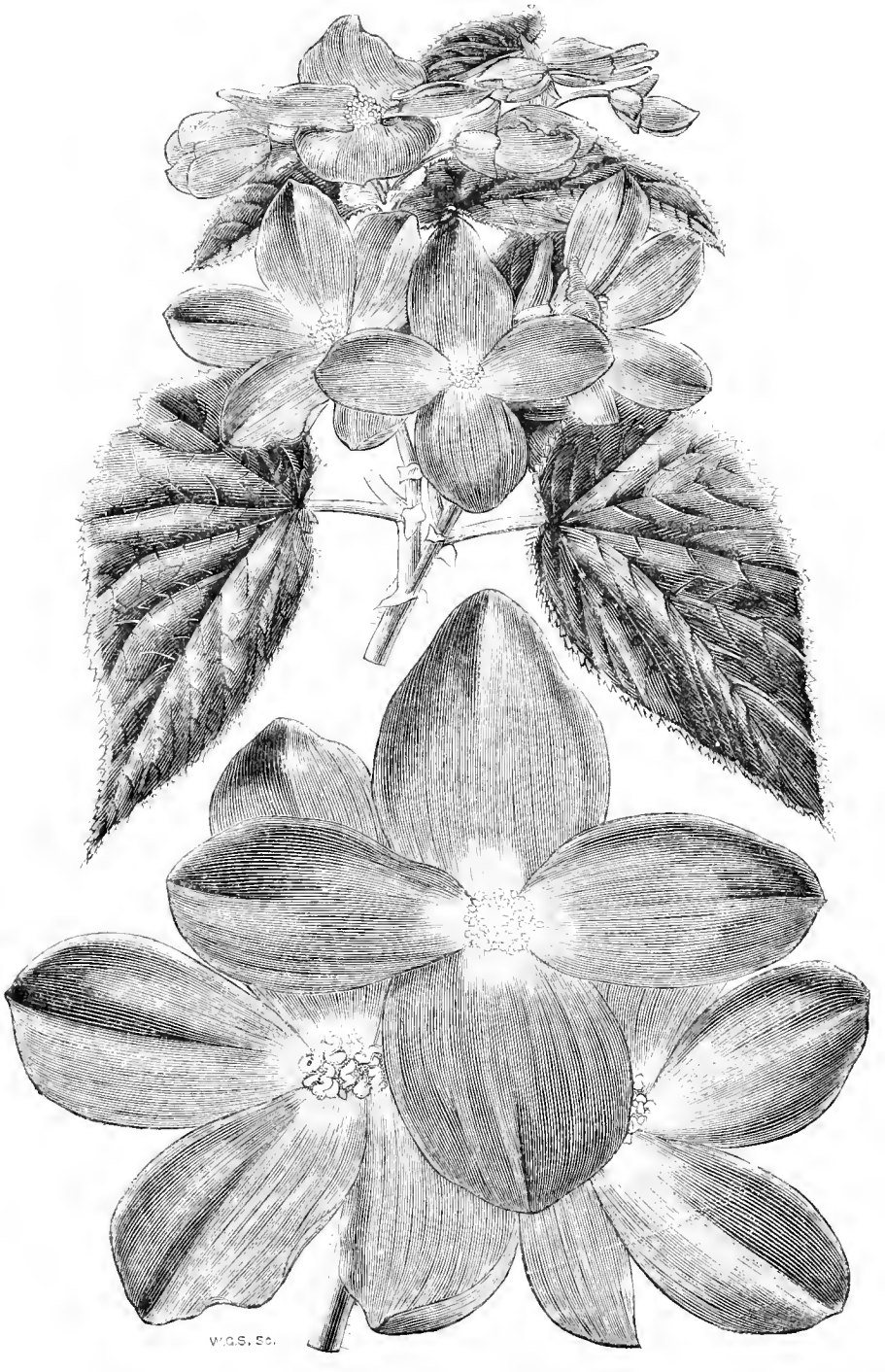

FIG. 136.—BEGONIA ROYALTY.

GARDEN ADJUNCTS.

WHERE garden grounds extend beyond just the space requisite for flowers or fruit and vegetable crops, the border land between the highly cultivated part and the more open scenery gives room for tasteful arrangements of many adjuncts—it may be for out-of-door gathering of the elders of the family, or out-of-door games of the younger branches—and the park glade, or sunny hillside, giving a view of some distant prospect, or an open lawn with a knot or two of trees conveniently near together, may sometimes be utilised for the comfort of the family, and so as to add very much at the same time to the picturesqueness of the scene. Taking only two out of many points, the comfortable out-of-door accommodation of guests is often a perplexing matter, for which possibly useful hints may be gleaned from districts abounding with scattered rocks; and another subject worth some consideration, from its very different adaptations, is the children's swing.

THE CHILDREN'S SWING.

A more graceful combination of healthy sport with picturesque surroundings can hardly be found than the arrangement of this as commonly seen in the country, fastened to a large arm of a tree, or slung between two neighbouring trunks, so that as the young folks fly to and fro beneath the branches they may enjoy the shimmering sunshine through the sheltering leaves, or the cool shadow from oppressive heat. With proper attention to requisite strength in the supporting bough and durability in the fastenings, it may be considered perfect.

Another arrangement which is not amiss where the large size of branch requisite for safe hanging is not procurable may be easily contrived by placing a stout beam across in the forked boughs of two trees, from which the swing may be hung, or by setting up two small trees (which can be bought as timber), cut back to forks at the requisite height, and laying a beam resting in these supports across at the top. This frame, with a few large stones at the foot, which may serve also as seats, and a few bushes close by, and perhaps a Honeysuckle, or strong climber of no special rarity trained up the woodwork (choosing something that would do no mischief by its prickly shoots, and will not get the young folks into trouble if they injure it), would look pretty, as well as serve its purpose thoroughly.

There is yet one form more, however, sometimes in favour in knots of villa residences, which, though

convenient, may surely without offence be said (picturesquely considered) to be truly frightful, resembling nothing in the world but a gigantic gallows, formed of squared beams, sometimes painted blue, and sometimes in its more ornamental varieties "parcel gilt." To simple flower and plant loving eyes there is no hope for this ornate form save in the quickest growth of Ivy that can be compassed. The simple massive frame, however, has the recommendation of great convenience, and if a few bushes were so placed as to blend its towering isolated height gradually with the surroundings, and if some climbers were added (especially if the top beam were lengthened a little so as to let the Ivy, or whatever it might be, hang down in festoons) the effect would not be ungraceful.

In itself the children's swing may seem of no great importance, but some consideration is due to it as a part of the garden grouping, and something more as to its mental effects on those most concerned. The young heads that fly to and fro are storing memories of the sunshine through the leaves, the shapes of the boughs, every change in the distant landscape, and every striking grouping near, and what is to them the happiest bit of their garden life, will leave its associations firmly fixed to come out again by-and-by in results of some kind. If these prove to be an appreciation and love of natural beauty, the swing will have worked well.

Garden Seats.

Where open lawns or glades amongst park scenery adjoining the garden are used as out-of-door gathering places for the family or friends in fine weather, there is often a difficulty in adapting the accommodation requisite for their comfort to picturesque and horticultural requirements also. It is all very well whilst the point of meeting is peopled, but afterwards the trodden turf, with no apparent reason showing for its injured state, is anything but ornamental. A disposition of things that may afford comfortable resting places temporarily, and which when unoccupied may group satisfactorily with scenes often uniting the natural and artificial beauties of park glades and distant prospects with highly kept garden ground close at hand, is hard to find.

Chairs fetched from the house sink into the turf, to the injury and annoyance of all concerned; ornamental seats usually look very unsatisfactory without occupants, and though trunks of felled timber are always picturesque, nobody can tell what may creep out of an old log: the comfort of the party has to be provided for in some way or other, and sometimes all points may be well met by a careful grouping of large pieces of (either real or imitative) roughly hewn and weather-worn old stones.

The size, number, and adaptation of the forms would of course be matters of taste, and a rocky beach or a stonemason's yard would be full of hints as to methods of grouping; or, passing on from the cromlech as an entirety in a reproduced state (as illustrated not long ago in the pages of the *Gardeners' Chronicle*, by Mr. Worthington Smith) to utilising the thrown down or scattered stones, as they may be seen along the Welsh border, an idea, a story as it were, would be given to the group, and a reason for a variety of shapes and thickness very convenient practically.

For a simple group, however, a very few roughly shaped stones, about the size of a common field gate-post, laid flat on the ground, and a couple more of different shape and height fixed upright, would make a picturesque group, and afford a few comfortable seats, or at least a dry and safe resting-place, which might be added to according to the special views of the occupant as to what comfort consisted in. Every imaginable shape and grouping might be arranged as fancy dictated, but in any case the stones should be firmly bedded in the ground to avoid all chances of the unpleasant additions to the party otherwise very likely to creep from beneath the solid shelter. The grey, weather-worn tint of the stones assimilates well with surroundings of any degree of picturesqueness, and also removes all idea of neglect from the appearance of the trodden sward. Their presence at once conveys a reason for the signs of traffic to and fro, and the eye ceases to require the velvet smoothness of the garden lawn. Short pieces of roughly squared Oak or Elm trunks smoothed on the upper surface answer the same purpose fairly well, but always with due regard being paid to holes and cracks suitable for wasps, snakes, and other additions probably welcome to a very small section of the joint occupiers.

A form copied from the square foot of an old cross, such as may still be seen remaining in rural churchyards, simply as a pedestal a foot or two in height, without the slightest ornament, has always a good effect if on a grassy slope. The grass on the higher side of the hill slopes on to the flat surface; the front has just the appearance of a large step gradually passing into the ground, and in its perfect simplicity, without any of the additional steps of former days above it to give a clue to its origin, it is a most convenient resting-place. For a more ornamental shape a hexagon step of perfectly plain stone, the older and greyer the better, with a somewhat upright "boulder" stone fixed by its own weight in the centre, gives a most comfortable rural seat, and judiciously placed as to situation groups well with any natural surroundings, and will perplex even a practised eye as to its date and origin.

It is hardly possible to imagine any combinations of natural scenery involving the presence of trees and grass, Ferns or mantling Ivy, with which the tints of stone softened by exposure to weather would not assimilate. The white limestone, or red sandstone, or mottled conglomerates fresh from the quarry or the hammer require careful management till their brilliant colours are toned down, but when once sobered, all that is needed is some reflection as to grouping them appropriately with their surroundings. The rough forms that are best on a woody bank blending with Fern and Ivy are unsuitable on the lawn, for the simple reason that they would not look well without the associated wild growths, and these are out of place on the smooth, well-trimmed grass carpet. Similarly, much ornamented stones are out of place in a simple rural scene, unless there is something in themselves to account for their presence. Probably their effect may depend on their whole surface being shown, and the care necessary for this would be out of keeping with natural surroundings, and in any case a satisfactory blending of purely artificial and purely natural groupings is matter of difficulty. The continuance of one idea throughout is a combination of great importance, and an example of this may be taken from the good effect in a Fir wood of rustic seats formed of Fir poles, simply cut into lengths, and laid side by side on a frame-work. They attract the eye similarly to the felled timber often seen heaped together beneath the standing wood, and the similarity of form and colour with the variety of position pleases the eye by its completeness, and the whole effect is satisfactory. In the same way the presence of worked stone near buildings (or where it may reasonably be supposed to have been placed), in scenes bearing tokens of design; or, again, natural forms of stone where stone might crop out naturally, please the mental perception as well as bodily eye, by their truthfulness as well as picturesqueness of grouping.

Some degree of thought should also be turned to the mechanical formation of the seats, for however ornamental they may be, if stray bits of wood or nails, splinters or jagged edges of stone, and similar unpleasantnesses are allowed to stick out, the result is bad; Fir-poles still running turpentine, rural sofas of gnarled Oak boughs annoying back and elbows with perfectly invincible corners, and stone seats sprinkled with sticks, rubbish, and live or dead moss, or scraps of every imaginable description, are far from agreeable, and, in politeness to guests, should always be kept under trustworthy superintendence. *O.*

THE LITTER OF WOODS.

The litter which accumulates in woods forms, it is known, the only manure of the forest ground, and is ever communicating to it new material for the nutrition of the trees. On the other hand, this litter is frequently carried away by man, and utilised elsewhere. The material in question is thus of much scientific interest from two points of view.

For some years past a German observer, Herr Ernst Ebermayer, has made a careful study of the subject, and he has published his results in a work entitled *Die gesammte Lehre der Waldstreu*. We propose in what follows to give a brief outline of these researches.

And first with regard to the quantity of litter formed. Since the fallen leaves are the principal material of the litter and humus, and the quantity of the latter depends chiefly on that of the former, it is important to ascertain, from continued researches extending over several years, the average amount of litter on a given surface of forest ground, with different varieties of wood, and under various conditions of locality, &c. Such observations have been made in Bavaria in eighty-seven places; in some districts since 1861 and 1862, in others since 1866.

The strength of foliage is in the first case conditioned by the nature of the tree species, the trees which thrive in shadow having more foliage than those requiring more light. In one and the same species of tree, again, the amount of foliage varies according to the conditions of locality and growth. On fertile, moist, and deep soil the foliage is fuller and thicker, and so the fall of leaves is greater than on poor, dry, and shallow soil. And for these reasons the foliage is generally thicker on the fresh northern and eastern slopes than in dry southern and western exposures. The same fact explains the phenomenon that the fall of leaves in rainy years is greater than in dry and hot ones.

In a similar way the size of the leaves is also dependent on a whole series of factors — first on the good nutrition of the tree, then on suitable heat and light action. The numerous observations on this point further revealed a very well marked influence of the height of the locality. It appeared that, on a large average, with equally favourable conditions of soil, Beech leaves were smaller the higher the locality above the sea-level. Thus in Aschaffenburg (which is 133 metres above the sea), although the soil is here inferior to that in the Bavarian forest, the Beech leaves are nearly four times larger than at the upper limit of Beeches, 1344 metres. Thus, while, in mountainous regions, the number of leaves may be the same as in lower localities, the amount of the foliage falling annually will be less.

Besides leaves, the mosses growing on the ground contribute to the formation of the litter in woods. The growth of the mossy covering is associated with the fresh shaded ground of the Pine forest, and in cloudy and wet mountainous regions the moss formation is peculiarly abundant. It increases in general with the height above the sea, and is wanting both in the dense woods on account of deficient light, and in too strongly illuminated woods, where, in place of mosses, various species of Ferns, Blaeberries, &c., make their appearance.

Thus while the greater or less fall of leaves and moss formation in woods depends on the joint action of very various factors, it is conceivable also that the absolute production of litter may not only be very different according to the nature of the wood, its mode of growth and locality, but that in one and the same stock of trees, in consequence of variable conditions of weather, the yield of litter may not, in all years, be the same. Several years' observations must therefore be had, in order to gain exact averages. The results obtained in Bavaria during twelve and eight years are arranged in a series of tables, from which the following data with reference to quantity of litter are taken.

1. In normal and well-closed stocks of Beech the yearly litter production per hectare amounts to 4107 kilogrammes, the three years' production 8160, the six years' production 8469, and the supply of litter in preserved woods 10,417 kilogrammes, these numbers expressing the litter reckoned without humus. "We see," says M. Ebermayer, "that in Beech woods, after three and six years, the supply of litter is almost exactly double that occurring in a year; hence it follows that for the decay of the Beech leaves, or rather for their change into humus, three years on an average are necessary. Therefore also the quantity of litter to be reckoned on in a six years' period cannot be much greater than in a three years' period, for after six years one still finds only the litter-fall of the last two years; the older leaves are, for the most part, already changed into humus, and partly also quite decomposed. It is worthy of notice that in stocks of Beech wood fit for felling, when they are still well closed up, the annual fall of litter is nearly as great as in stocks that are beginning to be ready for felling. In entirely preserved woods the entire litter production is on an average two and a-half times the quantity of the annual leaf-fall. In such litter, besides the leaves, humus, brushwood, &c., are also found."

2. In normal and well-closed stocks of Pine the yearly fall of needle-like leaves per hectare is (on a large average) 3587 kilogrammes; the three years' litter 7591 kilogrammes; the six years' litter 9390; and the supply of litter in preserved woods 13,857 kilogrammes. The three years' yield of litter is accordingly, in Pine woods, on an average 2.2 times, and the six years' yield is 2.7 times greater than the yearly production. It follows that the decay of the Pine

leaves occurs almost as quickly as that of the Beech leaves; so also the six years' quantity of litter should be only twice as much as the yearly production. In the six years' period, however, the Pine litter is found almost three times the quantity of the annual production. This is explained by the fact that in Pine woods the production of litter in the six years' period is not limited to the leaves present, but extends also to the moss, which has formed within this period and not passed into decay. The one and three years' litter production is in Pine woods about 10 centimetres per hectare less than in Beech woods; and on the other hand, it is after six years about 20 centimetres greater. The supply of litter in preserved Pine forests is greater than that in Beech woods, it amounts on the whole to nearly four times more than the yearly fall of leaves.

3. In vigorous, well-closed stocks of Scotch Fir the yearly fall of leaves amounts, on an average, to 3706 kilogrammes per hectare, the three years' litter production to 8987, the six years' production to 13,729; and the supply of litter in protected woods to 18,279 kilogrammes. In these woods, accordingly, we have in three years nearly two and a half times, and in six years—taking into account the inferior Fir woods—probably three times the amount of the yearly litter production. The decay of the more resinous leaves of Scotch Fir occurs somewhat more slowly than that of the Pine and Beech foliage; consequently in three years there is accumulated, not twice, but two and a half times the amount of the annual production. From this it would appear that the Scotch Fir leaves take, on an average, three and a half years to be changed into humus. The litter production in preserved woods of Scotch Fir is in general greater than in Pine and Beech woods, and amounts altogether to nearly five times the amount of the annual leaf fall. *M.*

Foreign Correspondence.

SANTA BARBARA COUNTY, CALIFORNIA. — *The Grape Tree of Ten Thousand Clusters.*—We have been asked, very frequently, to give a description of this great horticultural wonder, perhaps better known as the Mammoth Grape Vine of Montecito, in Santa Barbara County, California. A great deal has been said and written about this Vine during the last quarter of a century, so that to-day it is one of the most celebrated natural curiosities in the world. It is called the great celebrity of Spanish California by Hyatt in his popular book on Grape culture. Nearly every history of California describes it as the largest and most prolific Vine the world ever produced, in ancient or modern times. And it must be remembered that history furnishes instances of very large Vines. For instance: The doors of the Cathedral of Ravenna were made out of Vine planks, said to have been 12 feet long and 15 inches wide. The columns of Juno's temple, Metapont, and statue of Jupiter for the city of Apollonium, were made of the wood of the Vine; and yet, from what we can learn, none of these Vines were equal in gigantic proportions to this great tree. In the Old World there is the noted Vine of Hampton Court, about 200 years old, and grown under glass; yet the diameter of the body or trunk of this celebrated English Vine is only the same as the diameter of one of the main branches of the Montecito monster. The annual yield of the English Vine is only from 1400 lb. to 2000 lb. of Grapes, while this California tree, according to the best authorities, produced yearly from 7500 to 10,000 clusters, equal to over 6 tons, or 10,000 lb. of excellent Mission Grapes. Many may think that this is a California story, but this account has been confirmed by the citizens of Santa Barbara at a public meeting held in Tebbet's Hall, September 9, 1875. At this meeting a statement of the history of the Vine, and resolutions expressive of deep regret at its death, were adopted and published in the Santa Barbara *Press* of September 10, 1875. It is from sixty to one hundred years old, and covered over 12,000 square feet of ground. The branches spread around the trunk in all directions, like the radius of a circle, forming a most beautiful tree. A large dancing floor was erected by the Spanish under one side of it, and it is said that 3000 people could be seated under its wide-spreading branches. Its trunk is immense, the largest circumference 8 feet from the ground being 5½ feet, so that it well merits the title of The Grape Tree of Ten Thousand Clusters. It has for many years attracted tourists from all parts of the world, who were charmed by its vast proportions and its unequalled productiveness; and I have frequently noticed that he who observes it,

> "Ere he passes on,
> Gazes his fill, and comes, and comes again,
> That he may call it up when far away."

And, so far as my observation is concerned, this is true. There is even now, after its departure to the East, a charm still lingering about the place where it so long flourished that attracts citizen and stranger to the very spot where it stood, which is now marked by a stake. Numbers visit here daily, and the first question from strangers is, "Is the old Vine really gone to the Centennial?" The answer being in the affirmative, "Then I shall see it there." "But is not the stump or roots left and to be seen?" is the next eager inquiry, and if a remnant of root or branch is found it is carried off as a charm, and a sprig or leaf must be sent to distant friends, with photographs of the old and daughter Vines. The daughter Vine is the one that stands near where the parent Vine stood, and it is almost as large, and altogether as prolific as the parent was. There is a very entertaining story related concerning the origin of the old Vine. The substance of it is that a Grape cutting was presented to a young Spanish lady a century ago, by her lover, as a riding whip, which was planted by his request, and that this memento of love developed into this great Vine. The story is too long for the compass of a letter—it is called the "Legend of the Montecito Grape Vine." From what I can learn of the romantic history of the Vine this is its real origin. It must have been planted under extraordinary circumstances, or we might expect to see others of equal size. There is some secret mystery connected with its prodigious development which no one seems able to explain. It was irrigated by the water from hot springs, which contain sulphate of iron, and other mineral substances, and to the influence of these agents some attribute its great size. But be that as it may, it is regarded by all as a most extraordinary freak of Nature, and familiarity with it on the part of residents seems to make it the more highly prized. A near neighbour, in conversation the other day, said in reference to this Vine, that when he saw it pass by his house on waggons he felt as if his best friend had departed. He had no interest in it apart from an attachment to it as a great public attraction.

The first resolution of the Santa Barbara meeting is—"That we take a deep interest in the fate of this Vine, which has been so long recognised as the chief curiosity of Santa Barbara, and that we heartily approve of the owner's plan for exhibiting it at the Centennial, where it will stand as an indisputable proof of the rare adaptation of our soil and climate to the culture of the Grape, and where its enormous proportions and unequalled fruitage will form no unfit symbol of the extent and resources which the country has attained during the century just closed." The second resolution—"That we feel the less regret at its removal from the fact that there remains, upon nearly the same spot, a daughter Vine, which also outranks the Hampton Court Vine, &c."

We are convinced that this Vine had a peculiar charm for the natives, who had been so long accustomed to enjoy its fruit, and the Spanish sports under its branches, according to the custom of their country. It was their favourite resort for many years, and they relinquished it with great reluctance. The sea and mountain view from this place is grand. The Vine stood in the beautiful elevated valley of the Montecito, equidistant from the Pacific on the south, and the Santa Inez mountains on the north. The annual crop of the old Vine in its palmy days was equal to the crop of an acre of the most productive California vineyard, and equal to the crop of 2 acres of vineyard of France, Spain, or Germany.

Many Vines have been planted in this vicinity, which are trained after the style of the King of Vines, and it is believed that more Grapes can be produced in this way than in any other from a given area of ground. One hundred years hence this county will likely have many large Vines, but, perhaps, none will have so interesting a legend connected with them as this relic of the past. *The Resources of California.*

Florists' Flowers.

ON THE NEWER TEA-SCENTED ROSES.—Whilst our lists of hybrid perpetual Roses introduced since 1860, have grown to so great a length, the list of Tea Roses in our catalogues has year by year also become larger, and merits well, as it seems to us, a careful review.

The newer varieties have been real improvements in size and shape of flower, better habit has been gained, something too in the way of hardiness, fresh colours have been originated, and the delicious scent of Rosa indica odorata has been maintained.

What hybridisation there has been has mostly been with the Noisettes; and Maréchal Niel, sometimes called "Tea-scented," sometimes "Tea-scented Noisette," is one of these hybrids. Bouquet d'Or, a variety of Gloire de Dijon, and Caroline Kuster (both of 1873), might almost be called Teas.

It would not be fair to omit the name of the raisers who have done so much in this class. We have to thank M. Guillot fils, of Lyons, for some of the best, and we have to thank him, too, for the introduction of the use of the seedling Briar as a stock for dwarf Teas. On this stock budded plants thrive splendidly; indeed we believe, from the experience we have had of some beds of Tea Roses budded on this stock, that the culture of Tea Roses out-of-doors may be successfully carried out even in the coldest parts of the kingdom — of course with protection in winter; but this is easily given—a little bracken Fern amongst the branches, and a mulch round the roots, with proper and thorough drainage, suffices. To M. Guillot we owe, to quote them in chronological order:—Triomphe de Guillot fils, almost a climbing Tea, 1861; Madame Margottin, one of the best and hardiest yellows, 1866; Reine de Portugal, yelk of egg colour, 1867; Adrienne Christophle and Marie Sisley, the first buff-yellow and white all mixed, the latter light, tipped with crimson, 1868; Catherine Mermet, perfection of shape, large, open, and lovely in its creamy light rosy salmon, 1869; Comtesse de Nadaillac, a creamy rose, with apricot base of petals, 1871; Marie Guillot, a new large white, in the way of Madame Maurin, 1874; and La Nuancée, of this year, a remarkably distinct Rose, with beautifully edged petals on white ground.

The late M. Ducher, one of the most honestly careful senders-out of novelties, gave us Marie Van Houtte, a glorious lemon-coloured flower, with rosy tint, quite novel, 1871; Anna Olivier, a lovely cream-coloured flower, in the way of Madame Villermoz; and the fine, golden-yellow, large, full-flowered Perle de Lyon, 1872. Comte de Sembui, a deep coppery coloured, large, full, open bud; and Jean Ducher, a yellow shaded salmon, a glorious flower, with a rosy peach centre, 1873; Maréchal Robert and Marquis de Sanima, from Madame Ducher, are promising.

M. Levet, a comparatively new Rose-grower, has in the last four or five years added to our lists, his first Tea in Belle Lyonnaise (1869), a glorious lemon-coloured Gloire de Dijon, and in 1870 a richer salmon-coloured Rose of the same type, Madame Berard. In Madame Jules Margottin and Souvenir de Paul Néron we have two charming bouquet Roses, of lemon and rosy tints. Perfection de Montplaisir is the freest pure-coloured yellow Rose we have, fairly hardy: all 1871. Madame F. Janin, so beautifully shown by Mr. Bennett this year as a button-hole Rose, 1872; while his Rose of 1873, Perle des Jardins, steps at once into fame as the finest dwarf-growing dark yellow Rose we have.

We owe to M. Pernet Jean Pernet, a charmingly free hardy Rose, of bright yellow (1867), and what promises to be an improved Souvenir d'un Ami in Souvenir de Madame Pernet of this year.

M. Lartay, of Bordeaux, sent us Alba rosea, a close relative of Madame Bravy; and in two succeeding years, at a guinea a plant each time, Gloire de Bordeaux (1861), and Belle de Bordeaux (1862), pink climbing Tea Roses, which, when they flowered here, proved almost, if not quite, identical.

Messrs. Veitch's Duchess of Edinburgh of 1874 has proved a very pretty distinct red Tea.

May we just venture here to record our own gain —Cheshunt Hybrid (1873)—as a distinct hybrid Tea; it is a seedling from Madame de Tartas.

Of the older Teas which have stood their ground well amongst all these improvements are Auguste Vaucher, yet distinct from others; Amabilis and Bougère, pretty bouquet Roses; Devoniensis, and its newer climbing sport; David Pradel, still one of the best rose-coloured Teas; Elise Sauvage, twice re-christened as Madame William and L'Enfant Trouvé; grand useful old Gloire de Dijon; Goubault, the freest, prettiest pink; Homer, tipped, wrinkled (like Dr. Andry amongst Pelargoniums) variety; Madame de St. Joseph—one of the best pot Roses we have; Madame Villermoz, the best pure white Tea, hardy, upright-growing, and vigorous; Moire, with its charming salmon rosy fawn tints; President, a better form of Adam; Rubens, a rounder-formed, tinted, De-

voniensis-like Rose ; glorious old, ever-flowering, buff-coloured Safrano ; Madame Falcot, another glorious gain of M. Lacharme ; Souvenir d'Elise Varden, a shy beauty, but, whether in pot or on wall, dwarf or standard, worth all care to produce a single fine flower. We close with the old valued Souvenir d'un Ami (La France is replacing it as a pot Rose), but still one of our best Teas ; and the glorious-coloured but somewhat tattered flower of Vicomtesse de Cazes.

Old exhibitors and attendants of the Regent's Park shows will remember the fine pot plants of Vicomtesse de Cazes shown often by the best amateur pot Rose grower we ever had—Mr. Terry, of the Youngsbury Gardens, near Ware, whose death we very much regret to hear of during the past week. One of our oldest exhibitors of Roses, he was one of the supporters and showers at the first National Rose Show, and only retired from showing for competition when the larger cares of the management of Mr. Puller's farm and estate prevented him giving the time such a genuine gardener felt it to be necessary to give in order to secure the leading places in the prize lists. We learn he died, so to speak, in harness—quietly, in his arm-chair, as he sat down after an afternoon's work arranging the bedding of the summer flower garden. He is much regretted in our county. *Geo. Paul, Cheshunt.*

New Garden Plants.

DENDROBIUM DEVONIANUM, *Paxt., n. var.* ELLIOTTIANUM.*

This is an unusually beautiful Dendrobe. When I named D. rhodoneurum I thought it was lovely, but this is quite an extraordinary improvement. The sepals are of a beautiful dark purplish hue at their tips. The petals enjoy a greater share of that warm purplish tint at their upper parts, and the nerves are beautifully painted with a purplish hue, and are also nicely toothletted. The lip has its anterior part dark purplish, and there are three purplish streaks at the base. The usual two yellow eyes are bright. The smell is very powerful : I judge it between patchouli and rhubarb. Thus it was, when the flowers arrived, giving that most remarkable perfume. The plant originates from the richest habitat of Orchids in the world, Mr. Stevens' rooms. I obtained it from Sir Trevor Lawrence (grower, Mr. Spyers), and from H. G. Elliott, Esq., of The Crescent, Downs Park Road, Clapton, a most zealous orchidist. *H. G. Rchb. f.*

BOLLEA CŒLESTIS, *n. sp.*†

We cannot feel content so long as we have not the Bollea cœlestis, provided its blue be so beautiful as represented in the coloured sketch at hand. It is one of those grand-flowered, one-flowered Zygopetaloids which we know as Pescatorea and Bollea, and having a hooded column it has to enter in the Bolleas. The flowers are, at least, as large as those of Pescatorea cerina grandiflora, and even in the dry state they show a remarkable bluish tint. The sepals and petals are represented as light blue at their base, deepest blue in their widest part, and with white tips. The lip in its basilar part is yellow, blackish violet in its anterior part. The superior basilar part consists of very many undulated keels. The column is yellow outside, and the anterior part, covered with hairs, is blackish violet. This grand thing was discovered somewhere in western tropical South America (locality, of course, not very exactly confessed) by M. Roezl or Messrs. Klaboch, his nephews. It is stated to be a cool Orchid, and will, if really introduced, decidedly do as well as our Pescatoreas, which, if once really established, grow as weeds, or, at least, nearly so. *H. G. Rchb. f.*

* *Dendrobium Devonianum, var. nov. Elliottianum.*—Floribus texturæ validæ ; tepalis pulchre ciliato-denticulatis ; sepalis tepalisque apice obscure purpureis ; tepalis obscure purpureo-venosis ; labello antice purpureo, basi purpureo tristriato.

† *Bollea cœlestis*, n. sp.—Sepalis oblongis acutis ; tepalis latioribus brevioribus ; labello breviter unguiculato, angustius ligulato basi utrinque angulato, callo elongato laminam inferiorem excepto limbo replicato prope tegenti, in discum laminæ anticæ (si vis epichilii) excurrentis ex lamellis circiter 13, apice papulis circa 9 abruptis ; epichilio rotundato replicato infra retuso ; columna cucullata sursum utrinque obtusangula, in fronte bene pilosa.—Botanice Zygopetalum cœleste. Species exquisita abiens in sectionem Pescatoreæ mediante Zygopetali Roezlii ; columna angusta clinoso ; labello propiore etiam cucullis ad instar replicato sed bilido hic retuso. Ex icone folia cuneato-oblonga obtuse acuta. Flores ex pulcherrimis Orchidearum ; sepala et tepala basi cœrulea parte majore intense ac profunde indigofræ colore, apicibus albis ; labelli callus flavidus seu antica violaceo atrato ; columna extus flavida, antice violaceo-purpurea. *H. G. Rchb.*

AERIDES HOULLETIANUM, *H. G. Rchb. f., Gard. Chron.* 1872, 1194.

This rare plant had till now only appeared at Paris, where it flowered, for the first time, 1868, with my excellent correspondent, M. Luddemann, of the Boulevard d'Italie. Now it has flowered in two varieties at once in the rich collection of Sir Trevor Lawrence, under Mr. Spyer's care. Sir Trevor kindly informs me the plant's growth and foliage are totally those of A. virens, Lindl. The inflorescence, however, would be like that of A. falcatum, Lindl., but is denser. The scientific mark of distinction is only to be found in the keel of the lip, for the loving eye of an amateur it is a quite different plant, since both sepals and petals are of entirely buff colour, or "buff shading off into cream-white at the base," as the lucky possessor writes. Sepals and petals have a purplish eye-spot at their tips. The lip is white, its anterior part dark purplish, and there are some purplish lines on the sides. The plant, praised for flowering very freely, is an excellent novelty, affording a new, most elegant variety of colours amidst its beautiful beloved congeners. *H. G. Rchb. f.*

A. Houlletianum received a First-class Certificate at the meeting of the Royal Horticultural Society on May 17, being there misnamed A. Mendelii. The same evening I sent two fine spikes, which differed somewhat, to Professor Reichenbach, but they were stopped by the Post Office. On learning this I sent him the only remaining spike, unfortunately a poor one, which had been cut some days, and had been to the Guildhall ball in a lady's hair. I think A. Houlletianum will be generally considered as distinct as it is beautiful. The characters which distinguish it are the dense spike, the rich buff of the body of the flower, and the fine full high-coloured lip, larger and brighter than in any A. Lindleyanum I have seen. The plants I have came in 1873 from Cochin China, in some Wardian cases sent over by a French officer, who I fear found them a poor speculation.

Since my flowers were stopped I have had a correspondence on the subject with the secretary to the Post Office. I am glad to say that the result has been an apology, and an admission that such things can be sent through the post if properly packed. Plants or flowers so packed, *e.g.*, in wet moss, as to be liable to injure the contents of the mail bags, cannot of course be forwarded. *Trevor Lawrence.*

DENDROBIUM SUAVISSIMUM, *H. G. Rchb. f., supra*, 1874, vol. i., p. 406.

At last it has flowered, the sweet Dendrobe, after considering the question for two years. It is a great satisfaction to me, as I described the plant from very modest materials. The species stands indeed, as has been stated before, close to D. chrysotoxum. The flowers are smaller, the fringe is made by much shorter papillæ, the chin is shorter, the petals are narrower, the lip does not expand to an open mass, but its lateral parts keep bent over the base, thus forming a cucullate body, so as to allow the beautiful, dark, blackish blotch to be seen, and which contrasts so well from the deep yellow of the flower. There are also a few blackish streaks on each side of the base of the lip. I need scarcely say I have to thank for the beautiful inflorescence my highly-valued correspondent, Mr. Stuart Low, who informs me of his inability to easily distinguish the plant when out of flower from that of the well-known chrysotoxum. A plate for *Xenia Orchidaceæ*, iii., is in preparation. *H. G. Rchb. f.*

Forestry.

BY the time this is before the reader bark harvest should be far advanced in most districts, and if the weather continue fine it will soon be over. In this and most other counties the only bark now stripped for its commercial value is that of the Oak and Larch. At a former period Birch, Alder, Willow, and Ash were respectively peeled for the value of their bark, but now that chemical products can be procured at less cost, and used in a more convenient way, they have superseded them.

Oak bark was at one time much higher in price than now, and its tendency is to fall still further, in consequence of the importation of foreign bark and chemical substitutes, while Larch bark continues steadily to rise in price. I sold Oak bark recently at £7 per ton, chopped and delivered carriage free, and I believe there is an unlimited demand for it at the above price. I was also offered £3 10*s.* per ton for Larch bark, the demand for which far exceeds the supply ; and not many years ago it could scarcely be sold at 50*s.* per ton. The price, however, both of Oak and Larch bark depends very much upon its quality ; the more fleshy it is, and free from cork-wood, as the outer bark is termed, the better ; and the bark, at all times, of healthy well-grown trees is more valuable than that of diseased, old, or sickly ones. The manner of stripping the bark, too, influences in an important degree the quality and value of the bark in the market.

It is the practice of some foresters to peel all the small branches up to an inch or so diameter, and in order to induce it to separate from the wood a mallet is freely used, and this operation, whether upon small or large branches, or upon the limbs or trunk of the tree, is succeeded by deleterious consequences. The tanning property of the bark, as generally understood, consists of small globules, or cells filled with it, and when the mallet is applied it bursts or ruptures the cells, thereby dissipating its most valuable property, the evidence of which is manifested in the dark and bruised appearance of the inner bark. Fortunately for the Larch bark it seldom or never requires the use of the mallet, otherwise if applied it would doubtless injure it in a corresponding degree.

In drying or harvesting the bark there is still greater risk of deteriorating its quality than even in peeling it. The English method of peeling and harvesting the bark is much in advance of ours, no higher evidence or proof of which can be adduced than the fact that it commands a higher price in the market. I have seen bark upon the same estate peeled and harvested in the two different ways, and when taken to market that done upon the English system brought fully 10*s.* per ton more than the other.

The difference betwixt the English and Scotch practices of peeling bark consists in the former taking it off in lengths of 3 feet, and the full round of the wood, except that of the trunk and large limbs, where the breadth is limited to 12 inches or thereby, while the latter take it off in small fragmentary pieces, rendering its mode of drying difficult and deteriorating.

The English instruments for bark peeling are in every way superior to the Scotch, and this in no small degree contributes to the superior quality of the bark, for, as is well known, work performed with improper tools is never well done. I have seen comparatively bark-bound trees in Sussex stripped of their bark with an ease and dexterity which with Scotch implements would either have bade defiance or, if forced by means of the mallet, would have rendered the bark all but useless for tanning purposes. The English instrument for incising the bark is a hook-bill admirably adapted for the purpose, as it enters only the requisite and desired depth, while for the same purpose in Scotland an axe is used, with the disadvantages of being unwieldy for small wood, and for large timber in going either too deep or not deep enough into it.

The mode of drying or harvesting, however, is that upon which the value of the bark more than any other depends, and in damp, dull weather the operation is rendered very difficult and precarious. In Scotland the general practice is to strip off the bark in any manner it can most easily be done, irrespective of just regard for preserving its quality. The bark is torn from the branches in a rough manner in any shape and form, and only from the large limbs and trunk is it taken off in large pieces for the sake of covering the other bark after being put upon the stages. In Scotland the common practice is when the bark is taken off the trees that it is carried in sheets to an open airy place and spread upon the ground to dry, observing to lay all the large pieces with the fleshy side uppermost and turning the other occasionally during the day. At night the bark is collected into heaps according as its state of dryness admits, and the large pieces taken off the body of the tree spread over it in the form of tiles upon a roof.

When sufficiently dry to warrant being put together it is built upon stages raised a foot from the ground, about 30 inches wide, the same in height, and any desired length. Upon the stages it remains till sufficiently dry to cart into the barn or other place for chopping or hatching, and there receives no injury if the weather is dry, but in the event of its being wet the bark becomes black or otherwise discoloured and sometimes quite unsaleable and useless.

In England the practice is different, as already stated. The bark is all taken off in 3 feet lengths and proportionate breadth. It is carried to an open, airy place, and set in rows on end with the fleshy side innermost. In order to keep it up a row of rough stakes is driven in a temporary way into the ground, and between stake and stake a rail of wood, a small

wire, or piece of rope-yarn is extended. The pieces of bark being set on opposite sides support each other, and in this position dry very rapidly and are soon ready for carting home. Whilst on end the bark dries well against a dry stone dyke, wire fence, or wooden paling, when such is accessible.

The work of barking is now generally done by contract, at about the following rates :—Peeling Oak timber, including cutting down the trees, 30*s.* per ton of dry bark ; peeling bark of copse wood, including cutting the wood, about 60*s.* per ton. For drying bark, 2*s.* to 2*s.* 6*d.* per ton is allowed according to locality and situation. For chopping bark of timber trees, 9*s.* to 10*s.* is given, and copse bark, 10*s.* to 12*s.* per ton. Larch usually costs for peeling, including cutting down the trees, 20*s.* per ton, and for chopping about the same as Oak. *C. F. Michie, Cullen House, Cullen, June* 1.

BRITISH GARDENERS.

XXXIX.—D. PRESSLY.

MR. PRESSLY, whose portrait we publish to-day, was born in November, 1828, at Stuartfield, a village situate in the north-eastern portion of the county of Aberdeen ; and when old enough, attended for many years the parish school, where the pupils were well drilled in arithmetic, spelling, and writing. "A year previous to my leaving school," he writes, "I joined a Latin class, in which, I believe, I made fair progress for the time ; and I have since found it advantageous in the spelling of botanical names. To early training by my mother I owe much of my love of gardening. She was excessively fond of sweet-scented leaved plants, of which she had many kinds ; and she also cultivated many border flowers.

"In the spring of 1845 I was apprenticed to my brother-in-law, Mr. G. Mathews, who was then gardener at this place (Knockmaroon Lodge). He was an ardent cultivator and successful exhibitor at the shows of the Royal Horticultural Society of Ireland, especially in the class of hard-wooded plants. The more difficult Ericas, Aphelexis, Phœnocomas, Leschenaultias, and Hovea Celsi were grown by him in a manner which I have not since seen surpassed. He exhibited at all the shows then held at the Rotunda, and most of the fashionable plants of the period were also grown. The old Lisianthus Russellianus (now scarcely seen or heard of) was a great favourite ; a batch was raised annually, ensuring a succession of flowering plants. I took my part in the usual routine, such as wheeling, hoeing, digging, and scythe mowing—the latter a severe task for a beginner, until practical experience enables him to understand the proper keeping of the edge. Happily young gardeners have now comparatively little to do with the scythe, the invention and perfection of the various mowing machines having resulted in the work being done far better and more expeditiously. In what is termed the indoor department I had also an opportunity of fair practice in watering, staking, and potting, and also packing and unpacking, staging and arranging at the exhibitions.

"As to literary improvement, I read in my leisure time the gardening periodicals, also *Curtis' Botanical Magazine*. My standard works were *Loudon's Encyclopedia of Gardening*, *Loudon's Hortus Britannicus*, *Lindley's Theory and Practice of Horticulture*, from which I profited much, and also his *School Botany*, which by close study I mastered tolerably ; with many other books and periodicals on analogous subjects, all of which were supplied by the kindness and liberality of my employer.

"At the end of my term of three years I was promoted to the position of first assistant. A twelvemonth after my brother-in-law emigrated to New Zealand, and became in the course of a few years a prosperous and successful nurseryman and seedsmen at Dunedin, the chief city of the province of Otago. I take this opportunity of making the above statement concerning him, because I feel sure that his friends about Dublin and elsewhere who survive will be highly pleased to learn of his success. At his resignation I was temporarily placed in charge, in which position I remained for a year ; at the expiration of that time my appointment was ratified, my salary raised to that of my predecessor, and I was invested with the management and direction of the whole place, which I still retain.

"I exhibited at the shows in Dublin in the plant sections with tolerable success for a short time, but I soon began to find that the demands upon my time and resources at home were such that I was obliged to cease my connection with the shows as a competitor, but I have occasionally sent for exhibition subjects of special interest, for which I have received the highest commendation, or a more substantial award from the Council of the Royal Horticultural Society.

"In the spring of 1851 I was introduced to the late J. C. Lyons, Esq., of Ladiston, Mullingar, County Westmeath, who at that period possessed one of the most extensive private collections of orchidaceous plants in the United Kingdom, and who also had the merit of having a short time before written and published the first and only work on the culture and management of that interesting and beautiful, and then little known, family of plants. I received an invitation to see the collection at Ladiston, of which I was not slow to avail myself, and was welcomed with characteristic hospitality and kindness, and

received much personal instruction on the treatment of Orchids. I had also the pleasure of being presented with a copy of the work above alluded to. Mr. Lyons also presented my employer with a few Orchids, which formed the nucleus of a small collection subsequently brought together here, and which was cultivated with fair success until 1860, when extensive alterations, I might say a reconstruction of the whole garden, necessitated the removal of the house, which was well suited for their cultivation.

"In the summer of the same year a little horticultural tour was suggested. I left Dublin per steamer for Bristol, visited the nurseries of Messrs. Garraway, Mayes & Co., near that city ; thence to those of the Messrs. Lucombe, Pince & Co., and Messrs. James Veitch & Son, near Exeter, where, of course, I saw much to interest and instruct. I had an introductory note to Mr. James Veitch (late of Chelsea), whose advice, kindness, and attention I shall ever appreciate. At his invitation I spent several days as his guest. He personally conducted me through the nursery quarters, pointing out and otherwise directing attention to everything of special interest, whether a tree, shrub, or herbaceous plant. Indoors the numbers and quality of plants cultivated in pots very much surprised me. One day he dispatched me in his vehicle to see Bicton Gardens (Lady Rolle), furnishing me with credentials to Mr. Barnes, who was very kind, and took special care that I should see everything under his charge. I have a clear recollection of his ridged kitchen-garden, his splendid Grapes and Pine-apples, the stately Araucarias, and the extensive and well-arranged arboretum.

"By the same kindness on the part of my employer in the following and for several subsequent years I had the privilege of seeing the May shows at Chiswick, and also those at the Royal Botanic Gardens, visiting in the interval, in succession, the leading nurseries and private gardens in the neighbourhood of London, and taking a run occasionally to the provinces to see local *fêtes*, &c. On these pleasant journeys numerous acquaintances were made and many friendships formed, not a few of which, I regret to write, have been severed by death. Alas ! what havoc time has wrought amongst those who then stood in the front ranks of horticulture.

"Participating in the universal interest in exotic Conifers excited by the discovery and introduction of the Wellingtonia in 1853, I received encouragement to make a commencement to procure and plant some of the more recently introduced species : preparations were made accordingly. My first purchases were from the late Mr. R. Glendinning, of Chiswick. One of the plants thus procured, Cupressus Lambertiana, has attained large dimensions, being over 50 feet in height, with a proportionate diameter ; it began to cone years ago, and from its seeds numerous healthy trees have been grown. As they were introduced, others were procured and planted, and, with a few exceptions, have done well. Due attention was paid to provide shelter from the prevailing westerly gales. The space at my disposal forbade me attempting to grow a large collection, I therefore planted the best sorts only ; some of the specimens for symmetry and health will compare favourably with the same species to be seen elsewhere.

"Besides operations of an ornamental or decorative character I have projected and carried out works of utility and convenience."

Mr. Pressly further writes, in terms that it is not necessary for us to reproduce here, that throughout his long career of twenty-six years he has been so fortunate as to possess the fullest confidence of his employer, and has received substantial testimony from him of the value set upon his services. It is pleasant to read of such satisfactory relationship existing between employer and employed, and the fact is creditable to both parties.

Natural History.

A RARE BIRD.—A friend of mine, who visited Labrador and spent several years of his life in wandering about various portions of North America, has a nice collection of birds' eggs, amongst which were some rather small yellow ones. These, he said, were the eggs of the surf scoter. The birds made their nests on or a little above the ground, in bunches of grass or amongst weeds, and lined them with soft down. They generally selected wet marsh land, and laid four or five eggs. The same friend gave me the foot of an albatross which he had shot and made into a pouch for the Indian weed. I made a purse of it ; but not finding it answer the purpose, gave it to a gentleman who smoked. The nests of the albatross were made of mud, and looked like small huts, according to Mr. M.'s description. *H. E. Watney.*

WASPS AND HORNETS.—A paucity in the number of these very troublesome insects is not a circumstance to be by any means regretted, although it may be desirable to ascertain if possible something of the cause or causes of their abundance, or otherwise, during certain seasons, and it is possible that some of your many correspondents may be able to throw some light upon the matter. It has long been the custom here to pay the men and boys employed in the gardens and grounds a penny for every wasp or hornet captured in or near to the gardens up to the end of the month of May, and the numbers brought in during the different seasons have of course varied very considerably, but during no previous season has the number of insects captured been so small as that of the present, amounting to only seventy-three, while that of the preceding year—1875—amounted to no less a number

than 2566, and the sum paid for them was £10 13s. 10d. The mildness or severity of the weather during winter does not, so far as I can perceive, influence the number of those insects which survive it, as they have been found to be quite as numerous after a severe winter as after one of a much milder character. Indeed last winter, although tediously protracted, was nevertheless free from any unusual depression of temperature, the lowest reading of the thermometer here being 16° on the night of December 3, while during the winter of 1874-5 several considerably greater depressions occurred — notably that of December 31, when the mercury fell to 0°.6. Notwithstanding this, however, during the following April and May queen wasps and hornets put in an exceedingly strong appearance, while the fruit crop, was also of the most abundant character—the reverse of what it is likely to be this season. It is quite possible that causes which operate upon the fruit crop may also in some way act upon the production of wasps and hornets. *P. Grieve, Culford, Bury St. Edmunds.*

PLANT GOSSIP.

IN the June number of the *Botanical Magazine* the plants represented are, t. 6233, Monopyle racemosa, a handsome Gesneraceous pubescent herb, with ovate-lanceolate acuminate serrate leaves, and terminal many-flowered racemes, the flowers being white, tubular, slightly irregular, and shortly five-lobed at the margin. The plant is a native of New Grenada, and was introduced by Messrs. Veitch. Tab. 6234 represents an arborescent Dracæna described by Regel as D. Saposchnikowi. It has tufted ensiform green leaves, and dense panicles of greenish yellow flowers. The plant flowered at Kew in 1875. Tab. 6235 is devoted to the representation of Cotyledon teretifolia, a species with thick cylindrical pubescent leaves, terminating in a small spathulate flattened apex margined with red. The yellow flowers are borne in terminal many-flowered cymes. The plant is a native of South Africa, and flowered at Kew. Tab. 6236 illustrates Milla Leichtlinii, a plant described by Mr. Baker in our columns, 1875, ii. 234. Tab. 6237 represents Odontoglossum Hallii, a handsome Odontoglot with sepals and petals oblong-lanceolate acuminate, yellow, marked with broad blotches and bars of brown, with a whitish lip blotched with brown, serrulate at the free margin, and provided near the base with two parallel pectinate crests. Native of New Grenada, whence it was introduced by Messrs. Backhouse in 1866. Tab. 6238 shows a bold Araliad, called Heptapleurum polybotryum, and known in gardens as Parotropia Teysmanniana. It is a semi-scandent shrub, with stalked digitate 5—7 foliolate glabrous dark green leaves, the segments or leaflets being oblong lanceolate and acuminate. The plant is a native of the mountain forests of Java, and has long been in cultivation at Kew, where its Ivy-like flowers are produced in the winter months.

—— Beautiful as they are, yet the culture of IXIAS, SPARAXIS, BABIANAS, CALOCHORTUS, CYCLOBOTHRAS, &c., is only rarely carried out in the present day, and were it not for the exhibitions occasionally made by Messrs. Hooper & Co. and others, at the London exhibitions, of Guernsey and Jersey grown flowers, these beautiful bulbous plants would be to some extent lost to us; and yet it is not difficult to grow these plants successfully, provided the method of culture be adapted to the requirements of the plants. A few days ago we saw at Stakehill House, Chadderton, Manchester, the residence of Mr. Samuel Barlow, examples of the plants named above doing remarkably well, and forming objects of great interest. Ixias were represented by huge pans of viridiflora, containing from fifty to seventy bulbs each, and just breaking into flower. Sparaxis were also in pans, varieties of S. pulcherrima in full bloom and variously coloured. Babianas had gone out of bloom, but they had done well in pots, a few bulbs in each. Cyclobothras were represented by cærulea, a perfect gem among hardy flowers, by alba and pulchella; Calochortus by albidus, luteus, splendens, and venustus. Mr. Barlow is a great lover of hardy flowers, and has a long, low, span-roofed house, in which he cultivates many subjects, choice and beautiful. When in flower they are brought into the greenhouse, where they make valuable decorative objects. The bulbs are planted in October in pans and pots, which are well drained, the soil being of a free sandy and peaty nature. They are then placed in a cool house, kept pretty dry during the winter, and secure from frost. When growth sets in more moisture is given, according to the growing needs of the plants.

—— We owe to Mr. Barr the opportunity of inspecting a handful of different varieties of IRIS, all of which are so beautiful that we wonder such fine plants are treated with such comparative neglect. We note them as they come, without guaranteeing the accuracy of the names. Iris aphylla has a sweet-scented flower, of medium size (for an Iris), the falls white with a yellow beard, the standards white edged with violet. I. pallida has a sweet-scented flower, of middle size, with violet falls bearded with yellow, the standard being very pale in colour. I. amœna is a small flower, with a disagreeable perfume; the falls are whitish, veined and streaked with purple, the standard whitish, spotted at the base. I. flavescens is a large flowered-kind, with pale yellow bearded flowers, and primrose-coloured standard. I. squalens has mid-sized flowers, varying much in colour, the falls purplish or yellowish, veined, beard yellow; the standard is usually some shade of violet. I. neglecta is a large-flowered kind, with a peculiar scent; the falls are pale violet with darker lines, the standard pale violet. I. subbiflora is a large-flowered kind, with very dark purple, yellow-bearded falls, and standard of the same colour. I. nepalensis is a grand flower, with falls of a deep violet hue, with a yellow beard; the standard is of a lighter violet hue; the flower is sweetly scented. It is probably only a fine variety of I. germanica.

—— M. Lebas, in the *Revue Horticole*, advocates a new method of CULTIVATING WEIGELAS. Observing that the flowers are produced on last year's wood, and that the plants have a tendency to produce numerous shoots from the base, he recommends that the shrubs be considered as biennial, and that they be cut down after flowering, so as to favour the development of the shoots at the base.

—— In the current number of the *Journal of Botany* Dr. Ernst, of Caraccas, mentions the fact that EUPHORBIA PROSTRATA, a very common plant, growing even between the stones in some streets of Caraccas, is often attacked by a species of Æcidium, and in this case its prostrate manner of growth is entirely altered, the stems taking an upward direction.

The Villa Garden.

CLEANSING FROM BLIGHT: WALL TREES.—Some attention is now required by these, especially Peaches and Nectarines, as during the recent dry weather blight infested them, and the leaves commenced to curl. Especially is this true of old trees, or trees in an unhealthy state, which are certain to become more affected with a pest of this kind than trees in a vigorous stage of growth. The curled points of all shoots affected with blight should be picked off and destroyed. Our trees, being somewhat restricted in growth, owing to being planted against a low wall, have been so much cut back from time to time—for, being in a strong loamy clay, they make a vigorous growth—that they are gradually becoming exhausted, and when in this condition are soon affected by blight. No doubt the best remedy would be to replant the wall; meanwhile, circumstances require that for a time this necessary work should be postponed. We find it greatly assists in keeping the foliage of Peaches healthy if they are occasionally syringed with soapsuds, which not only serves to cleanse the leaves, but also tends to drive away marauders that infest the walls. We do this of an evening when the sun is off the walls, or at any time of the day during dull weather.

THINNING THE FRUIT.—Inexperienced gardeners are very averse to doing this, but the capabilities of the trees, as well as the desire to secure fine fruit, alike demand it. It may be that the crop of Peaches on exposed walls will be generally of a limited character this year, and so but little thinning will be required; still there will be exceptions to this rule, and some thinning will be absolutely necessary. Some one once laid it down as a rule, that at most three or four fruits only should be left on a last year's shoot. This may serve as a guide to those whose crops may happen to require a little thinning. The process of thinning should be done gradually, as many fruits will sometimes fall from natural causes, and, if the thinning is got over too quickly, it may happen that some of those which are left fall, and then the crop is in a great measure lost.

THINNING OUT THE SHOOTS. — This also is a most important matter. Let it be borne in mind that it is not the gross shoots—the large quick growths that the trees sometimes put forth — that make the fruiting wood for next year; rather is it the more weakly growth of the trees. Now, an inexperienced cultivator may be apt to look with great favour on these strong shoots, and be led to think that their appearance promises well for the fruit-producing capacities of the tree next season. Not so, however. Instead of leaving these gross shoots, they should be removed quickly, for the purpose of giving the weakly shoots a chance of gaining strength. Another thing to be avoided is having the trees too much covered with wood, and therefore the shoot that is laid-in against the wall should be clear of its neighbour. We have sometimes gone into gardens at the end of July, and seen wall-trees covered with a dense outward growth—shoots of a gross nature coming right away from the walls, hiding the fruit, and also the fruiting wood beneath them, and impoverishing both. They should all be cut away as soon as they put in appearance. The sun and air should have free access to the walls and that for the purpose of performing their important functions—developing and ripening the fruit, and strengthening and ripening the wood. When these shoots are allowed to grow till they form a kind of fringe, and then are removed, positive injury may be done to the trees; hence the value of keeping them cut away as they put in appearance. The injury alluded to is that, by taking off a large quantity of shoots at one time, the trees are forced into a general growth, and the fruit-buds are prevented from forming.

CARNATIONS, PICOTEES, AND PINKS. — What more useful and attractive flowers than these striking and fragrant members of the Dianthus family can be grown in the flower border of a Villa Garden? Among choice subjects they are some of the most satisfying—they bloom freely, and they are very satisfying to the cultivator. We do not allude to the fine exhibition varieties, so much as to good, useful sorts, that can be grown in a border, and allowed to carry all their flowers. The plants, invigorated by the refreshing showers of the last week, are making a vigorous and healthy growth, and are throwing up strong flowering stems. They need staking at once, for the wind is apt to blow them about and snap the stems asunder. A stake should be put to each shoot, and in tying them to the supports it is best to tie the bast firmly to the stake, and then, without cutting it away, tie the flower-stalk to it, so that it will not be confined, but have perfect freedom to grow upwards. Two ties will generally suffice, unless the stems are very tall. To have fine flowers the buds may be reduced. If there are three together take out the two side ones, leaving the centre one to blossom. The side-buds are practically useless, because the centre bud is always the strongest and the earliest to flower, and when it is ready to cut it is invariably before the side buds have nearly expanded.

We are encouraging our plants by top-dressing them with some manure, laying it on the surface to the depth of 2 inches. This serves two useful purposes—in the first place it invigorates the plants, in the second place it lays the foundation of a good surface soil in which to layer the side-shoots by-and-bye. When the flower-buds begin to expand we give the plants a little liquid-manure. Cleanliness is an important matter, and if the buds or the points of the shoots become infested with greenfly the invaders should be destroyed at once. Here that most useful friend to the Villa gardener, Fowler's Gardeners' Insecticide, does excellent service, and by a ready application of a dose or two the fly is destroyed. Failing the insecticide a little soft-soap and water soon washes him away, and if the saponaceous coating be allowed to dry there he does not care to resume his old quarters.

Pinks will soon be in flower. One great favourite is a fine lilac-pink variety, with large flowers, named Lord Lyons. It is a grand flower for the Villa gardener, for it blooms with great freedom, is of large size, and highly fragrant. A Pink makes an excellent buttonhole-flower, rivalling the Rose in that respect.

Carnations and Picotees are propagated by layering the side shoots, and at the proper time attention will be directed to this important part of the gardener's work. Pinks, however, are propagated by "pipings" as they are termed, or cuttings made from the side-shoots, which a strong plant generally throws up profusely, but much depends on the variety.

PROPAGATING PINKS.—When the side-shoots are taken off and made into cuttings the usual rule is to put them thickly with a very sandy soil, and cover them with a hand-glass. Those who require to have a good stock of Pinks make up a bed on a heap of leaves or dung that has become cool, and plant their pipings on it in little squares that the hand-glasses will just fit. This is rendered necessary in the case of those who propagate largely, in consequence of having to increase certain varieties of a weakly constitution. They will only strike on condition of being treated in this way, and even then sometimes with difficulty.

The Pinks generally found in Villa Gardens are always of a hardy character, and cuttings strike much more readily. We have known a bed made on a shady border, and the pipings being put into them strike freely. Our cuttings are yearly struck in a bed used for striking Pansy cuttings; it is in a shady cool position, under a north wall, and it is seldom they fail to root. The soil is light and sandy, but it is pressed firmly about the cuttings.

Not long since a writer in the *Florist and Pomologist* alluded to an easy plan for striking Pink cuttings, which can be commended to Villa gardeners. It came about as the result of a mere accidental occurrence. A quantity of Pink pipings was prepared, and tied in a bundle, and then placed on one side in a flower-pot containing some damp moss and a little water. They were forgotten, and allowed to remain for a few days, and on examination it was found that the cuttings had begun to draw root. The writer stated he had since tried the plan, and so found it to answer well—the plants growing freely when planted out in some nice light soil after being struck in the moss. This is worth attempting. Pink pipings should be taken as early as possible, in order that they may be rooted quickly, and so grow into strong plants by the autumn when planted out. Late pipings fail to strike until too late to do much good, scarcely even becoming strong enough to flower the following spring.

Garden Operations.

FLOWER GARDEN.

The summer bedding plants ought now all to be out. The showers of the past and present week have been most favourable for the accomplishment of this, and by the time this appears in print we shall have finished the planting of all kinds, and have made a commencement to put the same into form in the beds, by pegging straggling growers, such as Heliotropes, Petunias, Verbenas, Ageratums, and Pelargonium Manglesii. Gnaphalium lanatum we use for divisional lines, and this also requires pegging into position ere anything like order is discerned in the arrangements. Subtropical plants, such as Castor-oils, Wigandias, Acacia lophantha, Ficus elastica, Solanums, Abutilons, and all plants likely to be injured by wind, should be staked at once. A day or two's neglect in this respect may cause great injury and annoyance, for, most of them having large foliage, the wind has great power over them; hence they are soon broken if not tied or otherwise protected. If beds or masses of large-growing subtropical plants, which must necessarily be planted thinly, were carpeted with an undergrowth of some low-growing plants, their appearance would be much enhanced. For this purpose the following kinds are well suited, viz., the variegated and green Periwinkles, Euonymus, the variegated varieties; Festuca glauca and F. viridis; Sedums, several varieties; Pelargoniums Lady Plymouth and Mangles' variegated; Iresine, Coleus, Amaranthus, Gnaphalium, and Golden Feather Pyrethrum. Of course those kinds should be selected which contrast or harmonise best with the subtropicals. When the unavoidable litter connected with bedding-out has been cleared away let the walks and edgings receive attention. The former should not be hoed—I never yet saw good walks, or that one could walk over with pleasure, by this mode of keeping them. Hand-weeding and rolling in showery weather is the best method and by far the most economical, the process of hand-weeding being formidable in name only. Box edgings may now be clipped, in doing which care should be taken not to cut into the old wood—a very common error, but as easy to avoid as to do. Evergreen hedges will also now require clipping or knifing-in; Privet and Yew should be clipped, but Portugal and common Laurels, Thujopsis and Cupressus look best if a knife only is used. Many of the earlier hybrid kinds of Rhododendrons and Ghent Azaleas having now done flowering; their seed-pods should be removed, for, besides the neater appearance given, lasting benefit is thereby assured to the plants. Keep the clumps free from weeds by occasional surface-hoeing among established plants. Newly planted ones should be thickly mulched, and, if the weather be dry, watering will be requisite to start them into growth. Since the change in the weather Roses have grown amazingly. Water in plenty, top and bottom, is now their one great requisite. Keep fly in check by syringing with soapsuds or tobacco-water. *W. Wildsmith.*

FRUIT HOUSES.

PINES.—In those houses where the ripening of the fruit is proceeding diminish the amount of moisture which has been maintained through the preceding growing period, and under the influence of suitable external conditions ventilate liberally, but without suffering the temperature within the house to fall much below 80°. These means, if properly applied, will greatly tend to enhance the perfection of the fruit in every respect. With such favourable climatal influences as will exist during the next three or four months, and with ordinary good treatment combined, fruits can be produced in this country to that degree of excellence which is not attainable even in the Azorian fruits, or those from other sunny climes. That grand old variety, the Queen Pine-apple, is usually coming in freely at this season; if the supply be very abundant, and it be necessary to prolong the season with them, some should be removed to a temperate place away from the effects of sunshine, and where there is a plentiful amount of air, and they will rest sound for a considerable period. The successional stock will now be making vigorous growth. Strive to secure it in a steady way by regularly attending to the ventilation. Put a chink of air on betimes in the morning on fine days, and increase or diminish the supply of it as may be requisite, so that the temperature inside the house does not get much below 80°. Attend to keeping the air about the plants, when the house is closed, moderately moist by syringing, &c., but avoid an excessive use of the syringe over the plants, because too much moisture applied in this way is calculated to operate detrimentally on those roots which issue from near the collar of the plant. By all means give due attention to watering; this very important matter should at all times be done with discretion. Keep a steady heat of about 80° at the roots, excepting in the case of newly-potted suckers or plants, when in such cases another 10° may be indulged in to accelerate root-action. If the night temperature in succession-houses does not fall below 65°, and that of fruiting-houses not below 70°, dispense with fire-heat for the purpose. *Geo. Thos. Miles, Wycombe Abbey Gardens.*

MELONS.—Directions given for the management of early Melons will in a great measure apply to successional crops. Full command of heat and light given, the secret of success in Melon growing will be found in free, sturdy growth from the seed without a check. If the compost is suitable but little feeding is necessary, indeed it is often injurious, if applied before the fruit is set. After a set has been secured the plants, particularly if grown in pots, should receive generous treatment until the fruit has attained its full size, when water must gradually be withheld to ensure high flavour. The old system of growing Melons in large masses of soil is in many places giving way to the more expeditious one of cultivation in pots. Perhaps this system is attended with a little more trouble than that of growing on the extension principle, but a much smaller quantity of soil will suffice, stimulants can be applied when wanted, a great number of plants can be grown in a small space, quality can always be insured. Melons, like Pines, always give the best fruit when grown with free healthy roots without a check. Red-spider is placed at a discount, as the structure can be cleaned after each set of plants is removed; and if efficiently heated, two and sometimes three crops of fruit can be taken in time for winter Cucumbers to follow. *W. Coleman.*

KITCHEN GARDEN.

The getting out and planting the various autumn and winter crops will now require a large share of attention, and must be proceeded with diligently on all favourable occasions. Much of the success attending the cultivation of these depends on the kind of start they get, and therefore no pains should be spared to render the conditions as favourable as possible. If pricked out from the seed-bed, so as to pull with plenty of fibre, the state of the weather at the time of transplanting need scarce be considered, as it will have but little effect on them; but if they have to be transferred direct to the open quarters a dull, showery time should be chosen for the operation. Plants that have been allowed to stand thickly together till the time of transplanting, besides being drawn and weakly, get their stems and leaf-stalks in a semi-blanched state, in which condition the sun and air dries up the tissues, and draws much of the vitality out of them. In light, loose soils the old-fashioned plan of dipping the roots in a thin liquid made of clay, cow-dung, and water may with advantage be resorted to; but this only becomes necessary when the weather is excessively hot and dry at the time of getting the plants out. A good watering once or twice, poured with some force through the spout or coarse rose of a pot, so as to settle the earth well about them, is generally sufficient to give a fair start, after which they will take care of themselves. The next planting of Cauliflower should be made where they can have partial shade, and in such a position that water can be readily supplied to them as soon as the weather sets in dry and renders its use necessary. To get these at all presentable during August and September they must be grown freely without check from the time they leave the seed-bed till ready for use. Those now turning-in, and others advancing towards that stage, should have plenty of manure, so as to induce fine close compact heads. Continue to sow Lettuce in drills where they can stand to complete their growth, making choice of a rich deep piece of ground for the purpose. When so treated, few, if any, will be found to run to seed, which they are almost sure to do after having the tap-roots broken, and receiving the check that is quite unavoidable when transplanted, even under the most favourable state of the weather and other circumstances. The final planting of Celery ought now to be made, to afford a long season's growth, without which heads of full size can scarcely be expected. There is little to be gained as regards room by having more than one row of this in a trench, on account of the greater distance the plants have to be placed from each other, and, as single rows are more manageable both in earthing and wintering, they are far preferable. The ditch-like trenches one often sees made for the purpose of growing Celery in, is one of the greatest mistakes possible, as the plants have nothing but the dead, inert subsoil to grow in, besides being sunk too far from the sun and air, where they must inevitably rot after copious rainfalls in the autumn. Where this esteemed vegetable has to be grown in dry light soils, the coolest manures, such as that from cows, sheep, or pigs, should be chosen to work into the trenches; but whatever is used must not be new or rank, or the plants will make no progress. Owing to the cold late season there will be but little chance for Chilis and Capsicums ripening out-of-doors, unless the plants are now strong and can be planted at the foot of south walls or other favourable positions, where they can get the full benefit of the sun nearly the whole of the day. It is best, however, where these are much in request, to plant them out in a pit or frame, that they may be closed early and forwarded in that way. The increasing demand there is for Tomatos renders it imperative that every vacant space on walls should be made use of, and even then the supply is often inadequate unless the season should turn out unusually favourable for their production. Where there are any old spare lights, pits, or frames at liberty they may now be profitably turned to account for sheltering and forwarding plants of these either turned out or in pots, which when so treated will not only precede those on walls but may be had long after they are destroyed by frost or cease to ripen satisfactorily. Any that have been recently planted out must be closely looked after and not allowed to suffer for want of water, as the roots have not yet had time to penetrate the surrounding soil, and are, therefore, living on the moisture contained in the old ball. Peas are unusually late this year, and the cutting of Asparagus has generally to be continued till a supply of these can be obtained. It should be borne in mind, however, that this has a very weakening effect on the plants, and if carried on too long is done at the expense of next season's crop, as the quality and quantity obtained then depends on the kinds of growth made during the present summer. To strengthen and assist this as much as possible, the beds after being well cleaned should have a good dressing of soot, salt, and guano, or some other strong stimulating manure, and if from time to time they can be supplied with it in a liquid form, the results will be very beneficial. Asparagus cannot well be overdone with manure at this season of the year, and in addition to the above a mulching of rich rotten stuff placed in the alleys or all over the beds will be of great service. The late rains have been very favourable for Strawberries, and in order that they may derive the fullest benefit from the moisture contained in the soil, the beds should at once be littered down to prevent its escape by evaporation. If this is done before the flower-stems are borne down by the fast swelling fruit, much time and trouble will be saved in placing the litter closely around the plants, independently of the good it does in other respects by being put on early. *J. Sheppard, Woolverstone Park.*

THE

Gardeners' Chronicle.

SATURDAY, JUNE 10, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	June 13	— South Essex Floricultural Society's Show.
WEDNESDAY,	June 14	{ Grand Floral Fête at York (three days). Royal Agricultural and Horticultural Society of Jersey: Great Rose Show
THURSDAY,	June 15	— Meeting of the Linnean Society, at 8 P.M.
FRIDAY,	June 16	{ Crystal Palace Rose Show (two days). Scottish Pansy Society's Show.

AT the time of the passing of the SEED ADULTERATION BILL (see our volume for 1869, p. 939, where the text of the Bill is given), it was feared by some that colouring Trefoil and white Clover might be proceeded with as before. We were at the pains at the time to get legal opinion as to this point, and we were informed that the act of dyeing or colouring constituted a fraud within the meaning of the Act. It was, therefore, not unreasonable to hope that such fraudulent practices would be stopped by the Act in question. That such has not been the case is but too painfully apparent from the report of a case printed at length in our last issue. The evidence there given confirms the numerous rumours and insufficiently authenticated statements that have reached us from time to time. It will be remembered that the Act in question originated with sundry members of the seed trade, and that it was pushed through Parliament mainly by their exertions. It is, therefore, a great disappointment to find that to all appearance the trade, as a body, have taken no steps to secure that the good effects intended by the Act should be duly secured. As it is, we have in the report of the recent trial a repetition to some extent of that kind of evidence of which so many samples were published in the Report of the Select Committee of the House of Commons appointed to inquire into the matter. One merchant, for instance, is reported to have said that the word "fine," as applied to seed, meant that the seed was a little brighter in colour and appearance. Another stated that the words "fine," "super," and other expressions of a similar character, implied no guarantee, classification, or quality of seed.

All the merchants called stated that it was not the custom of the trade to guarantee the growth of the seed they sold. The plaintiff in the particular case on which our remarks are founded sold certain seed by sample to the defendant. The defendant retailed the seed to his customers, and on getting complaints from them as to the growth of the seed had some of it analysed by a competent analyst. Having in this way ascertained that the seed in question had been doctored, he (the defendant in the present action) declined to pay for the seed. Thereupon the plaintiffs, who supplied the seed in the first instance, brought an action against the defendant for the amount of their bill.

No serious attempt was made to disprove Mr. DYER'S evidence that the seed had been doctored, and we may therefore consider his statement as unassailable. No evidence was adduced to show by whom the seed was doctored, and it was not suggested that either the defendant or the plaintiff had been guilty of such trickery. The Judge expressly stated that it was a question between two innocent parties, as to which should suffer.

The seed had been bought by sample, and the bulk was as good as the sample, hence the Judge directed the jury to return a verdict for the plaintiff, giving the defendant an opportunity "of having the matter put right." We do not know exactly what is the exact meaning to be attached to these latter words, but as the subject may come again before the Courts it is better to defer further comments on this particular case.

Speaking generally, however, and without any reference to any particular case, it seems hard on the public that when they deal in open market with firms reputed to be respectable they should be liable to have rubbish palmed off upon them. Of course we shall be told that the purchaser ought to look to his own interests—*caveat emptor*, and so on; but, on the other hand, we might reasonably expect that the dealer has a reputation to maintain, and that he would take proper care that he neither bought nor sold an adulterated article.

The Seed Adulteration Bill provides that "every person who, with intent to defraud, or to enable another person to defraud, . . . sells or causes to be sold any killed or dyed seed, shall be punished," &c. It may be very difficult to prove any intent to defraud on the part of the seller, whether wholesale or retail, and indeed no such intent may exist. But, assuming that there is no intention to defraud, the merchant who, unknowingly and innocently deals in dyed seeds, stands thereby condemned either of great carelessness or of ignorance of his business. It is hard to suppose a dealer of any experience either not knowing a dyed sample of Trefoil when he sees it, or not taking means to ascertain the growing average of the seed he purposes to deal in. Great art and ingenuity are displayed, especially in Germany, in the doctoring of seeds; but, in the hands of the chemist, detection is generally easy, and the dealers and farmers have always the germination test to fall back upon.

If the merchants will not exercise the power they have of stamping this pest out, some outside pressure should be put upon them. The consumers should protect themselves by appointing an inspector to take samples and have them analysed. It would not be necessary to prove fraud, nor need fraudulent practices on the part of the dealers be even hinted at. It would suffice to make public the fact that an adulterated sample was purchased of Messrs. So-and-so, to make that firm a little more careful in its mode of conducting business.

With reference to this matter, we are glad to see that some of the Scotch firms have called a meeting in Edinburgh, on the 14th inst., "to consider some most important matters relative to the seed trade of the country, especially the working of the Seed Adulteration Act, and some better means of enforcing its provisions." We trust that their deliberations may have some good effect in protecting alike the honest dealers and the innocent public.

—— A MEETING was held at the Royal Horticultural Society on Friday last, Dr. HOGG, Secretary of the Society, in the chair, for the purpose of considering what steps should be taken to commemorate the services to horticulture of the late LOUIS VAN HOUTTE. It was resolved to open a subscription list for the purpose of founding a prize to be called the VAN HOUTTE PRIZE (probably a medal) to be awarded at the quinquennial exhibitions at Ghent. A committee was formed, with power to add to their number, for the purpose of giving effect to the resolution, and, though the number present was but small, about fifty guineas were at once subscribed in the room. From the numerous letters received, it is obvious that the movement has the hearty support of the leading nurserymen of the country. Dr. HOGG, 171, Fleet Street, E.C., was named Chairman of the Committee; Dr. MASTERS, 41, Wellington Street, Covent Garden, Treasurer; and Mr. HARRY VEITCH, King's Road, Chelsea, Secretary to the Committee. Subscriptions may be paid to either of those gentlemen, or to any member of the Committee.

—— The fine collection of Hollies, Rhododendrons, Conifers, and other evergreens, exhibited by Messrs. VEITCH at the Philadelphia Exhibition, previously alluded to, has been presented by the firm to the Fairmount Park Commission. The donors gave the British Centennial Commissioners authority to select an Institution on which to bestow the gift, and Colonel SANDFORD and Professor ARCHER, as the *Philadelphia Ledger* says, with excellent judgment selected the Fairmount Park. We trust that the shrubs may long remain as a memento of British horlticnture and international good feeling.

—— One of the sights of Rio Janeiro is the avenue of Royal Palms constituting the main walk of the Botanic Garden. Our illustration (fig. 138) is taken from a photograph, and serves to give some idea of the noble aspect presented by these truly Royal Palms. We take from Mr. HINCHLIFF'S most interesting book, lately published by Messrs. LONGMAN under the title of *Over the Sea and Far Away*, a short notice of these fine trees and of the garden of which they constitute so striking a feature:—

"The car stops at the very gate of the garden, where a startling effect is always awaiting a visitor for the first time. An avenue of one-third of a mile in length is formed by a double row of Cabbage Palms (Oreodoxa regia), lining the broad path which intersects the garden. These noble Palms are 100 feet high, and have grown with such marvellous regularity that their crowns meet in a continuous arch, as if composed of glorified Corinthian capitals. There is a shorter similar avenue at right angles to the first, and in clear weather it is a charming sight to look up those tall pearl-grey stems to the shining green of leaves gently rustling under the 'central blue.' I was making notes one day at the foot of one of these giants when I heard a swishing sort of noise overhead, like that of heavy rain, though the sky was cloudless; and a bystander had just time to warn me from the spot when a dead leaf about 20 feet long, with a stem as thick as my arm, fell exactly where I had been sitting. It was just as if the Royal Palm had thrown down a leaf to enable the stranger to form some notion of his noble proportions.

"Right and left are broad lawns planted with trees from various tropical regions, varied by flower-beds and artificial pools of water, gay with Lilies, and shaded by overhanging masses of Bamboos. Here were Palms and Screw Pines, Camphor trees, immense Aloes, Sago Palms (Cycas circinalis), Mangos, and Plantains, but the handsomest foliage is that of the Bread-fruit tree (Artocarpus incisa), to which my attention was first called by one of its fruits falling on the path close by us, with so heavy a thud as to leave no doubt about a headache at all events for any one upon whom it might have chanced to drop. At the back of the gardens cultivation blends gradually with primitive simplicity, and they are only separated by a narrow ditch from the tangled jungle and confused masses of rocks which surround the base of the Corcovado and other mountains in the neighbourhood."

—— The Whit-Tuesday evening FLOWER SERMON was preached this year, as usual, at St. Katherine Cree Church, Leadenhall Street, by the Rector, the Rev. W. MEYNELL WHITTEMORE, D.D. According to request, most of the young people present brought nosegays with them. The charity children in the front gallery, in particular, had all been supplied with flowers, and the boys and girls, each with a bouquet, presented a pretty sight. But for the high pews the parterres would have been as conspicuous and as well worth seeing below. It is now twenty-three years since Dr. WHITTEMORE preached the first flower sermon, thinking thus to interest the hearts of the more youthful portion of his parishioners in the truths of religion. Yearly, besides the show of flowers in the hands of the congregation, there is always a bouquet in the pulpit, which the preacher never fails to smell before beginning his discourse. It was first presented by a little girl, who is now a grown-up woman with children. It was there on this Whit-Tuesday, and was not overlooked by the Rector. The chorus of the first hymn was:—

"We come with flowers to greet you,
We come with flowers again."

The second, sung after the third Collect, began:—

"There's beauty in the meadow,
Adorned with vernal flowers."

The third, an original, by NETTA LEIGH, was sung next before the sermon, and flowers formed the theme throughout. It was very interesting to observe how, at the close of the service, when the congregation were dispersing, the gutter children clustered round the door of the church, begging eagerly for the flowers, which were scattered with no niggard hands by their little friends, to whom Providence had been more kind. *Times*.

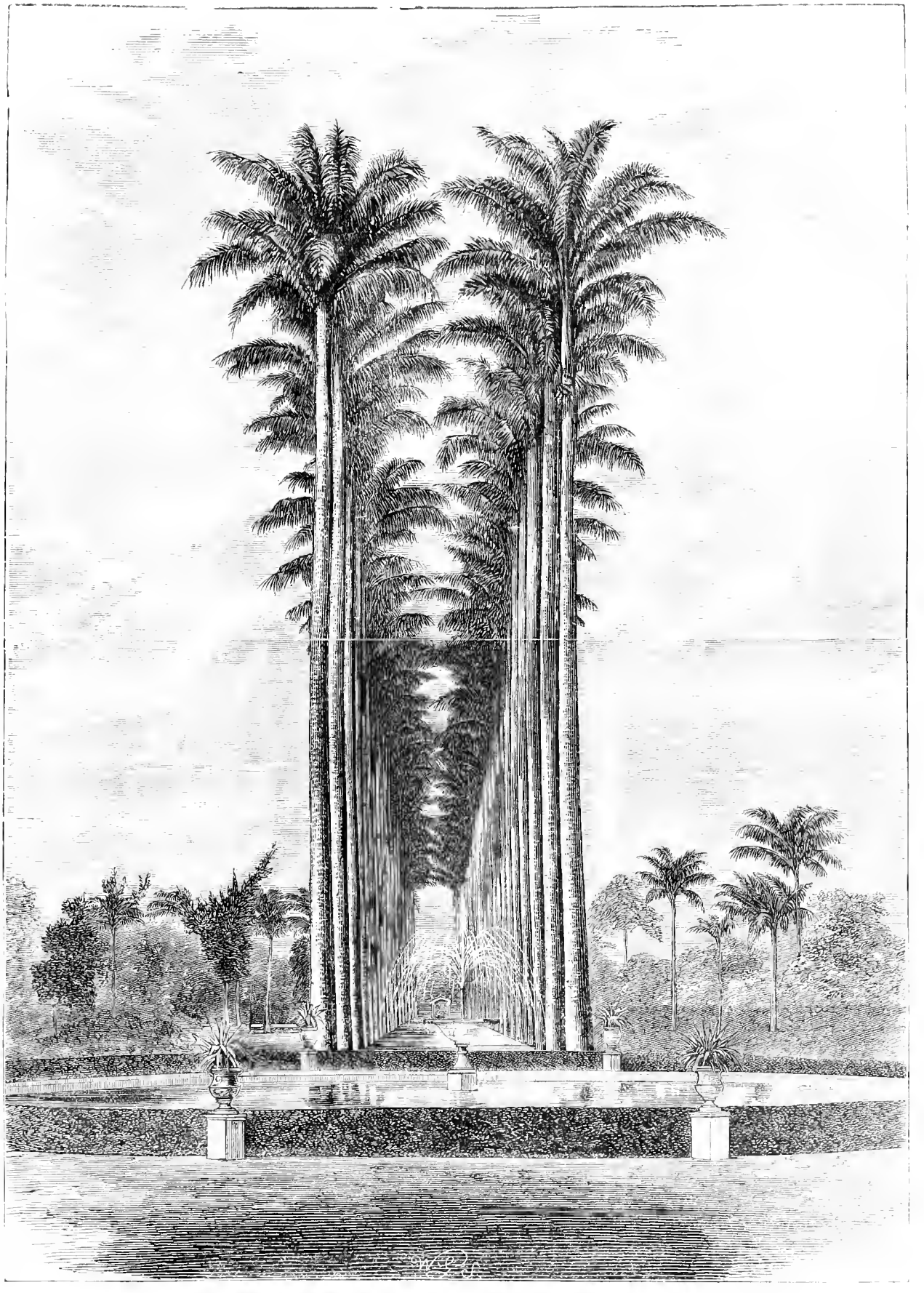

FIG. 138.—THE PALM AVENUE, BOTANIC GARDENS, RIO JANEIRO (SEE P. 760).

—— The Lord MAYOR and Lady MAYORESS, accompanied by the Sheriffs of London and Middlesex, paid a visit to Messrs. SUTTON & SONS' seed establishment at Reading on Wednesday last, and were conducted through the various rooms, including the reading-room and lecture hall, by Mr. MARTIN HOPE SUTTON and Mr. ALFRED SUTTON. The Lady MAYORESS accepted from Mr. MARTIN SUTTON a bouquet of choice Roses cut from his conservatory at Cintra Lodge.

—— The arrangements for the GRAND FLOWER SHOW AT SOUTHPORT are now complete. It will open on Wednesday, July 5, continue till the end of the week, and, if everything goes well, probably be one of the most beautiful of the season. About eighteen months ago we gave an account of the establishment at Southport, called the Aquarium and Winter Gardens. Both names are well deserved, for the reality of each department is carefully maintained; and it is but fair to add that there is now also a pleasant and interesting summer garden, not devoted, of course, to severely botanical purposes, but supplying a delightful and flowery promenade. The show will be held in a tent upon the lawn—a wiser plan than was originally contemplated, for the shifting so great a portion of the conservatory plants as would have been necessary in order to procure sufficient space, even if room enough had been obtained, would have involved prodigious labour. A tent, moreover, which gives protection from the burning rays of the sun is always the best kind of receptacle for a miscellaneous collection of flower-show plants, many of which find themselves in quarters very different from those they occupy at home.

—— His Majesty the King of the BELGIANS, attended by the Comte d'OUTTREMONT, M. JULES DEVAUX and Viscount TORRINGTON, visited the Royal Aquarium on Friday, June 2, and was conducted through the building by Mr. S. COLEMAN, the manager, and General COTTON, the Deputy Chairman of the Society. His Majesty signified his approval of the floral arrangements of Mr. WILLS. Mr. BEDBOROUGH, the architect, and Mr. EDGCUMBE RENDLE, the inventor of the new system of glazing, which was first carried out on a large scale at the Royal Aquarium, explained to the King the method of fixing the glass on the new principle, and his Majesty was pleased at the rapid manner in which the glass could be removed and refixed.

—— It has now become a frequent practice for horticultural societies in the provinces to offer prizes for a GROUP OF PLANTS arranged in a given space, the value to be estimated in a great measure by the taste displayed in the arrangement. The aim of the donors of such prizes is, it is presumed, to improve the mode of arranging plants in greenhouses and conservatories—too commonly seen as a higgledy-piggledy crowding of many subjects, in which no single plant is displayed to the best advantage. Another aim—and perhaps the leading one—is to secure bold masses of plants with which to give effect to a flower-show tent. We have frequently looked over these groups, and confess to much disappointment with them. If it be desired to promote a better arrangement of plants in houses, then these groups can be estimated according to the extent to which this purpose is approximately served. A very good test is to inquire how would such a group of plants look were it occupying a similar position and space on the floor of a conservatory? The powers of the person arranging the plants are, perhaps, somewhat confined by the space in the schedules being invariably a square one, so many feet each way being specified. The general tendency is to crowd the plants together, to such a degree as to suggest the idea that the exhibitor deems it necessary to hide every inch of floor. Thus it often happens that these groups are made up of inferior plants packed as closely together as they can well be; a flat surface is a common characteristic, like that of a flower-bed—as if undulations were not compatible with good taste and effective arrangement. Too often the tasteful notions of the grouper do not rise beyond the lines of colour in a ribbon border—blue and white, red and yellow being plentifully present, with a green edging in the front. Sometimes judges are inclined to withhold the prizes offered, but it is invariably represented to them that this step would cause a great deal of dissatisfaction and result in harm to the society; and this encouragement to mediocre grouping keeps the feature at a dead level of uniform execution. A better style of plants, and a much less quantity of them, is needed in these groups. The plants should be so arranged as to display any individuality of character, of habit, flower, and colour. Judges could then take into their estimate any cultural skill shown in the plants: according to the present method good plants are scarcely of any service. Perhaps it is necessary to remind judges that it may not be always right to distinguish prominently groups that are very gay and effective in point of colour for the moment, but which are not of a lasting character; and were the flowers stripped from the plants, the last might be of very little value. There is reason to believe that those who frame these classes scarcely comprehend what they really require. The idea is a good one, and may be made to serve practical uses; but its illustrations are only rarely of a character likely to be productive of such results.

—— Under the name of ANDRÉ LEROY, M. CARRIÈRE, in the *Revue Horticole*, describes and gives a coloured figure of a NEW FREE-STONE PEACH of large size, with a slight nipple at the summit, of a pale colour, deeper next the sun. The flesh is whitish, melting, of a very agreeable flavour. The stone is oval, flattish, deeply furrowed; the leaves are glandular. The fruit is stated to be of first-rate quality.

—— Mr. J. S. IRELAND, formerly manager of Messrs. THOMAS METHVEN & SON'S seed department, and Mr. D. W. THOMSON, son of Mr. DAVID THOMSON, of Drumlanrig, have entered into partnership for the purpose of carrying on a general nursery and seed trade in Edinburgh. The new firm will trade under the style and title of IRELAND & THOMSON. Their nurseries are at Craigleith, Comely Bank; and the seed warehouse is at 20A, Waterloo Place.

—— The June number of the *Florist and Pomologist* has two coloured plates, one representing the WORCESTER PEARMAIN APPLE, a medium-sized, conical, truncate, very regular-shaped Apple, with a brilliant red colour dotted with fawn-coloured spots. The flesh is very pleasantly flavoured. It ripens in August and September, and will keep till Christmas. The stock of this desirable Apple is held by Mr. SMITH, of Worcester. The other plate represents two fine varieties of Clematis raised by Mr. JACKMAN. Duchess of Teck is an early-flowering variety, with large white flowers, 6—8 inches in diameter, and of perfectly regular form. Countess of Lovelace is a flower in the form of John Gould Veitch, but of a deeper colour and with broader petals. A notable feature of this periodical is the increased attention paid to florists' flowers, as the Carnation and the Auricula.

—— We learn from the *Journal of Botany* that the Australian collections made by the late ROBERT BROWN when serving as naturalist in the *Investigator* will soon be accessible to the public. The importance of this collection, as containing many of BROWN'S types, is naturally very great. According to the directions left by the late J. J. BENNETT, to whom BROWN bequeathed his collections, the officers of the British Museum will now select for that institution a complete set of specimens. Kew is to be allowed a second set, and the remainder will be offered to the herbarium of the Royal Botanic Gardens, Edinburgh. Thus this valuable collection, which has for so many years been almost as a sealed book, will at length be made available.

—— According to some statistics given in the *Revue de l'Horticulture Belge*, 306 medals were given at the late BRUSSELS INTERNATIONAL EXHIBITION, of which six were taken by German exhibitors, thirty-eight by Englishmen, six by French exhibitors, twenty-eight by the Dutch, while one went to Portugal, making in all seventy-nine medals of various descriptions awarded to foreigners. Two hundred and twenty-seven medals were taken by Belgian exhibitors, of which 110 went to Ghent, seventy-one to Brussels, fifteen to Antwerp, thirteen to Liège, and the remainder to various other towns.

—— A recent report on the TRADE OF MESSINA says:—The Lemon trees have been attacked with a sort of malady not yet understood, which threatens to destroy the greater part of the produce. Some of the landed proprietors have already made a new plantation of Bitter Orange trees, and after two or three years' growth they intend grafting them with the buds of Lemon trees, so as to prevent any further destruction.

—— The last part of BAILLON'S *Histoire des Plantes* is devoted to monographs of Castaneaceæ (including Birches, Alders, Oaks, and Chestnuts), Combretaceæ, and Rhizophoraceæ. The illustrations continue of the same accurate and beautifully executed character as heretofore.

—— Dr. ERNST describes in the June number of the *Journal of Botany* a plant of CEREUS SWARTZII, the trunk of which he calculated measured 56 feet in height. At 3 feet from the ground it had a diameter of 18 inches, and at about 30 feet from the ground it divided into fourteen large branches.

—— The June number of the *Revue de l'Horticulture Belge* opens with a coloured plate of a variety of Hoteia japonica with gold-variegated leaves. In the course of the article it is mentioned that the type-plant, that is the green-leaved form, is sent from Ghent to England by hundreds of thousands every year. A portrait and biographical notice of the late LOUIS VAN HOUTTE are also given.

Home Correspondence.

Paprika, or Hungarian Pepper.—In the number of your highly-esteemed *Gardeners' Chronicle* for May 20, p. 670, one of your subscribers expresses a wish to procure a sample of "Paprika," not "Pabrika," as there incorrectly spelt. Having now in my possession Hungarian Paprika fruits, I beg to offer you some, which I send off by to-day's post. Paprika is nothing more than the Hungarian translation of Cayenne or Spanish Pepper, which is very extensively cultivated in Hungary, and is commonly employed as a condiment, in the ground condition, in every household. The most celebrated and the best-flavoured Paprika grows in the neighbourhood of the town of Szegedin. *Herrman A. Frommes, Buda-Pesth, Hungary, May 23.*

Narcissus biflorus.—At p. 700 "H.," of Colchester, speaks of the Narcissus biflorus growing in great profusion in a locality known to him. He appears to think it a very rare flower: it certainly is not very common, but it is more so than he thinks. I gathered it last year in a lone place not far from the cliff in the north-west part of the Isle of Wight. It was in great profusion, and had every appearance of being native. As to whether the N. biflorus is indigenous or not I am not qualified to judge, but I have long thought that those plants which some botanists consider doubtful, and yet are found in localities far from any garden, should have their "characters" cleared, or their claims to be native disproved by plain facts, by those who unwillingly give them a place in our Floras. *H. E. Wilkinson, Anerley, S.E., June 2.* [See p. 731. EDS.]

Paulownia and Clianthus.—It may be interesting to your correspondent to know that Paulownia imperialis is now in full bloom in Colonel Harcourt's garden at St. Clare in this parish. It is quite a large tree, and literally covered with its beautiful Gloxinia-like blossoms. It is about ten years old, I believe, and it seems to come into bloom every year. I can endorse what another of your correspondents says about the Clianthus puniceus and C. magnificus. They have been planted against the south wall of my church, and nothing could look better than they do. Of course, we have very exceptional advantages in the Isle of Wight, but I am sure that Paulownia imperialis and Clianthus magnificus should be grown in any place where the climate at all resembles what we have here. *Henry Ewbank, St. John's, Ryde.* [A large tree of the Paulownia in the pleasure-grounds at Linton Park, Kent, is also flowering most freely. EDS.]

Kitchen Garden on a Rock.—I am about to make a kitchen garden on ground which is at present ordinary pasture-land, lies high, is well sheltered from the north, and is on a good slope to the south throughout. There is a uniform depth of about 13 or 14 inches of good yellow loam, but then comes rock, full of iron and generally very hard, but its top layer is flaky and breaks up fairly well. The existence of this rock so near the surface is of course bad, but circumstances make it compulsory for me to use this par-

ticular ground. Will any of your readers through the medium of your columns kindly give me some advice as to draining and general preparation of the soil for gardening purposes under the peculiar circumstances I mention, or recommend me a good work on the subject? *H. C. N.*

Abney Hall, Cheadle, Cheshire. — There is always great pleasure in seeing good plants nicely managed, it was, therefore, with particular satisfaction that a few days ago I saw at Sir Jas. Watt's some of the most beautiful and naturally-trained Azaleas that have for a long time come in my way, with other very good conservatory flowers; and in the hothouses a large variety of the most beautiful things in cultivation, every one of them quite a picture. Mr. Mackellar, however, has not only a heart for flowers. I have sometimes thought that a good old saying, directed to man's moral doings, might be applied also to gardeners' work: "By their fruits ye shall know them." Certainly a gardener is never better employed than when he is striving to improve the quality, and to augment the quantity within prudent limits, of his Peaches and Strawberries, Pears, Melons, and Grapes, supplementing his work on the fruits with collateral efforts in the kitchen garden. The flower precedes the fruit, just as the leaf precedes the flower; it is well for him accordingly to take things in their natural order, still never resting content till he has achieved perfection in the matter of fruits. Mr. Mackellar is quite alive to this. I wish you could see his crop of Peaches and Nectarines, and, above all, the magnificent Grapes. Two sorts of Black Hamburgh are grown at Abney Hall—two of the oldest and best, and on the other side the White Muscat of Alexandria. Nothing in Grapes can surpass the beautiful appearance, the colour, and fatness, of the clusters of White Muscat now hanging from the canes. I dare say there are plenty as good elsewhere, but it is well to place on record where examples of such things exist. *C.*

Potato Notes.—Slowly but surely the Potato crop has this year appeared above-ground, exhibiting none of those blanks and that curled malformed leafage that so largely prevailed last year amongst the American kinds. Already there are indications that the fears entertained that the American sorts would die out are groundless, as the vigour shown by them is equal to their old form, and the foliage is as robust as that of their English brethren. The disease last autumn was of the true rotten type, and did its work thoroughly, leaving no tubers partially affected with the dry rot to be planted this year; thus the seed was sound and healthy, and a corresponding healthy growth seems to follow. Alpha, a new first early American kind, was last year notoriously weak, and the produce small, yet this season the haulm is remarkably vigorous, and has already attained to a stronger growth than was produced at any time last season. Thorburn's Paragon, Snowflake, and Early Rose, all very much affected last year, are showing a vigorous growth this season, so that it is not improoable that the alarm spread on their account last year will be more than counteracted this year. It is only in exceptionally exposed places that the haulm has suffered from frost, although since it appeared above-ground there has been some very sharp nights and prevailing east winds. These latter, however, proved effective in keeping the foliage dry at night, and prevented much mischief. Fortunately, also, the prevalent cold kept the growth in check, so that only the earliest planted kinds were sufficiently above-ground to be affected. Growers are becoming more and more alive to the evils of planting too early, as no haulm is safe from the late frosts if above-ground before the beginning of May, except in sheltered places. Nips of frost, if ever so slight, invariably affect the growth for the worst, and the haulm of those planted a week or two later will come through untouched and with greater vigour, catch up the frost-bitten growth, and often pass it in the race. Without doubt the plan some persons adopt of planting the latest kinds first, and the earliest at the last, is a good one, and worthy of general adoption; and if the planting extends from the middle to the end of April it will be found by the end of May that all the growth is about even, but that every succeeding week will favour the earlier kinds, and, having grown away from the first rapidly and unchecked, it will be found that these are maturing their crop quite as early as if planted a month previously. Too much stress cannot be laid upon the necessity for abundant room between the rows, especially in the case of strong growing kinds, and the earthing-up at proper times to a sharp pitch, as this is proved to be the most successful mode of Potato culture. One of the results of the International Potato Show of last year has been to bring to the surface a large number of seedling and purely local kinds, and if they possess the merits ascribed to them they will be found in good form on the exhibition tables next autumn. From this cause alone a score of comparatively new kinds has been added to my own collection, which numbers about ninety kinds under name, but not a few will prove to be synonyms, I have no doubt. Some of Mr. Fenn's more recent seedlings show a robust and vigorous growth, that marks them out specially, amongst other kinds, and, judging by their cropping qualities last year, it is probable that these are in advance of any he has yet raised. The only genuine novelty this year from America is Ruby, a red-skin kind that has the colour of Vermont Beauty and the shape of Early Rose. This kind was grown last year at Chiswick, and came out well, and when exhibited at the Alexandra Palace was the only kind generally favoured amongst a batch of seedlings that were sent by those eminent Potato importers, Messrs. Bliss, of New York. By the way it is gratifying to hear that Mr. Bliss purposes to attend the next great Potato show, and will probably bring with him examples of American growth. It would add considerably to its international character if Irish, French, and Belgian samples could also be obtained, as on these countries we largely depend for our market supplies. So far the Potato has only been recognised as a garden esculent, but it is desirable that in any forthcoming exhibition some consideration should be given to its importance as an article of commerce. Among other interesting topics that have come to light is the information that the growers about Aberdeen have formed a sort of club and called it the Alexandra Club, the object being to raise enough money in weekly subscriptions to pay the expenses of a deputation to attend the show, and undertake the charge of all the Northern exhibits. *A. D.*

Composite Primrose. — The accompanying illustration (fig. 139) shows a Composite flower of Primrose wherein four flowers have, from some

FIG. 139.—COMPOSITE PRIMROSE.

cause or another, become confluent into a single blossom. Such cases are not uncommon, but it is rarely that they exist in so symmetrical a form as here shown. *Harrison Weir.*

Veronicas.—Your correspondent is quite correct—I did allude to the Germander Speedwell, and ought not to have made use of the word "common," seeing that the latter name is botanically given to the Veronica officinalis, though I only intended it to apply in the sense of often met with or generally seen flower; but I was wrong with regard to the time of flowering. It is only a few old books that say June and July; those I have since looked at mention May and June. This year it put in an appearance (here) in April. There are several sorts of Speedwell in this locality, all pretty, though not one of them can compare (in my opinion) with the Germander. An old herb gatherer I used to know in the days of my childhood, and who was looked upon by her Welsh neighbours as "a witch," made tea of the Germander leaves, and sweetened it with honey. I forget what she said it was "good for," but I remember tasting it once, and it was very nasty. *Helen E. Watney.*

Wild Flowers and Common Plants for Ornamental Hedges.—Privet will form a capital hedge for this purpose, and if wild Roses, Clematises, Honeysuckles, and the large blue Periwinkle are intermixed the result will be all that can be desired. I had such a hedge once to divide the kitchen garden from the flower beds. I wanted to shut out the Broccoli and Onion beds from sight of the dining-room windows, so I instituted a Privet hedge, ornamented with the plants described above. Their wild beauty served to counteract the set appearance of the "prim fruit," as the Privet is often termed, whilst the nearly evergreen foliage of the latter was very agreeable to look on in winter. The Privet was well pruned, so as to allow of the Honeysuckles and Periwinkles creeping through it. A few Foxgloves, the yellow Toad-flax, and Great Mullein, planted at the foot of such a hedge would improve it. I found these wild flowers very useful as garden plants in North Wales near the coast, on the island of Anglesea, where, the spot being a very exposed one, few flowers save the very hardy ones would grow. *Helen E. Watney.*

Apiary.

BEE STINGS AND THEIR REMEDIES.

"Such was the spell which round a wild man's arm
Twin'd in dark wreaths the fascinated swarm—
Bright o'er his breast the glittering legions led,
Or with a living garland bound his head.
His dext'rous hand, with firm yet hurtless hold,
Could seize the chief, known by her scales of gold,
Prune 'mid the wondering train her filmy wing,
Or o'er her folds the silken fetter fling."

There have been almost as many cures made public for the bee-sting as there are British apiarians. It is questionable, however, if many of them are really efficacious and thoroughly answer their purpose as genuine or perfect remedies. I suppose they work upon the principle of "no faith no cure."

When the honey-bee sends his barbed weapon through the skin and into the flesh of the human subject, it presses upon two small bags or receptacles for the poison (not unlike bladders in miniature) with which they are filled. When they are pressed upon by the force of the sting, the venom is instantly ejected up a very fine tube into the skin. I should first have stated that the sting of the bee is formed upon a similar principle to that of the nettle-sting, illustrating a beautiful natural law of "unity in variety." In both cases the finely polished sting is hollow from the point or tip to the base, where it joins the bag. Again, in both instances by direct pressure upon the bag, the poison is pushed up the hollow tube into the wound made to receive it. I am aware it has been stated in reference to the bee-sting that the bags containing the poison are worked by small muscles, but I think, if they are carefully examined, it will be found that the poison is ejected only by the pressure.

Immediately the venom comes into contact with the flesh a strange sensation is felt over the whole body, accompanied often with cold trembling of the limbs, and a fearful smarting pain just in the part where the sting has been inserted—a pain which cannot correctly be described. It is said the sensation experienced after being bitten by a serpent is precisely the same as in the case of the bee. In a few moments the poison is taken up and circulated with the blood over the whole system, although the smarting and swelling is experienced only in the place or part where the wound has been made. This is easily perceived by the flesh being slightly raised, like a small wart, of a white colour, showing that some deadly poison is at work. On each side of the sting from the point downwards are four small barbs or teeth, not unlike in appearance, when seen beneath the microscope, the edge of a fine saw. The bee sting differs from those of the wasp and hornet in this single exception—the wasp can sting frequently without either injuring itself or losing its sting; not so the domesticated honey-bee—in ninety-nine cases out of every hundred it loses its sting, also with it a part of the intestines, which must naturally result in its death. The reason why it cannot withdraw its weapon is that the teeth at the point act similarly to an arrow, especially in a fleshy or soft substance, but the wasp sting is devoid of the peculiar teeth, or barbs, therefore it can be withdrawn at pleasure. Archbishop Paley gives a good description of a bee sting, as follows:—

"The action of the sting affords an example of the union of chemistry and mechanism: of chemistry, in respect to the venom, which can produce such fearful effects; of mechanism, as the sting is a compound instrument. The machinery would have been comparatively useless had it not been for the chemical process, by which in the insect's body honey is converted into poison; and, on the other hand, the poison would have been ineffectual without an instrument to wound and a syringe to inject it. Upon examining the edge of a very keen razor by the microscope it appears as broad as the back of a pretty thick knife, rough, uneven, and full of notches and furrows, and so far from anything like sharpness, that an instrument as blunt as this seemed to be, would not serve to cleave wood. An exceedingly small needle

being also examined, it resembled a rough iron bar out of a smith's forge. The sting of a bee viewed through the same instrument showed everywhere a polish amazingly beautiful, without the least flaw, blemish, or inequality, and ended in a point too fine to be discerned."

Frequently the effects of the sting in persons who are susceptible, and with tender skins, is felt for many days, often even a week; and if the swollen part is irritated or rubbed at the end of that period the pain is again slightly felt. But it may be a slight satisfaction to such persons to know that the effect of the venom is not so violent in after years, certainly the sickly sensation, accompanied with the smarting pain, is not regarded with so much horror after being stung several times. Much also depends upon the state of the body at the time. If the skin is in a state of perspiration, or the body at a high temperature, and even when the person is slightly ailing with any disease, the effects are much more violent. The recorded instances are rare where it has been known to cause death, although the *Times* lately gave an account of a lady who had died after being stung by a bee. The writer is personally acquainted with a young lady who at the time was housekeeper to a medical man. It is not often members of the medical profession are bee-keepers, but the one referred to kept a very large apiary. The young lady, early one morning, passing by a large stock, a bee appeared to be determined to commit suicide, for it with angry hum pursued the lady, until just as she was entering the house it stung her behind the neck. In this instance death would probably have resulted had not assistance been near at hand, for in a moment she fell in a state of unconsciousness, in which she continued several hours; nor did she completely recover for several weeks.

When stung the first thing to be attended to is the removal of the sting from the flesh, for, if left to itself, it sinks deeper and deeper, all the time ejecting more and more of the venom; but if the sting is immediately removed very little of the venom can have been injected beneath the skin. It is easy to tender advice, but ofttimes difficult to follow the advice, no matter how valuable—so in this instance. The next thing to be attended to after removing the sting is not to rub or irritate the part. However, it is, I confess, a difficult thing to keep the fingers from the smarting and painful wound. If it is violently rubbed it puts the blood in active circulation, and so the poison taken up in the circulation is rapidly disseminated.

One of the remedies which has lately appeared in the newspapers, although it is very old, is to apply damp soil (earth) to the wound. This is said to act like a charm, and to take away immediately the pain and inflammation. The real fact is, that anything cold applied has a soothing influence for a limited period, such as cold water. This is also strongly recommended by many bee-keepers. Langstroth, the American bee-keeper, speaks highly in its favour for its mollifying effects. He thinks it dissolves the poison, and checks at once the after-inflammation. I have applied it direct from the pump when I was severely stung on the wrist and arm, but I cannot say it had more than a temporary influence.

The venom being of a strong acid nature, any alkali which will counteract it is useful as a remedy. On this and certainly scientific grounds many persons apply liquid ammonia, sometimes called hartshorn, but it should be applied with care. The same remarks may be used in reference to liquor potassæ, which is also employed with beneficial results. In *Bee-Keeping for the Many* tobacco and its juice is recommended to be applied as follows:—"Take ordinary fine cut smoking or chewing tobacco, and lay a pinch of it in the hollow of your hand, and moisten it, and work it over until the juice appears quite dark-coloured, then apply it to the part stung, rubbing in the juice with the tobacco between your thumb and fingers, as with a sponge. As fast as the tobacco becomes dry, add a little moisture, and continue to rub and press out the juice upon the inflamed spot during five or ten minutes, and if applied soon after being stung it will cure in every case. Before I tried it, I was frequently laid up with swollen eyes and limbs for days; now it is an amusement to get stung." [A dangerous remedy. EDS.] Not having personally tested the tobacco remedy, I cannot vouch for its efficacy; yet it may, like the others, be of service if quickly applied. Doubtless its efficacy consists in the alkaline salts contained in the tobacco leaf, or from the saltpetre which is often used in its manufacture.

Plantain leaves (Waybread of Cheshire and Lancashire villagers) bruised and pressed on the wound are a reputed specific. Children when stung with the Nettle procure Dock leaves, and by beating the part violently bruise the leaves, at the same time repeating—

> "In Dock, out Nettle;
> Nettle in, Dock out:
> Dock remove the Nettle smart."

Longfellow in the "Song of Hiawatha" mentions bees as having followed the steps of the white man, and soon after he settles the Plantain also makes its appearance. It is a fact that the Plantain follows invariably the steps of the European, and from this circumstance it is called by the Indian "White Man's Foot;" from this also may have arisen its use when a person has been stung by a bee.

> "Wheresoe'er they move, before them
> Swarms the stinging fly, the Ahmo,
> Swarms the bee, the honey-maker;
> Wheresoe'er they tread, beneath them
> Springs a flower unknown among us,
> Springs the 'White Man's Foot' in blossom."

The juice of the Poppy allays the pain; this acts solely as a sedative. Laudanum prepared from Poppies will act much more speedily, still, the swelling or inflammation will not be arrested, with its after-effects. Mr. Wagner, a German apiarian, states that he always applies the juice from ripe Honeysuckle berries, and has never known it to fail as a remedy.

Every bee-keeper may have a special and never-failing cure, and I have mine, which I now make public. A few summers since, when I was staying in Shropshire, one Sabbath afternoon passing through a quiet village (Homer) I saw what to me was a joyous sight. In a cottage garden, under the superintendence of an aged widow, I was gratified by seeing, arranged in two rows, not less than forty strong stocks of bees. Looking over the hives without interfering with them, a bee, perhaps previously angered from some cause, without any warning, stung me just beneath the right eye. The old lady at once went into her cottage, and, bringing out her hair-oil bottle, commenced to rub the oil gently into the wound, with the happiest result—in fact I was overjoyed to feel the pain almost instantly cease, and the part was not afterwards at all inflamed or swollen. Previous to this, a bee's sting had a dreadful effect upon me—the swelling and smarting were both frightful. Ever since this, to me, well-remembered Sabbath, I have, when stung, without loss of time removed the sting and applied plain olive oil, rubbing it gently into the part, then a small quantity of tincture of arnica, and although I have since been stung hundreds of times, I have not in a single instance after applying the oil and arnica experienced the slightest inconvenience, so that a bee sting to me is now a matter of no moment, for the part, although very painful for a few seconds, never inflames; the pain as if by magic disappears, and I cannot perceive the slightest swelling.

As before stated some persons when stung faint and lose all self-command; in such cases it is well to have at hand, where it can be used without loss of time, a small quantity of sal-volatile, of which a teaspoonful should be taken internally in a tablespoonful of cold water; this will speedily remove the faintness.

I have known an apiarian to do nothing when stung but suck the part with his mouth if on the hands or arm, but in the busy honey season he suffered much from headache and loss of appetite, which I attributed to this practice. I have since found, when reading an American bee journal, that my supposition was correct; it would therefore be wise to bear this in memory, for in a little time, if the oldest living apiarian—Rev. W. C. Cotton, who went out with the first Bishop to New Zealand, and was successful in introducing the "stinging fly" to that colony—be correct, we shall be hardened to the venom, so that it will lose its power. His invariable practice is to apply honey to the wound, perhaps on the homœopathic doctrine, *Similia similibus curantur*. R.

Reports of Societies.

Royal Horticultural: *June* 7.—The President (Lord Aberdare) in the chair. At the ordinary general meeting at 3 o'clock only the official business, including the announcement of the awards, was transacted.

GREAT SUMMER SHOW.—This exhibition, the first large show of the year here, was held under the large exhibition tent at the bottom of the garden, and, except that it was rather thin, the show, on the whole, was an exceedingly good one, and most of the subjects one expects to see at a June exhibition were more or less well represented. Fine-foliage plants were shown in considerable numbers, and were unusually good in quality.

STOVE and GREENHOUSE flowering PLANTS were not so numerously represented in the classes as usual. There were only two competitors in the amateurs' class for a dozen, and the best of these came from Mrs. Torr, Garbrand Hall, Ewell (Mr. J. Child, gr.). They were a nice lot of fresh plants, the finest examples amongst them being of Chorozema rotundifolia, Aphelexis rosea and A. macrantha, Polygala dalmaisiana, Darwinia tulipifera, and Pimelea Hendersoni. The next prize went to a neat group of small plants from Sir F. H. Goldsmid, Regent's Park (Mr. G. Wheeler, gr.). Messrs. Jackson & Son, and Mr. B. S. Williams, were the only competitors in the nurserymen's class for nine, and the awards of the judges went in the order named. The first-named firm had large and in all respects admirable specimens of the stock subjects—Statice profusa, Dracophyllum gracile, Aphelexis macrantha, Phœnocoma prolifera Barnesii, and Darwinia fuchsioides, &c.; while Mr. Williams' best were large and telling specimens of Darwinia Hookeriana, Stephanotis floribunda, Statice profusa, Erica ventricosa magnifica, and E. tricolor Wilsoni, &c. In class 4, which was for a group of stove and greenhouse plants arranged for effect, and not occupying more than 300 square feet, Mr. J. Wills, The Exotic Nursery, Onslow Crescent, S.W., was 1st, and Mr. J. Aldous, Gloucester Road, South Kensington, S.W., 2d, and their groups were put up in diametrically opposite styles. Mr. Wills had some handsome specimens of Palms, Dracænas, and Ferns, &c., thinly set in a carpet of the bright green-leaved Lysimachia nummularioides (which had a somewhat weedy appearance), which was also studded with such flowering subjects as Fuchsias, Azaleas, Pelargoniums, Spiræas, Anthurium Scherzerianum, and Lilium auratum, the presence of which latter was strongly intimated by means of their powerful odour. The group as thus arranged looked well, but we think it would have been the better for a little more colour. Mr. Aldous, on the contrary, had an abundance of colour, but was wanting in foliage plants to tone it down. The group was arranged in the form of a semicircular sloping bank, with the surface as flat as if clipped with shears, and the plants stuffed together as close as possible in the usual cockney window-box fashion, furnishing a grand example of how not to do it!

Amongst ORCHIDS the most decided source of attraction were the two grand plants of Odontoglossum vexillarium, announced in our last to be shown by Mr. Richards, gr. to Baron Rothschild at Gunnersbury. One bulb had four spikes on which were a total of thirty-two richly coloured blossoms; and the other plant had six spikes, and a total of forty-two flowers, the colour of which was paler than in the first mentioned. These were by far the finest plants that have been seen, and Mr. Richards was very deservedly awarded a Gold Medal. In the nurserymen's class for twelve Mr. B. S. Williams came in 1st, his most striking specimens being of Mesospinidium sanguineum, Vanda suavis, five spikes; Cattleya Mossiæ, Cypripedium barbatum superbum, and a well-flowered panful of the attractive Cypripedium spectabile. The 2d prize went to Messrs. Jackson & Son, Kingston, whose most meritorious example was of the dark-coloured Sion House variety of Cattleya Mossiæ. Mr. Bull was 3d, and he had, amongst others, nice examples of Odontoglossum cordatum, and Cattleya Mendelii. In the corresponding class for amateurs there was only one exhibitor—F. A. Philbrick, Esq., Avenue Road, Regent's Park (Mr. Heims, gr.), and to him was awarded the 1st prize. In the amateurs' class for six there was a fair competition, and here the highest award went to J. G. Hepburn, Esq., Sidcup Place, Kent (Mr. Loveman, gr.), who had capital specimens of Oncidium macranthum, Sobralia macrantha, Dendrobium Devonianum, and D. Dalhousianum, &c. F. A. Philbrick, Esq. (Mr. Heims, gr.), came in 2d, with, amongst others, an Odontoglossum vexillarium with twenty-two flowers on four spikes; a fine piece of Dendrobium Falconeri, well flowered; and Saccolabium retusum, with three spikes. The 3rd prize went to Mrs. Torr, Garbrand Hall, Ewell (Mr. J. Child, gr.)

FINE-FOLIAGE PLANTS, as before mentioned, were exceedingly well represented. The class for twenty in pots, not exceeding 12 inches in diameter, was an unusually interesting one, from the great variety of plants staged and the admirable culture which they illustrated. The 1st prize went to Mr. Bull, whose collection was a most creditable one, and included handsome examples of Croton volutus, Pandanus Veitchii, Dion edule, Adiantum gracillimum, Croton spiralis, Cucurligo recurvata striata, Dracæna Goldieana, and Phyllotænium Lindeni, &c. The 2d prize went to Messrs. H. & G. Wright, Lee, Kent; and equal 3d prizes to Mr. B. S. Williams and Mr. J. Wills, whose collections were remarkably good. In the class for nine, confined to amateurs, the leading group came

from S. Ralli, Esq., Cleveland House, Clapham Park (Mr. G. Legg, gr.), and a very fine group it was, consisting of a large and very handsome plant of Geonoma pumila, and large, well-furnished, and beautifully-coloured specimens of Croton Weismanni, C. variegata, and Alocasia microrhiza, &c. The 2d prize went to an admirable group from H. Bessemer, Esq., Denmark Hill (Mr. J. Harrow, gr.). The finest six Palms contributed by nurserymen came from Mr. B. S. Williams, and Mr. J. Wills had the second best, both lots being very good ones. In the amateurs' class for four the awards went to H. Bessemer, Esq. (Mr. J. Harrow, gr.), and Sir F. H. Goldsmid, Bart. (Mr. G. Wheeler, gr.), the former having capital specimens of Livistona altissima, Kentia Forsteriana, Thrinax elegans, &c. Half a dozen good Crotons, contributed by H. Bessemer, Esq., were also 1st in their class. A dozen Dracænas each were contributed by Mr. Bull and Mr. Wills, and the prizes went in the order named. J. T. Peacock, Esq., Sudbury House, Hammersmith (Mr. J. Croucher, gr.), was the only exhibitor of Agaves, and he gained a 1st prize for twelve with a choice group, including fine specimens of A. Victoriæ Reginæ, A. filifera latifolia, A. univittata recurvispina, A. striata, A. coerulea, and A. Simsii, &c. The best six Cycads came from Mr. J. Wills, and amongst them was a large and very handsome plant of Cycas circinalis, a striking object. Mr. Wills sent the finest four Tree Ferns, and Sir F. H. Goldsmid (Mr. G. Wheeler, gr.) the best pair.

Heaths and Azaleas call for little notice. Of the latter by far the best half dozen came from Mrs. Torr (Mr. J. Child, gr.), fine, large, and well-flowered plants; and the best eight were contributed by Mr. Turner, small, fresh, and admirably bloomed specimens. In the open class for nine Ericas the 1st prize went to Sir F. H. Goldsmid (Mr. G. Wheeler, gr.), and the finest half-dozen came from S. Ralli, Esq. (Mr. G. Legg, gr.). The Show Pelargoniums were as attractive as usual, and a considerable amount of praise was bestowed on a group of nine shown by Mr. Turner, which included splendid examples of Ruth and Charlemagne, and which on account of their rich and delicate colouring, admirable form and distinctness, were universally admired. Mr. Turner took a 1st prize with this collection, and Messrs. Dobson & Son were 2d in the same class. In the corresponding class for amateurs by far the best were shown by W. F. Watson, Esq., Isleworth (Mr. James, gr.), and the same gentleman also took a 1st prize for six Fancies, with a very fine lot of plants. Amongst nurserymen Messrs. Dobson & Son were 1st for six Fancies, and Mr. Turner 2d, the plants in both cases being small. The only exhibitor of Clematis was Mr. Maurice Young, Milford Nurseries, Godalming, and he took a 1st prize for twelve with tall cylindrical-shaped plants, the best bloomed amongst which were Mrs. James Bateman, Star of India, magnifica, rubra violacea, Rubella, and Thomas Moore. This was probably the last occasion upon which Roses in pots will put in an appearance at exhibitions this year. It is getting late for them now, but Mr. Turner had some fine and very fresh specimens, and took the 1st prizes in both classes for twenty and twelve, Messrs. Paul & Son, Cheshunt, being 2d in the latter. Amongst Mr. Turner's plants the most noteworthy were Miss Ingram, Edouard Morren, John S. Mill, Etienne Levet, Princess Beatrice, Prince Paul Demidoff, Annie Laxton, La France, and Villaret de Joycuse—the latter new, and promising to prove a good double Victor Verdier. Cut Roses were shown in several classes, but as these were not so fine we need only mention that the best twenty-four hybrid perpetuals, three trusses of each, came from Messrs. Paul & Son, Cheshunt; the best twenty-four single trusses from Mr. Turner, among nurserymen; and from Sir F. Bathurst, Clarendon Park, Salisbury (Mr. Chard, gr.), amongst amateurs; and the best twelve from A. Williams, Esq., Church Fields, Salisbury (Mr. J. Voce, gr.).

New Plants were shown in considerable numbers, and the competition in the nurserymen's class for Mr. Bull's cups, between Messrs. H. & G. Wright and Mr. B. S. Williams, was very spirited. In the two amateurs' classes, however, there was only one exhibitor in each. Messrs. H. & G. Wright had the best dozen plants, introduced and sent out by Mr. Bull since 1873, and which included nicely grown specimens of Maranta Leopoldina, Artocarpus Cannoni, Croton majesticus, Alocasia illustris, Martinezia granatensis, &c. Mr. Williams, who took the 2d prize, had for his principal specimens Macrozamia plumosa, Cyathea Burkei, Dracæna Baptistei, Todea intermedia, and Tillandsia musaica. The conditions as to numbers and the date of their introduction was the same in the two other classes, but one was reserved for amateurs who had not previously won any of Mr. Bull's cups, and here the 1st prize was awarded to Mr. C. Rann, Handcross Park, Crawley, Sussex. In the other class it went to S. Ralli, Esq. (Mr. G. Legg, gr.), who had a very fine lot of plants, including Pleocnemia Leuziana, Croton volutus, Alpinia vittata, Aralia Guilfoylei, Dieffenbachia nobilis, Croton majesticus, and Martinezia granatensis, &c. Mr. Rann's collection included many similar plants to the above, in addition to a handsome specimen of Vriesia reticulata. In the two classes for new plants for prizes offered by the Society, Mr. Bull was 1st, and Mr. B. S. Williams 2d—Mr. Bull having amongst those introduced since 1874 Aralia splendidissima, Croton spiralis, Pritchardia grandis, Croton majesticus, Artocarpus Cannoni, and Kentia Mooreï, &c., all very fine specimens; while Mr. Williams had his beautiful Adiantum gracillimum, × Sarracenia Williamsii, Anthericum variegatum, Cycas media, Araucaria Napoleon Baumann, Aralia elegantissima, &c., in almost equally good order. Amongst new plants exhibited for the first time in England Mr. Bull had Zamia princeps, a bold dark green pinnate-leaved form; Catakidozamia Hillii, a Queensland Cycad, with broad leaf-segments to the leaves; Dieffenbachia Shuttleworthii, Croton Rex, Maranta Massangeana, and Dipladenia regina. Messrs. James Veitch & Sons contributed a remarkably fine group of plants, which occupied the circular bed in the centre of the tent. A tall Palm in the centre of all was surrounded by smaller specimens of the same family, Crotons, Ferns, Anthuriums, and Aralias, freely intermixed with Orchids, Begonias, Gloxinias, and other flowering plants. The most conspicuous objects were specimens of Croton Macafeeanus, Aralia elegantissima, Tillandsia Zahnii, in flower; Cattleya Mendelii, Rhododendron Queen Victoria, Phyllanthus roseum pictum, Brahea filamentosa, Acalypha macrophylla, Hæmanthus cinnabarinus, and cut flowers of the singular Iris Susiana.

Miscellaneous Plants.—In the miscellaneous class Messrs. James Veitch & Sons exhibited a large and most interesting group of new and rare plants, which occupied the circular bed in the centre of the tent, and which are more fully alluded to elsewhere. Mr. Maurice Young sent up from the Milford Nursery a most attractive assortment of hardy plants, principally of Japanese origin, and which included handsome specimens of Sciadopitys verticillata, Ligustrum coriaceum, Abies polita, Thujopsis dolabrata and its variegated variety, Acer palmatifidum, Retinospora plumosa aurea, Juniperus chinensis aurea, Retinospora squarrosa, Aralia Sieboldii variegata, a narrow green-leaved Aucuba, with a profuse array of berries, and several dark-coloured Clematises. Mr. Young also sent another group, consisting entirely of Japanese Acers. A very fine assortment of the latter class of plants came from Messrs. Veitch & Sons. Mr. Turner sent two dozen admirably grown cone-shaped specimens of Ivies, about 4 feet high; and from Mr. B. S. Williams came a large group of Palms, Ferns, Orchids, and other plants. A group of Palms, Azaleas, &c., were sent by Messrs. Cutbush & Son, of Highgate; a fine collection of hardy Ferns and herbaceous plants was contributed by Mr. Parker, Tooting; and a group of flowering and foliage plants by Mr. Wills. Messrs. Osborn & Sons, Fulham, sent a superior group of fine-foliage plants, including a remarkably fine specimen of Davallia Mooreana; a smaller group came from Mr. Laing, Stanstead Park; and A. Mongredien, Esq., Forest Hill (Mr. C. E. Waters, gr.), showed the finest lot of herbaceous Calceolarias, after Mr. James', that have been seen for some time.

Fruit, &c.—The show of fruit was a poor one, and requires but little comment. The best Queen Pines, very small ones, came from R. Thornton, Esq., Canon Hill Park, Merton (Mr. H. Plummer, gr.), and the best of any other variety was a good Black Prince from R. Crawshay, Esq., Cyfarthfa Castle (Mr. Battram, gr.) The finest Black Hamburgh Grapes were contributed by the Earl of Portsmouth, Hurstbourne Park, Hants (Mr. Warren, gr.), and in the "any other black" class W. Spottiswoode, Esq., Combe Bank, Sevenoaks (Mr. J. Bolton, gr.), was 1st with good Black Prince. F. Whitbourne, Esq., Loxford Hall, Ilford (Mr. Douglas, gr.), took 1st prizes with Muscat of Alexandria, Canon Hall Muscats, and Buckland Sweetwater. Large and beautifully-coloured specimens of Bellegarde Peaches from Mrs. Hope, The Deepdene (Mr. Burnett, gr.), were the best in their class, in which Lord Somers, Eastnor Castle (Mr. Coleman, gr.), was a good 2d. The best dish of Nectarines came from J. Norris, Esq. (Mr. Holliday, gr.), the variety being Lord Napier. Lord Carington, Wycombe Abbey (Mr. Miles, gr.), sent the finest Figs and Cherries; and Strawberries were well shown by F. Whitbourn, Esq. (Mr. Douglas, gr.), Dr. C. M. Ingleby, Valentines (Mr. Earley, gr.); Sir F. Bathurst (Mr. Chard, gr.) and the Earl of Radnor, Longford Castle (Mr. H. W. Ward, gr.). Victory of Bath Melon, shown by Earl Somers (Mr. Coleman, gr.), took the highest award in the green or white fleshed class, and Read's Scarlet-flesh was respectively 1st and 2d in its class, the exhibitors being W. Sanders, Esq., Longstock House, Stockbridge (Mr. East, gr.), and Earl Somers (Mr. Coleman, gr.). Prizes were offered for four and six dishes of Peas respectively by Messrs. James Carter & Co., and Messrs. Sutton & Sons, and the 1st in both cases were awarded to G. D. W. Digby, Esq., Sherborne Castle, Dorset (Mr. Pragnell, gr.); the 2d in Messrs. Sutton & Son's class being the Earl of Radnor (Mr. H. W. Ward, gr.).

Scientific Committee.—Dr. Masters, F.R.S. in the chair.

Peach Blister.—A specimen of this was sent by Miss Young, through the editor of the *Garden*. The most recent information on this well-known pest is contained in an illustrated article, from the pen of Mr. W. G. Smith, in our volume for 1875, vol. iv., p. 136.

Malformed Flowers.—A large number of various malformed flowers, &c., were shown, on some of which a further report will be made hereafter; they included a leafy Clematis flower, twin Cucumber, twin Pansy, proliferous Orange, and proliferous Tomato.

Insect Injurious to Orchids.—Mr. Berkeley showed specimens of a species of Baridius found on imported stems of Orchids, and likely to be very injurious.

Rostelia Ellisii.—Mr. Berkeley showed specimens of this rare fungus on the leaves of Amelanchier canadensis. The specimen had been received from Dr. Farlow, of Harvard University, Mass.

Proliferous Daisy.—Mr. MacLachlan showed, on the part of Mr. F. Bond, of Staines, specimens of a proliferous Daisy, originally found wild in Gloucestershire. A further report will be made, in the meantime it may suffice to say that the flower resembled the old hen-and-chicken variety, but the lateral stalks were shorter, and hence the entire blossom was denser and more globose in form.

Insects Injurious to Vegetable Ivory, &c.—Mr. MacLachlan showed nuts of Vegetable Ivory tunnelled in all directions by the larvæ of a beetle (Caryoborus bactris). A similar insect was found also in nuts of the Wax Palm, Copernicia cerifera.

Growth of Plants by Night and by Day.—Dr. Gilbert alluded to the remarks made by Professor Dyer on this subject, see *ante*, p. 722, to the effect that there was no extension of growth in plants during the day, but only during the night; and this, although the decomposition of carbonic acid and the accumulation of formative material goes on in direct sunlight. The opinion of several speakers was that the statement above referred to was too absolute. Mr. Edgeworth and Mr. Grote stated that the remarks made by Professor Dyer were contrary to their experience in India.

Sport of the Thorn.—Mr. W. P. Hiern showed a sporting branch from the single pink Thorn. The sport bore double flowers, and its leaves were also different.

Diatoms in the Tissue of Plants.—Mr. Schofield drew attention to a remarkable statement, made in some American journal, to the effect that some Wheat was grown in silicious soil, and that subsequently diatoms were found in the straw itself [!].

Effect of Radiation.—Mr. Berkeley called attention to the effects of nocturnal radiation in burning the tips of leaves. The case has been already alluded to in our columns.

Cytisus Adami, &c.—Dr. Masters showed a branch of this plant, and commented on it with reference to the curious Vine sport described by Mr. Grieve (*Gardeners' Chronicle*, p. 664). The same gentleman also showed specimens of "Paprika" pepper (Capsicum), sent by Herr H. A. Frommes of Pesth.

Floral Committee.—W. B. Kellock, Esq., in the chair. First-class Certificates were awarded to Messrs. James Backhouse & Son, York, for Microlepia anthriscifolia, a charming little Fern, from South Africa; to J. T. Peacock, Esq., (Mr. Croucher, gr.), for Echinocactus cylindraceus; to Messrs. Harrison & Sons, Leicester, for Mimulus moschatus var. Harrisoni, a hybrid between the Giant Musk and the Spotted Mimulus, and which has large yellow spotted flowers and a very powerful perfume—a useful decorative plant; to Messrs. G. Jackman & Son, for Clematis Duke of Connaught, a large flat double flower, with bright mauve-coloured sepals; to Mr. T. Cripps, Tunbridge Wells, for Clematis Venus Victrix, a double flower of a similar shade of colour as Duke of Connaught, but with longer sepals; and for Clematis Enchantress, a fine double white; to Mr. J. George, Putney Heath, for a charming hybrid Ivy-leaved Pelargonium named Gem, with pinkish-lilac flowers, the upper petals of which are distinctly marked with rosy purple; to Mr. G. Newell, gr. to E. M. Pratt, Esq., Ryston Hall, Norfolk, for Habrothamnus Newelli; and to Messrs. James Veitch & Sons, for Croton Mooreanus, which has richly golden-barred leaves from 12 to 18 inches long, and from 1¼ to 2 inches wide. A good strain of Giant White Brompton Stocks, shown by Mr. R. Dean, Ranelagh Road, Ealing, was Highly Commended; and a vote of thanks was accorded to O. O. Wrigley, Esq., Bridge House, Bury, for cut flowers of a white-flowered Thunia and

Ixora Wrigleyi, the latter a seedling with a very large truss of orange-crimson flowers.

Fruit Committee.—H. Webb, Esq., in the chair. A Cultural Commendation was awarded to R. B. Blyth, Esq., Woolhampton (Mr. Colborn, gr.), for a fine lot of fruit of the Chinese Loquat. Messrs. Barr & Sugden showed a good dish of Limes, and some fine, well-flavoured specimens of Bahia or Navel Oranges.

Royal Manchester Botanical and Horticultural: *June* 2—9.—The Grand National Horticultural Exhibition of this Society was held, as usual, during Whitsun week, and the two days preceding, in the Society's garden at Old Trafford. If not so crowded with exhibits as other shows which have preceded it, the present one was quite full enough to produce a good effect, while as a picture it was, we think, more brilliant in colour, with the colouring materials displayed to better advantage than at any of the previous similar exhibitions, thanks to the good use Mr. Findlay makes of acquired experience. The leading features consisted of Orchids, stove and greenhouse plants (these not so uniformly good as we have seen them), Ferns, and Pelargoniums.

The show was held in the conservatory and adjoining canvas annexe, which were sufficiently well filled; and a very large assortment of all kinds of garden necessaries occupied the adjacent open spaces on the lawn. Here were boilers and garden seats of all sizes, patterns, and materials, summer-houses and greenhouses of various characters, entrance gates, and other objects of use or luxury, spread out upon the green turf, and attracting a fair proportion of the interest of the visitors. The Orchids, stove and greenhouse plants, new plants, fruits, &c., occupied the glass building, in which the effect was much improved by having the stages lowered and thrown back, so that the front plants were set nearly or quite on the floor level; while in the annexe the great central piles of soil have been removed, so that there is a continuous vista from one end to the other.

Orchids.—Manchester has for many years been famed for its displays of Orchids, partly, no doubt, owing to the wealth created in this busy haunt of commerce having led many persons to embark in growing them, and partly because liberal prizes have been offered to ensure their being entered for competition. The prize of honour on this occasion, £16 for a collection of sixteen plants, fell to Dr. Ainsworth, of Higher Broughton; the 2d to J. Broome, Esq., of Didsbury. In the class for ten plants Dr. Ainsworth was also 1st, J. Fildes, Esq., of Chorlton-cum-Hardy, being 2d; in that for six plants Mrs. Leech, of Staleybridge, and Joseph Broome, Esq., were respectively 1st and 2d; while in the single specimen class the prizes went to E. G. Wrigley, Esq., Mr. W. Leech, and Dr. Ainsworth, who were placed in the order named.

Altogether there were 174 specimen plants of Orchids staged, and many of these being very fine plants, some idea may be formed of the beauty of this part of the exhibition. Amongst the plants contributed by Dr. Ainsworth, the following were conspicuous:—Odontoglossum citrosmum roseum, a very fine mass, having nine well-developed spikes; a small and pretty Odontoglossum nævium majus; Cattleya Warneri, with sixteen noble flowers; C. Mossiæ, a good but made-up plant; C. Mendelii, with six spikes of bloom; a nice Dendrobium Wardianum, true; Phalænopsis Luddemannianum, nicely bloomed; Saccolabium guttatum splendens, with thirteen spikes, a grand plant, as also was a Vanda suavis, with ten spikes of flower; not the least effective being a fine, tall mass of Oncidium sphacelatum majus, with about twenty of its gaily dressed panicles. Mr. Broome showed a pot of Cypripedium spectabile, with twenty-six flowers; a fine panful of C. barbatum; a healthy small plant of C. Veitchianum, with three of its beautiful blossoms; and a C. Stonei, with a single vigorous flower-scape, bearing four remarkably perfect flowers. There were also shown, from the same establishment, Epidendrum prismatocarpum, with eleven spikes of its pretty blush-lipped spotted flowers; Masdevallia Harryana, with sixteen flowers; Cattleya lobata, with twenty-six flowers, and a plant of Aerides Lobbii, bearing six flower-spikes. In the collection shown by Mr. Fildes was a plant of Oncidium sphacelatum, with eight fine tall panicles of its bright yellow blossoms; and a remarkably fine variety of Cattleya Mossiæ, bearing about twenty flowers, which had the lip richly marked with crimson and gold. The single specimens consisted of Odontoglossum vexillarium, a small plant, with four spikes, from Mr. E. G. Wrigley; a mass of variously coloured Dendrobium Bensoniæ, from W. Leech, Esq.; and Oncidium Kramerianum, with three of its richly spotted flowers, from Dr. Ainsworth. The nurserymen's prizes for Orchids were competed for by Mr. B. S. Williams, of Holloway, and Mr. R. S. Yates, of Sale. The former had a nice plant of Cypripedium concolor, with sixteen flowers; a good Lælia purpurata, with a similar number; Epidendrum vitellinum majus, with six spikes; Oncidium phymatochilum, with two fine spikes; and the curious Oncidium selligerum, with seven spikes. Mr. Yates had a Cypripedium spectabilis, with over twenty flowers; a good Lælia purpurata; and Odontoglossum citrosmum, and Cattleya lobata, each with eleven flower-spikes.

Stove and Greenhouse Plants.—Classes were arranged for these plants in collections of various extent. The prize for twenty plants, ten foliage and ten in flower, the blue ribbon of the show, a prize of £30, was taken by T. M. Shuttleworth, Esq., of Preston, with a remarkably fine lot of plants, which occupied the post of honour at the far end of the exhibition house. This group contained two immense Gleichenias—Speluncæ and rupestris, probably the finest specimens of these choice Ferns ever seen; a good Encephalartos villosus, a large Phormium tenax variegatum; Erica Cavendishiana, 4 feet by 4, a grand and well-flowered specimen; a large Croton undulatus, bushy and well-coloured; Dendrobium nobile, 3 feet by 3, full of flowers; a very fine Anthurium Scherzerianum, Statice profusa, at least 5 feet over; Croton variegatus, well furnished and finely-coloured, 5 feet by 6; two good Azaleas, and a Pimelea mirabilis, at least 5 feet over. A good second position was taken by Mr. Pilgrim, of Cheltenham, who had amongst foliage plants a specimen of Geonoma Seemanni, about 5 feet high, a perfect picture of health and beauty; a very large Phormium tenax variegatum; a nice Cocos Weddelliana, and other Palms, Cycads, and Pandanads; and among flowering-plants a beautifully furnished, though not very large Aphelexis macrantha purpurea; another charming dwarf, well-bloomed specimen being Erica depressa; a grand Anthurium Scherzerianum; Franciscea calycina major, whose colour came in valuable for contrast; and large and finely-bloomed bushy specimens of Acrophyllum venosum, Hedaroma tulipiferum, and Clerodendron Balfourianum. H. Sampson, Esq., of Bowdon, was 3d, with a good but uneven lot, in which was a splendid specimen of Alocasia Lowii with at least fifty finely developed leaves, all fresh and perfect, a most striking plant; Croton variegatus, a broad, well-furnished specimen, and Cocos Weddelliana, a very nice plant, but there was a falling-off in some of the other foliage plants. The flowering plants comprised good and exceedingly creditable specimens of Allamanda grandiflora, Dipladenia amabilis, and Clerodendron Balfourianum; and a well-flowered Acrophyllum venosum. In the smaller class for eight plants the prizes went to J. Rylands, Esq., of Stretford, W. S. Schloss, Esq., of Bowdon, and T. M. Shuttleworth, Esq., in the order named. Mr. Rylands had a very pretty group, containing a good Pimelea spectabilis, 3 feet through; and an Aphelexis macrantha rosea of about the same size; a smaller plant of Pimelea Hendersoni, Alocasia Lowii, and a good Azalea; Croton angustifolius, a well-furnished plant, 5 feet high, and 4 feet through; Yucca aloifolia variegata, a fine thick-headed Dicksonia antarctica, and Latania rubra. Mr. Schloss had a good Ixora amboinensis, always a telling plant; Anthurium Scherzerianum, very well flowered; one of the best Azaleas in the show (Iveryana); and Erica aristata superba. Most of the plants in this collection were about 3 feet high, and proportionate in breadth. Mr. Shuttleworth's lot were, it may be presumed, the fag end of his grand collection already noticed; there was a certain weakness about them, and they were too formally tied in; amongst them were Hedaroma tulipiferum and fuchsioides; a small Anthurium; Aphelandra macrantha purpurea, and Dipladenia Brearleyensis, bearing a few brightly-coloured flowers. Mrs. Leech, Staleybridge, exhibited a neat Dion edule, a very distinct-looking plant; also a good Areca Baueriana, an Alocasia metallica, 6 feet across, and a Croton variegatus, 6 feet by 4 feet. Mr. Pilgrim, of Cheltenham, had in one of his groups a grand plant of the very effective Eurya latifolia variegata; a good Croton Weismanni; and the curious umber-coloured Dracæna lentiginosa. T. H. Birley, Esq., of Pendleton, had the only specimen of Cordyline indivisa in the show, a healthy plant of moderate size. E. Boden, Esq., of Bowdon, had a pretty plant of Thrinax elegans, about 7 feet high.

In the nurserymen's class for ten fine-foliage plants, Mr. J. Cypher, of Cheltenham, came in 1st; Messrs. W. & G. Caldwell & Sons, of Knutsford, being 2d; and Mr. J. H. Ley, of Croydon, 3d. In Mr. Cypher's group a grand Areca rubra, Phormium Veitchii variegatum, Pandanus Veitchii, Cocos Weddelliana, and Cycas revoluta, were the most noticeable. Messrs. Caldwell also had a good Cocos Weddelliana, with Aralia Veitchii, 6 feet high; a large tuft of Phormium tenax variegatum, a small Yucca filamentosa variegata, and others. Mr. Ley showed Chamærops Fortunei, Pandanus Veitchii, and Yucca aloifolia variegata, all in good condition; in his collection was also a very nice plant of the interesting Maranta Makoyana.

Palms.—These were a good deal mixed up with the collections of fine-foliage plants. The 1st prize for four was taken by J. Broome, Esq., who had a very handsome example of Geonoma Schottiana, old enough to show its finely-ringed stem; Thrinax elegans, and Cocos Weddelliana, well furnished; and Livistona rotundifolia. Mr. Schloss, Mr. Rylands, and Mr. Spence carried off the other prizes.

Dracænas.—Of these effective subjects collections of six plants from amateurs and ten plants from nurserymen were invited. The prizes for the former went to J. S. Mort, Esq., of Altrincham; G. Hodgkinson, Esq., Bowdon; and E. Boden, Esq. The nurserymen's collections came from Messrs. W. Rollisson & Sons, J. Broome, Esq., and Mr. R. S. Yates (equal), and Mr. J. H. Ley. They were mostly young plants of from 2 to 4 feet high, and for their colours and graceful habit were an attractive element of the show. Messrs. Rollisson's collection consisted of D. Reali, regina, Chelsoni, Weismanni, Baptistei, Youngei, Fraseri, amabile, Hendersoni, and Mooreana. Mr. Broome had D. imperialis and Casanovæ, and a good plant of D. Shepherdi; Mr. Yates had D. stricta, and in Mr. Ley's lot were conspicuous plants of D. Baptistei and Chelsoni.

New and Rare Plants.—The prizes for the amateurs' collections of six were taken by T. M. Shuttleworth, Esq. (1st), who exhibited Adiantum gracillimum, Croton magnificus, Vriesia reticulata, Dracæna Fraseri, Paullinia anthriscifolia on a balloon trellis, and Macrozamia corallipes; and by W. S. Schloss, Esq. (2d), who had a fine pan of Ouvirandra fenestralis, and Reidia glaucescens. Mr. B. S. Williams took the 1st prize in the nurserymen's class for twelve, his collection consisting of a fine lot of specimen plants of good things, namely, Cycas intermedia, Dracæna Baptistei and Hibberdii, Croton Weismanni and majesticus, Adiantum gracillimum, Araucaria Goldieana, Anthurium crystallinum, Woodwardia radicans cristata (which Mr. Tom Stansfield tells us they are selling as W. r. Brownii), Kentia Mooreana, Aralia elegantissima, and Zamia Lindeni. Messrs. Rollisson, who came in 2d, showed several interesting little subjects, as Platyloma (or Pellæa) ornithopus, Trichomanes Bancroftii, Cypripedium japonicum, a highly curious species; Dracæna hybrida, Aralia elegantissima, Aralia Veitchii gracillima, Dracæna elegantissima, Dicksonia Deplanchei, Cupania sorbifolia, and Goodyera velutina. In the group shown by Mr. Ley, which was placed 3d, was a curious little depauperated Pteris, called P. serrulata Leyii, a dwarfed form, in which all the segments are suddenly contracted into linear elongate tails.

Ferns.—The class for nine stove and greenhouse Ferns brought two fine collections, the 1st prize going to T. M. Shuttleworth, Esq., for a magnificent lot, and the 2d to E. G. Wrigley, Esq., of Bury, for a group also containing some fine plants. Mr. Shuttleworth had a grand Gleichenia flabellata fully 8 feet through, and G. Mendelii and semivestita nearly as large; a wonderful Leucostigma immersa, with a flat surface, 8 feet over; and Davallia elegans nearly as large; these were backed up by four large Tree Ferns in prime condition, namely, Cyathea princeps, dealbata, medullaris, and Dicksonia antarctica. In Mr. Wrigley's lot were fine massive plants of Nephrolepis davallioides, Balantium Culcita, and Davallia tenuifolia stricta; Lomaria gibba major, Davallia polyantha, with Dicksonia antarctica and squarrosa, and fine spreading plants of Cibotium Schiedei and C. regale—the latter with a 2-feet stem, and a spreading head of some seventeen fronds from 10 to 12 feet across. The 1st prize for a pair of Tree Ferns went to Mr. Shuttleworth, who had a well matched pair of Cyathea Burkei and C. Dregei, with stout 6-feet stems, and well furnished heads. The class provided for six Adiantums was pretty well filled. Mr. Shuttleworth took 1st honours with a splendid lot, consisting of the rarely seen A. Veitchianum, 2½ feet over, and densely furnished; A. excisum multifidum, a mass 3½ feet through, and very dense; A. cuneatum, large and fine; A. peruvianum, A. formosum, and A. glaucophyllum, the latter 3½ feet over. These were fresh, vigorous plants, in first-rate condition. Mrs. Leech was 2d; she had large, dense, bushy plants of A. concinnum latum, trapeziforme, pentadactylon, and formosum, and smaller ones of A. farleyense and cuneatum. In the 3d prize collection of W. Sale, Esq., Higher Brompton, was a very good plant of A. farleyense.

In the class for six Filmy Ferns, Messrs. J. Standish & Co., of Ascot, took the 1st place. Here was a grand tuft of Todea superba, and some fine pans of Hymenophyllum demissum, 3 feet across; flexuosum, 1½ foot across; and one shown as crispatum, 2 feet across. Mr. Williams, who was 2d, had Trichomanes auriculatum and trichoideum, and Hymenophyllum nitens and demissum; and Messrs. Rollisson (3d) had Trichomanes Bancroftii, and a variety of T. alatum with ovate fronds.

Hardy Ferns were remarkably well-shown by Mr. Shuttleworth, who had a fine plant of the Polypodium vulgare cornubiense, shown under one of its synonymous names—elegantissimum; by Mr. Crowe of Greenhays; by Miss Pearson of Prestwich; and by Mr. C. Rylands.

Roses.—Messrs. Paul & Son of Cheshunt showed

a group of twelve Roses in pots, medium sized specimens, in very fine condition. The sorts included La France, Madame Margottin, Madame Victor Verdier, Mdlle. Marie Rady, a noble plant; John Hopper, Niphetos, Céline Forestier, Alfred Colomb, very finely brought out; Juno, and François Fontaine. Messrs. Paul & Son also had eight boxes of fine cut Roses, amongst which we noticed a fine bloom of the new Duke of Connaught, a rich deep velvety crimson, with fine, smooth shell petals. Two boxes of splendid blooms of Maréchal Niel Rose were shown by Messrs. H. Lane & Son, of Berkhamstead.

PELARGONIUMS were somewhat numerous, many of them well-grown and flowered; and, consequently, they imparted much brightness to the large tent in which they were staged. The best came from Mr. Rylance, of Ormskirk, who took the nurseryman's 1st prize in each of the classes for eight show, eight fancy, and eight zonal varieties. The show varieties consisted of plants 3 to 4 feet through, and well-flowered; the fancies were 2 to 3 feet through, and amongst them Ann Page, Fanny Gair, and Lucy were conspicuous. The zonals were intermediate in size, and amongst them Wellington showed out as a fine telling specimen. The amateurs' classes were well filled, and the plants were generally very cleanly grown and fairly bloomed. H. J. Leppoc, Esq.; Mr. Douglas, of Cheadle; Miss Ashton, of Didsbury; Mr. Shuttleworth, and Mrs. Best, of Worthington, were the principal prize-takers. Amongst variegated Pelargoniums, by far the best came from J. S. Mort, Esq., of Altrincham, and these were really fine-grown specimens.

AZALEAS were very poorly shown, and the less said of them the better, except it be to remind the growers that they must bestir themselves if finely-bloomed Azaleas are not to become things of the past—so far as this country is concerned. They manage these things better in Belgium!

RHODODENDRONS were shown in tolerable quantities, and were very fairly bloomed. They added materially to the display of showy colours in the tent annexe, and are always welcome at an early June show. We have not space to mention the varieties, but we may just say that the principal groups were contributed by Mr. R. S. Yates, Messrs. Lane & Son, Messrs. G. & W. Yates, and Mr. John Heywood.

YUCCAS.—A class for six Yuccas brought out that number of handsome plants from Mr. Williams—all variegated forms, which gained the prize. Yuccas in pairs were contributed by Joseph Broome, Esq. (1st), who had two beautifully grown and perfectly symmetrical plants of Y. aloifolia variegata; by J. Kershaw, Esq. (2d), who had plants of about the same size, but less neatly grown; and by Mrs. Douglas (3d), who showed a pair of Y. filamentosa variegata. These pairs of Yuccas, Tree Ferns, and other plants, if sufficiently large, are invaluable for imparting effect, if turned to good account.

Amongst miscellaneous matters we may mention a fine group of Ivies in pots, shown by Messrs. Lane & Son; splendid collections of eighty alpine and herbaceous plants, shown by Messrs. Rollisson & Sons and Mr. R. S. Yates; a fine group of hardy shrubs from Mr. R. Smith, Worcester; a most interesting group of Japanese Maples, from Messrs. J. Standish & Co.; a basketful of the Purple Birch, from Messrs. Paul & Son; miscellaneous groups of considerable extent from Mr. B. S. Williams, Mr. J. H. Ley, Messrs. Caldwell & Sons, and Messrs. Birkenhead; collections of Heaths from Mr. Cypher and Mr. Rylands; various sets of Gloxinias from different exhibitors; about three dozen bouquets and various stands of cut flowers, and a group of well-grown Sarracenias from J. Fildes, Esq. Respecting the bouquets and cut flowers the *Manchester Guardian* very opportunely observes:—

"The bouquets comprise many that have been constructed by very tasteful and ingenious hands. It is a pity, however, that among them there occur several so blurred by wet, not of the cleanest, or otherwise damaged, that, whatever else they may be, they can no longer be esteemed 'bridal.' A bridal bouquet should be, like Cæsar's wife, beyond even the suspicion of a blemish; it should give no opportunity of comment in words other than of praise even to the unfortunate people who are fault-finders by predilection. We cannot possibly express unqualified admiration of the cut flowers, 'staged like Roses,' which stand in a line with the bouquets. The object of a flower show being different from that of a retail dealer in the market place, and having direct reference to the improvement of the public taste, to bunch flowers such as Anthuriums and Allamandas in the way here illustrated cannot possibly be conceived an act of faithful deference thereto. Cut flowers, except when used for bouquets, should always be disposed in a manner as little as possible different from their position when growing on the plant. A class might very usefully be introduced into the schedule another year, for 'cut flowers *not* staged like Roses.' Then perhaps we should see less of this irony and torture in the mode of dealing with objects so lovely as those exhibited, which, treated after some other more natural manner, would have been deserving of the highest praise. When will people learn that a single, solitary Rose, with proper accompaniment of green leaves, in a little vase or crystal vessel of clear water, is a more beautiful thing yet than ever so big a bunch of Roses inconclusively tied together? The principle applies elsewhere, and here it is not illustrated."

The fruit exhibited was rather scanty. Collections were shown from the gardens of Lord Eagot (Mr. Bannerman, gr.), and those of Lord Delamere (Mr. Milne, gr.), the former being placed 1st. This consisted of a Smooth Cayenne Pine-apple, fine Duke of Buccleuch, and well-furnished Black Hamburgh Grapes, Violet Hâtive Peach and Downton Nectarine, Figs, and well-preserved Apples. For Black Grapes the 1st prize went to the Earl of Crawford and Balcarres (Mr. Jamieson, gr.); the 2d to Lord Delamere; and the 3d to J. Rylands, Esq., all for Black Hamburghs of ordinary good quality. For white Grapes the Earl of Crawford was again 1st, with fair-sized bunches of Duke of Buccleuch, large and clean; W. Blinkhorn, of St. Helens, being placed 2d with Muscat of Alexandria; and Lord Bagot, 3d, with Buckland Sweetwater. Messrs. Standish & Co. exhibited a bunch of their Early Ascot Frontignan. Some good Viscomtesse Héricart de Thury Strawberries, and a fine seedling Cucumber, came from Mr. Potts, of the gardens at Manley Hall, and gained 1st prize in their respective classes.

Royal National Tulip Society: *May* 30.—The annual gathering of the Tulip men took place this season at the Town Hall, Manchester, in connection with a meeting of the Botanical and Horticultural Society. A great many flowers put in appearance, but a large number of them were poor, half-developed, forced-out things. The method adopted by the Tulip cultivators to force flowers into bloom is to cut them with the usual length of stem, and place the flowers in a vessel containing warm water, which is placed in a stove plant-house, or on the warm shelf of a greenhouse; but flowers treated in this way are rarely illustrations of high-class quality. In point of size there was a decided falling off as compared with last year's flowers. In the matter of judging the flowers the rules of the Society distinctly sets forth that "the judges shall adopt as the basis of their decisions, purity, correct marking, symmetry in form, uniformity in size, and perfect dissimilarity, and there shall be no appeal from their decision." When the competing flowers are evenly balanced, the work of judging the flowers lasts a considerable time, as each flower has to be closely and patiently scrutinised.

The classes are divided into two main sections, first those for rectified or broken Tulips, and those for breeder Tulips which have not yet broken into character. All seedling Tulips are denominated breeders, because they assume a self form, and retain it till they break into character, which may be in one or two or not until six or eight years. The broken Tulips are divided into three classes—bizarres, roses, and byblœmens, and the breeders are easily distinguishable also, as they present in the unbroken state certain characteristics by means of which they are readily classified.

In the classes for rectified Tulips, the leading prizes were for stands of twelve dissimilar varieties, two feathered and two flamed in each class; and no less than ten stands were found competing for five prizes. The best came from Mr. W. Whittaker, 77, Peru Street, Salford, who had feathered rose Industry and Mr. Lea, the former very fine; flamed rose Mabel and Mrs. Lea; feathered bizarre Masterpiece, very fine indeed, and Demosthenes; flamed bizarre Sir J. Paxton and Dr. Hardy; feathered byblœmen Adonis and Violet aimable, very fine; flamed byblœmen Talisman and Sylvester, a seedling flower broken by Mr. Hepworth, and new to the national district, and likely to make a good exhibition flower. 2d, Mr. Thomas Lea, Leigh, with feathered bizarre Seedling and Gratitude; flamed bizarre Prince of Wales and Dr. Hardy; feathered rose Seedling and Heroine; flamed rose Aglaia and Triomphe Royale; feathered byblœmen Norah Darling, and a bold and correct seedling flower; flamed byblœmen Adonis and Duchess of Sutherland. 3d, Mr. Joshua Hague, Stockport, with feathered bizarre Masterpiece and George Hayward; flamed bizarre Sir J. Paxton and Masterpiece; feathered rose Mabel and Mrs. Lea; flamed rose Aglaia and Mabel; feathered byblœmen Sarah and Violet aimable; flowered byblœmen Adonis and Talisman. 4th, Mr. W. Wardle, Burton-on-Trent. 5th, Mr. D. Woolley, Stockport. The next class was for six dissimilar Tulips, one feathered and one flamed in each class, and here eleven stands also were staged, the best coming from Mr. Charles Forman, Chellaston, Derby, with feathered bizarre Demosthenes; flamed bizarre Dr. Hardy; feathered rose Heroime; flamed rose Triomphe Royale; feathered byblœmen Mary Forman, a tolerably good flower, but, as shown, too long in the cup; flowered byblœmen Duchess of Sutherland. 2d, Mr. Thomas Haynes, 63, Regent Street, Derby, with feathered bizarre Masterpiece; flowered bizarre Sir J. Paxton; feathered rose Heroine; flamed rose Aglaia; feathered byblœmen Adonis; flamed Duchess of Sutherland. 3d, Mr. John Turner, Stockport, with feathered bizarre Apelles; flamed bizarre Sir J. Paxton; feathered rose Rachel; flamed rose Mrs. Lea; feathered byblœmen Adonis; flamed by blœmen Duchess of Sutherland. Five other prizes were awarded in this class. Class 3 was similar to the last, but the competition was confined to subscribers of 10s. 6d. only. It may here be remarked that subscribers of this amount are debarred from competing in three leading classes, which are reserved for guinea subscribers only. In class 3 the 1st prize was awarded to Mr. Hugh Housely, Stockport, who had feathered bizarre Masterpiece; flamed bizarre Sir J. Paxton; feathered rose Mrs. Lea; flamed rose also Mrs. Lea, for it is not an uncommon occurrence for one flower to be shown in both forms; feathered byblœmen Violet aimable; and the same variety was also shown in a flamed form. 2d, Mr. Richard Yates, Bedford Leigh, with flamed bizarre Queen Charlotte (?); flamed bizarre Sir J. Paxton; feathered rose Lady Lilford; flamed rose Aglaia: feathered byblœmen Mr. Pickerell; flamed byblœmen Talisman. Four prizes were offered in this class, and ten stands competed for them. Class 4 was for three feathered Tulips, one of each class, and here Mr. T. Haynes, Derby, was 1st with bizarre Sir J. Paxton; rose Heroine; byblœmen Adonis. 2d, Mr. H. Housely, with bizarre Sovereign; rose Mabel, and byblœmen Adonis. 3d, Mr. W. Whittaker, with bizarre Demosthenes; rose Seedling and byblœmen Violet aimable. 4th, Mr. Charles Barnes, Post Office, Birmingham, with bizarre Charles X.; rose Mrs. Lea; and byblœmen Violet aimable. Ten stands competed in this class. The next class was for three flamed Tulips, one in each class, the 1st prize being awarded to Mr. Thomas Mellor, Ashton-under-Lyne, with bizarre Masterpiece, rose Mabel, and byblœmen Duchess of Sutherland. 2d, Mr. Thomas Haynes, with bizarre Sir J. Paxton, rose Aglaia, and byblœmen Talisman. 3d, Mr. Charles Forman, with bizarre Sir J. Paxton, rose Sarah Headly, byblœmen Duchess of Sutherland. 4th, the Rev. F. D. Horner, Kirby Malzeard, Ripon, with bizarre Merit, rose La Van Decken, a fine old Dutch variety, and byblœmen Duchess of Sutherland. No less than eight stands competed in this class. Class 6 was for two Tulips, one feathered and one flamed, of any class. The competition here was for maiden growers only, a maiden grower being defined in the rules and regulations as one who has never won the amount of his subscription at any one show. As a further inducement to compete, a distribution of valuable bulbs is made to all maiden growers who entered. Four prizes were offered, but two stands only competed, the best coming from Mr. E. J. Thompson, Manchester, who had flamed bizarre Mr. Wade, and feathered bizarre Seedling. Mr. Jos. Dobchon was 2d, with feathered rose Magenta, and flamed rose Captivator. The next class was similar to this, and all the stands competing in class 6 were allowed to compete in class 7 also. Here the Rev. F. D. Horner was 1st, with feathered rose Mrs. Lomax, and flamed byblœmen Adonis; 2d, Mr. T. Haynes, with feathered bizarre Masterpiece, and flamed bizarre Salvator Rosa; 3d, Mr. C. Forman, with feathered rose Heroine, and flamed byblœmen Duchess of Sutherland; 4th, Mr. Thomas Mellor, with flamed byblœmen Lord Denison, and feathered bizarre Masterpiece: as many as fourteen pairs competed in this class. Class 8 was for single blooms in each of the six classes, ten prizes (sixty in all) being awarded in the classes. The variety taking the 1st prize can take one more prize in each class, but with this exception, it is required that all the winning flowers be dissimilar. Of feathered bizarres Mr. T. Haynes was 1st, with Masterpiece: 2d, Mr. H. K. Williamson, with John Sharpe; 3d, Mr. Mellor, with Stover's Seedling; 4th, Mr. Thos. Lea, with James Lea, &c. Of feathered roses the Rev. F. D. Horner was 1st, with Comte de Vergennes; 2d, Mr. J. Colbert, with Heroine; 3d, the Rev. F. D. Horner, with Mrs. Lomax; 4th, Mr. W. Wardle, with Circe, &c. Of feathered byblœmens Mr. T. Haynes was 1st, with Mrs. Pickerell; 2d, Mr. W. Whittaker, with Adonis; 3d, Mr. J. Turner, with Violet aimable; 4th, Mr. J. Richardson, with Cupid, &c. The best flamed bizarre was Sir J. Paxton, from Mr. J. Thurston; 2d, Mr. T. Haynes, with Ajax; 3d, with William Lea; and 4th, with Dr. Hardy. Mr. W. Wardle was 1st with the best flamed byblœmen in Duchess of Sutherland; 2d, Mr. S. Cooper, with Lizzie; 3d, Mr. W. Whittaker, with Britannia; 4th, the Rev. F. D. Horner, with Talisman, &c. Of flamed roses the best was Lady Sefton, from Mr. D. Woolley; 2d, Mr. W. Wardle, with Lady Catherine Gordon; 3d, Mr. Barnes, with La Van Decken; 4th, Mr. T. Mellor, with Mabel, &c. The premier feathered flower was bizarre Masterpiece, shown by Mr. T. Haynes, and the premier flamed flower, bizarre Sir J. Paxton, shown by Mr. W. Whittaker.

The breeders represent a very attractive class of flowers, large in size, and of rich self colours, as well as being of fine form. As breeders they grow very tall, but when they break the height and size of the flowers are both reduced. The best six dissimilar

flowers, two in each class, came from Mr. Samuel Barlow, Stakehill House, Chedderton, who had bizarre Sir J. Paxton and Excelsior, byblœmen Aspinole's 112, and Glory of Stakehill; roses Annie Macgregor and Hepworth's 169, '68. Mr. Barlow is always strong in breeders, having a remarkably fine strain, perhaps superior to any other in the kingdom. 2d, Mr. D. Woolley, Stockport, with byblœmen Norval and Sancta Sophia; roses Lady Grosvenor and Seedling; and bizarre Emperor Nicholas and Sultan. 3d, Mr. Mellor, with roses Mabel and Annie Macgregor; bizarre Storer's Seedling and Seedling; byblœmen Alice Grey and Northern Light. The 4th, 5th, and 6th prizes were awarded to Messrs. W. Whittaker, J. Hague, and T. Haynes. When the name of a breeder is given, it is to be understood as an unbroken seedling raised from that variety. The best stand of three breeders, one in each class, came from Mr. T. Haynes, and consisted of bizarre Dr. Hardy; rose Lady Olivia Sparrow; byblœmen Talisman. 2d, Mr. T. Mellor, with bizarre Sir J. Paxton; rose Annie Macgregor, and byblœmen Alice Grey. 3d, Mr. J. Thurston, with bizarre Sir J. Paxton; rose Mrs. Lomax, and byblœmen Talisman. The best bizarre breeder was Hardy's Elcelsior, from Mr. S. Barlow. 2d, Mr. Richardson, with Dr. Hardy. 3d, Mr. S. Barlow, with Excelsior. The best rose breeder was Hepworth's 169, '63, from Mr. J. Hague; Mr. T. Haynes coming in 2d with Juliet. The best byblœmen breeder was an unnamed flower from Mr. Isaac Moore; 2d, Mr. Richardson, with a seedling; 3d, Mr. Whittaker, with Adonis. The premier breeder Tulip was a Dr. Hardy, shown by Mr. T. Haynes.

The Northern Counties Tulip Society: *May* 31.—This Society held its third annual exhibition on the above date, at the Abbey Hey Hotel, Gorton, a suburb of Manchester. The show of flowers is almost or quite as large as that provided by the National Society; and indeed many of the leading Tulip cultivators in the North are connected with both societies. The schedule of prizes is not quite so large as that of the older society, but it resembles it in most respects, except that there is no class for more than six Tulips. The best stand of six Tulips, one feathered and one flamed in each class, came from Mr. W. Whittaker, Salford, who had feathered bizarre Demosthenes; flamed bizarre Sir J. Paxton, very fine; feathered byblœmen Violet aimable; flamed byblœmen Hardy's Talisman, very fine; feathered rose Lea's Modesty; flamed rose Lea's Mrs. Lea, an old flower, shown in fine condition on this occasion. 2d, Mr. John Norris, Leigh, with feathered bizarre Sir J. Paxton, very fine; flamed bizarre Sir J. Paxton; feathered byblœmen Violet aimable, very good; flamed byblœmen Duchess of Sutherland, very fine; feathered rose Heroine; flamed rose Aglaia. 3d, Mr. J. Hague, who had feathered bizarre George Haywood; flamed bizarre Sir J. Paxton; feathered byblœmen Leech's Sarah; flamed do. Adonis, very fine; feathered rose Mabel; flamed rose Aglaia, very fine. 4th, Mr. T. Mellor; 5th, Mr. S. Cooper; 6th, Mr. S. Barlow. A similar class was provided for subscribers of 10*s.* 6*d.* only, the best stand coming from Mr. James Hulme, who had feathered bizarre Masterpiece, one of the finest flowers shown this season; flamed bizarre Dr. Hardy; feathered byblœmen Violet aimable, very fine; flamed byblœmen Norval; feathered rose Heroine; flamed rose Mabel. 2d, Mr. R. Yates, Leigh, with feathered bizarre Charles X.; flamed bizarre Sir J. Paxton; feathered byblœmen Mr. Pickering; flamed byblœmen Talisman; feathered rose Mrs. Lea; flamed rose Aglaia. 3d, Mr. John Turner, in whose stand flamed rose Mrs. Lea was very fine. 4th, Mr. John Cash. The best three feathered Tulips, one in each class, came from Mr. W. Whittaker, who had bizarre Target; byblœmen Adonis; and rose Mrs. Headly. 2d, Mr. T. Mellor, with bizarre Masterpiece; byblœmen Angelina; rose Rachel. 3d, Mr. John Cash. Mr. T. Mellor had the best three flamed Tulips in bizarre Masterpiece; byblœmen Duchess of Sutherland; and rose Mabel. 2d, Mr. Whittaker, with bizarre Sir J. Paxton; byblœmen Talisman; and rose Mabel. 3d, Mr. R. Yates, with bizarre Sir J. Paxton; byblœmen Lord Denman; and rose Aglaia. Three other prizes were awarded in this class. The best pair of Tulips, one feathered and one flamed, in any class, came from Mr. John Knott, who had feathered bizarre Charles X., and flamed byblœmen Lord Denman. 2d, Mr. S. Cooper, with flamed bizarre Sir J. Paxton and feathered byblœmen Catharina. 3d, Mr. R. Yates, with feathered bizarre Charles X., and flamed bizarre Sir J. Paxton. Eight prizes were awarded in each of the six classes for single blooms, and a large number of flowers were staged. The best feathered bizarres were Masterpiece, Charles X., Sir J. Paxton, Storer's Seedling, and John Radcliffe; the best flamed bizarre, Sir J. Paxton, Dr. Hardy, Masterpiece, and San Joe; the best feathered byblœmen, Violet aimable, and Mrs. Pickerell; the best flamed byblœmen, Lord Denman, Talisman, and Duchess of Sutherland; the best feathered roses, Comte de Vergennes, Judy, and Heroine; the best flamed byblœmen, Aglaia, Mabel, and Triomphe Royale.

The premier feathered flower was bizarre Masterpiece, very large, but at the same time quite correct in all its parts, shown by Mr. James Hulme; the premier flamed Tulip was an old Dutch flower, La Van Decken, from the Rev. F. D. Horner.

Breeder Tulips were numerously produced, and included some fine flowers. The best six, two in each class, came from Mr. T. Mellor, who had bizarre Sulphur and Sir J. Paxton, byblœmen Alice Grey and Northern Light, rose Annie Macgregor and Mabel; 2d, Mr. J. Hague, with bizarre Seedlings, byblœmen Alice Grey and Seedling; rose, both seedlings; 3d, Mr. S. Barlow, with bizarre Hardy's Excelsior and Sir J. Paxton, byblœmen Glory of Stakehill and Ashmole's 112, rose Annie Macgregor and Hepworth's Seedling; 4th Mr. W. Whittaker. The best three breeders, one in each class, also came from Mr. Mellor, who had bizarre Sulphur, byblœmen Alice Grey, and rose Annie Macgregor; 2d, Rev. F. D. Horner, with bizarre Hardy's Dr. Dalton, byblœmen Talisman, and rose Olivia; 3d, Mr. S. Barlow, with bizarre Hardy's Excelsior, one of the best bizarre breeders in the room; byblœmen Glory of Stakehill, and rose Annie Macgregor. In the classes for single flowers the best bizarre breeders were Sir J. Paxton, Sulphur, Hardy's Excelsior, and Storey's Seedling; the best byblœmens, Adonis, Crusader, John Henry, and Daniel Jackson; the best rose breeders, Lord Derby, Seedling, and Queen of England.

The premier breeder Tulip was bizarre Sir J. Paxton, exhibited by Mr. S. Barlow.

The flowers were all arranged in a large assembly room for the judges, and after the awards were made the prize flowers were removed to a smaller room upstairs, and arranged on a stand in the centre, similar to a stage for plants facing each way. No order is observed in this arrangement, but the flowers are set out in order to secure the best possible display, according to the option of the stewards of the show.

Obituary.

WE hear with great regret of the death, on May 18, of Mr. WILLIAM MITCHELL MOSS, of the firm of Jacob Wrench & Sons. The deceased gentleman, who was well known in the trade, was in his sixtieth year, and died at The Lodge, Shenfield, Essex, after a long illness.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, JUNE 7, 1876.

MONTH AND DAY.	BAROMETER. Mean Reading Reduced to 32° Fahr.	BAROMETER. Departure from Average of 18 years	TEMPERATURE OF THE AIR. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	WIND. Average Direction.	RAINFALL.
June	In.	In.	°	°	°	°	°	°			In.
1	30.04	+0.24	68.0	43.7	24.3	54.6	— 1.6	49.0	74	S.W.; N.N.E.	0.00
2	29.83	+0.03	68.7	42.0	25.8	53.4	— 3.3	47.8	81	S.; S.E.	0.06
3	29.64	−0.16	67.4	47.0	20.4	54.6	— 2.3	50.1	84	S.; S.S.W.	0.07
4	29.79	−0.01	64.8	43.9	20.9	55.0	— 2.1	44.8	69	S.S.W.	0.02
5	29.75	−0.05	61.1	47.4	13.7	53.0	— 4.3	51.3	95	S.W.; WSW	0.03
6	29.84	+0.04	65.0	50.0	14.1	55.9	— 1.6	49.7	81	W.; WSW	0.02
7	29.81	+0.01	67.6	50.0	17.6	56.6	— 1.0	46.4	68	WNW.; W.; S.W.	0.00
Mean	29.81	+0.01	66.1	47.3	18.8	54.8	— 2.3	46.7	79	S.W.	sum 0.20

June 1.—A fine day, partially cloudy. Cool.
— 2.—Fine, but cloudy till 5 P.M.; dull with frequent rain after.
— 3.—A fine day, very cloudy at times. Rain fell after 6 P.M.
— 4.—A fine day, clear and cool.
— 5.—Dull, cold, strong wind, and occasional rain throughout.
— 6.—Dull and wet till 1 P.M. Fine till 10 P.M., rain fell after.
— 7.—A fine day, light clouds. Overcast at night.

—— During the week ending Saturday, June 3, in the vicinity of the metropolis the reading of the barometer at the level of the sea increased from 30.06 inches at the beginning of the week to 30.24 inches by the morning of May 29, decreased to 30.08 inches by the morning of the 31st, increased to 30.28 inches by the morning of June 1, and decreased to 29.80 inches by the end of the week. The mean reading for the week at sea level was 30.09 inches, being 0.24 inch above that of the preceding week, and 0.12 inch above the average.

The highest temperatures of the air observed by day varied from 73½° on May 30 to 64¼° on the 28th; the mean value for the week was 68°. The lowest temperatures of the air observed by night ranged between 43° on June 2 and 49° on May 31; the mean weekly value being 46½°. The mean daily range of temperature in the week was 21¾°, the greatest range in the day being 28° on May 30, and the least, 15½°, on the 28th.

The mean daily temperatures of the air, and the departures from their respective averages were as follows; May 28, 55°.4, — 0°.2; 29th, 57°.2, + 1°.4; 30th, 57°.6, + 1°.6; 31st, 55°.6, — 0°.7; June 1, 54°.9, — 1°.6; 2d, 53°.4, — 3°.3; 3d, 54°.6, — 2°.3. The mean temperature of the air for the week was 55¼°, being 0°.7 below the average of observations extending over a period of sixty years.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 123° and 119¾° on the 29th and 30th of May; on the 28th and 31st 96° was the highest reading. The lowest readings of a thermometer on grass with its bulb exposed to the sky were 40° and 39½° on the 1st and 2d of June; the mean for the several low readings was 43°.

The direction of the wind was mostly from the W. and S.W., and its strength gentle. The weather during the week was fine and bright, though still somewhat cold.

Rain fell on two days, the amount collected was 0.12 inch.

In England the highest temperature of the air observed by day was 77¾° at Bristol, and 63° only at Liverpool and Newcastle-on-Tyne. The mean value from all stations was 70¼°. The lowest temperature of the air observed by night was 37° at Bristol. At Sunderland 46° was the lowest temperature. The general mean from all stations was 41½°. The range of temperature was the least at Liverpool, 19°, and the greatest at Bristol, 40¾°. The mean range from all stations was 28¾°. The mean of the seven high day temperatures was the highest at Bristol, 70¾°, and the lowest at Liverpool, 60°. The mean value from all stations was 65¾°. The mean of the seven low night temperatures was the lowest at Bristol, 42¾°, and the highest at Sunderland, 49°. The general mean from all stations was 46½°. The mean daily range of temperature in the week was the greatest at Bristol, 28°, and the least at Liverpool, 11¾°. The mean daily range of temperature from all stations was 19½°.

The mean daily temperature of the air for the week was 54°, being 2¼° lower than the value for the corresponding week in 1875. The highest was 55½° at London, Cambridge, Wolverhampton and Sunderland, and the lowest was 51¾°, at Newcastle-on-Tyne.

Rain fell on two or three days in the week at most stations; the amounts measured varied from half an inch nearly at Bristol, Eccles, and Manchester, to one-hundredth of an inch at Leicester, Bradford, and Sunderland; at Newcastle-on-Tyne and Plymouth no rain fell; the average fall over the country was two-tenths of an inch.

The weather during the week was fine and bright, but cool.

In Scotland, the highest temperatures of the air ranged from 78° at Dundee to 65° at Greenock and Paisley, the general average being 70¾°. The lowest temperatures of the air varied from 38½° at Aberdeen to 44¾° at Leith; the general average was 41½°. The mean range of temperature in the week was 29¼°.

The mean daily temperature of the air for the week was 55°, being 0.5° above the value for the corresponding week in 1875. The highest was at Dundee, 57°, and the lowest at Greenock and Paisley, both 52½°.

Rain fell at Glasgow and Greenock to the amount of an inch and one-tenth; at Aberdeen one-hundredth of an inch only was measured, and at Perth no rain fell; the average fall over the country was four-tenths of an inch.

JAMES GLAISHER.

Answers to Correspondents.

CONIFER AT GRENADA: *T. S. P.* This must be the horizontal variety of Cupressus sempervirens. The only thing that does not agree with it is the small size of the cones, which are only half an inch in size and not convex. They may perhaps have been gathered unripe (having the surface shrivelled). We know of nothing else which it can be compared to that was growing in Europe 300 years ago. *A. M.*

LABURNUM: *J. Carlton.* A good specimen of Cytisus Adami, supposed to have originated from a graft of C. purpureus on C. Laburnum.

LOMARIA GIBBA: *Durham.* Try mossing the stem and keeping it moistened with the syringe. Perhaps you keep it in too hot and too dry an atmosphere.

NAMES OF PLANTS: *A Young Gardener.* 1, Pinus Pinaster var.; 3, 5, and 6, probably all Pinus taurica

4, Abies Douglasii. *A. M.—J. C. H.* 1, Oncidium barbatum, Lindl., true; 2, Oncidium hastatum, Lindl. —*W. M. G.* Erinus lychnidea.—*Rob.* Geranium sanguineum.

PANSIES: *L. E. J.* We cannot tell if the Pansies you sent are named. We cannot undertake to give such information respecting florists' flowers.—*C. K.* King of Yellows is bright and attractive; not good enough for a show flower, and we fear the black spots would tell against it as a bedding sort.

PELARGONIUMS: *C. K.* The Tricolor Empress is bright and well-coloured, and appears to be worth cultivating. The rose-pink Empress of India has very large trusses of bright-coloured well-formed flowers, and is probably a meritorious novelty, but we judge only from a single truss from which most of the expanded flowers had fallen.

REPORTS: *F. A. D.* We cannot mention everything shown at exhibitions, nor every award made by judges, but only such as are likely to be of general interest. It frequently happens that the exhibitors only are interested in such reports, and we cannot devote our columns exclusively to their interests, as we should have to do to please them all.

THE AQUARIUM SHOW: ERRATUM.—Mr. Francis A. Davis, Anglesea House, Surbiton Park, has called our attention to an error in the report of this show, at p. 735. We stated that Messrs. Lover and North were the most successful amateur exhibitors of Tricolor Pelargoniums, but we learn that Mr. Davis' gardener, Mr. J. H. Hinnell, was 2d and Mr. North 3d.

☞ FOREIGN SUBSCRIBERS sending Post Office Orders, payable at the post-office, King Street, Covent Garden, London, are requested to be good enough to write to the Publisher, at the office of this paper, 41, Wellington Street, Covent Garden, at the same time, to inform him of the fact.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "Editors," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. *Letters relating to Advertisements, or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

CATALOGUES RECEIVED.—M. Van Waveren & Sons (Leeuwenstein Nurseries, Hillegom, near Haarlem, Holland), Wholesale Catalogue of Dutch Flower Roots. — Mr. John Laing (Forest Hill, London, S.E.), Catalogue of Stove and Greenhouse Plants, Florists' Flowers, Roses, Vines, &c.

COMMUNICATIONS RECEIVED.—Rose.—T. C. H.—J. S. P.—P. H. G.—W. C. S.—G. S.—J. S.—T. S. J.—J. N. E.—D. D.—Camjee.—F. B. W.

DIED, June 5, aged 80, at the Rectory, Woodstock, the Rev. GEORGE WILLIAM ST. JOHN, M.A., Rector of Bladon-cum-Woodstock.

*** IMPORTANT NOTICE.—*The* AGRICULTURAL GAZETTE *is now* PUBLISHED *on* MONDAYS, *in time for the Evening Mails, containing a Full Report of the London Markets, and of all other Agricultural Intelligence up to the hour of going to press.*

Markets.

COVENT GARDEN, June 8.

A good supply of Peas has reached the market since last week, principally from the West of England and Kent, while in new Potatos arrivals are heavy from the Channel Islands and Lisbon at lower prices. Among hothouse fruits there is a good demand for best Peaches, but seconds and small are only moved at low prices. Grapes sell readily at former quotations. *Jas. Webber, Wholesale Apple Market.*

VEGETABLES.

	s. d.	s. d.
Artichokes, per doz.	4 0	..
— Jerusalem, p. lb.	0 3	..
Asparagus (English), per bundle	2 0	10 0
— French	2 0	5 0
— Giant	18 0	40 0
Beans, French, p. 100	1 3	2 6
— Longpod, basket	5 0	..
Beet, per doz.	1 0	2 0
Cabbages per doz.	1 0	2 0
Carrots, per bunch	0 6	..
— new, do.	1 6	..
Cauliflowers, spring, per dozen	6 0	9 0
Celery, per bundle	1 6	2 0
Chilis, green, doz.	1 6	..
Cucumbers, each	0 4	1 0
Endive, per doz.	1 0	2 0
— Batavian, p. doz.	2 0	3 0
Herbs, per bunch	0 2	0 4

	s. d.	s. d.
Horse Radish, p. bun.	3 0	5 0
Leeks, per bunch	0 2	0 4
Lettuces, per score	2 0	..
Mint, green, bunch	0 4	..
Mushrooms, per pott.	1 0	2 0
Onions, young, bun.	0 4	0 6
Parsley, per bunch	0 4	..
Peas, green, per qt.	3 0	..
Potatos, new Jersey, per lb.	0 3	0 6
— Sweet, per lb.	0 6	..
Radishes, per bunch.	0 1	0 3
— Spanish, doz.	1 0	..
Rhubarb, per bundle	0 6	1 0
Salsafy, per bundle	0 9	..
Shallots, per lb.	0 6	..
Spinach, per bushel	2 0	..
Tomatas, per doz.	3 0	..
Turnips, new, bundle	0 9	1 0
Veg. Marrows, each	1 0	..

Potatos — Rocks, 105*s.* to 110*s.*; Regents, 140*s.* to 180*s.*; Flukes, 130*s.* to 160*s.*; Victorias, 120*s.* to 160*s.* per ton. Old stocks nearly exhausted.

FRUIT.

	s. d.	s. d.
Apples, per ½-sieve	1 6	5 6
Apricots, per box	2 0	3 0
Cherries, per box	3 0	6 0
Cobs and Filbts., lb.	0 9	1 0
Figs	10 0	20 0
Gooseberries, gr., qt.	0 9	1 0
Grapes, per lb	3 0	12 0
Lemons, per 100	6 0	10 0
Melons, each	6 0	12 0
Nectarines	10 0	36 0
Oranges, per 100	6 0	12 0
Peaches, per doz.	10 0	36 0
Pears, per doz.	3 0	15 0
Pine-apples, p. lb.	1 6	4 0
Strawberries, per oz.	0 3	1 3

CUT FLOWERS.

	s. d.	s. d.
Arum Lilies, per doz.	4 0	12 0
Azaleas, 12 sprays	0 6	2 0
Carnations, 12 blooms	2 0	4 0
Cineraria, per bunch	1 0	2 0
Eucharis, per doz.	6 0	12 0
Gardenia, per doz.	2 0	9 0
Heliotropes, 12 spr.	0 6	1 0
Lily of Valley, 12 spr.	1 0	3 0
Mignonette, 12 bun.	6 0	9 0
Nemophila, 12 bun.	1 6	4 0
Narcissus, single, 12 bunches	2 6	6 0
Narcissus, double, 12 bunches	9 0	24 0
Pelargoniums, 12 spr.	0 6	2 0
— Zonal do.	0 4	1 6
Pinks, white, per doz. bunches	3 0	9 0
Primula, dbl., p. bun.	1 0	1 6
Rhododend., 12 hds.	1 6	6 0
Roses, indoor, p. doz.	1 0	9 0
Spiræa, 12 sprays	1 0	4 0
Stephanotis, per doz. sprays	4 0	15 0

PLANTS IN POTS.

	s. d.	s. d.
Arum Lilies, per doz.	6 0	18 0
Azaleas, per doz.	24 0	60 0
Begonias, per doz.	6 0	12 0
Bouvardias, do.	12 0	18 0
Calceolaria, per doz.	9 0	24 0
— herbaceous, doz.	6 0	18 0
Cineraria, per doz.	6 0	18 0
Cyperus, do.	6 0	12 0
Deutzia, do.	6 0	18 0
Draciena terminalis	30 0	60 0
— viridis, per doz.	18 0	24 0
Ficus elastica	2 6	15 0
Fuchsia, per doz.	6 0	18 0
Genista, do.	6 0	18 0
Heaths, in var., doz.	12 0	30 0
Mignonette, do.	6 0	9 0
Myrtles, do.	3 0	9 0
Palms in variety, each	3 6	21 0
Pelargoniums, scarlet, per doz	4 0	9 0
— in variety, doz.	12 0	30 0
Petunias, double, doz.	9 0	30 0
— single, per doz.	6 0	12 0
Roses, Fairy, do.	9 0	15 0
— various, do.	18 0	30 0
Spiræa, per doz.	9 0	24 0
— palmata, each	2 0	5 0

SEEDS.

LONDON: *June* 8.—Our markets this week, as might have been expected, are quite of a holiday character; in fact the present season, late as it has been, is now about over, and no great speculative disposition to buy up what little seed is left over has yet shown itself. A few retail country orders for Clover seed, &c., still drop in which, seeing the scarcity of fine seed, are executed at full rates. It is very evident that stocks all round are unprecedentedly low: indeed of fine Trefoil the supply is quite exhausted. There is a fair inquiry for sowing Mustard and Rape seed; and choice samples of either variety are not plentiful. Trifolium of the growth of 1876 is beginning to attract attention, but as yet very little, if any, business has resulted. For Canary seed there is a small sale at unchanged currencies; but Hemp is scarce, and must be noted 1*s.* to 2*s.* per qr. dearer. For spring Tares, notwithstanding the great concession offered by holders, there is very little request. Linseed keeps steady. Blue boiling Peas readily find buyers. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Monday being a Bank holiday, there was no business transacted at Mark Lane. On Wednesday trade was quiet, but holders were rather firm. The supply of English Wheat was small, and fine qualties, of which there was a fair proportion, were moved with little difficulty; foreign Wheat, however, was in good supply, and the sale for all kinds was very slow. Barley was quoted the same as on Friday last, and there was no material change in Oats and other classes of spring corn. Flour was dull at about late rates.—Average prices for the week ending June 3:—Wheat, 46*s.* 4*d.*; Barley, 32*s.* 7*d.*; Oats, 28*s.* For the corresponding week last year:—Wheat, 41*s.* 11*d.*; Barley, 36*s.* 9*d.*; Oats, 30*s.* 7*d.*

CATTLE.

At Copenhagen Fields on Monday the number of beasts was small, and consequently prices ranged higher. The market generally had a holiday appearance. The sheep market was barely supplied, and although trade was not brisk throughout prices were high. Lambs sold about the same as of late. Calves were rather dearer. Quotations:—Beasts, 4*s.* 6*d.* to 5*s.* 4*d.*, and 5*s.* 10*d.* to 6*s.* 4*d.*; calves, 4*s.* 8*d.* to 6*s.* 4*d.*; sheep, 5*s.* 8*d.* to 6*s.* 4*d.*, and 6*s.* 8*d.* to 7*s.* 2*d.*; lambs, 7*s.* 6*d.* to 8*s.* 6*d.*—The market on Thursday was fairly supplied, but following a scanty market on Monday the tone was firm. Prime beasts realised fully late rates, and prime Devon wether sheep further advanced 2*d.* per stone. Prime calves also brought extreme rates, and, in some instances, rather more money. Lambs sold dearer.

HAY.

At Whitechapel market on Wednesday the supply of fodder was small; the trade ruled dull, and prices were with difficulty maintained. Prime Clover, 100*s.* to 145*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 132*s.*; inferior, 55*s.* to 75*s.*; and straw, 35*s.* to 46*s.* per load.—On Thursday the supplies were good, and met a fair demand. Quotations:—Clover, best, 115*s.* to 145*s.*; inferior, 85*s.* to 95*s.*; hay, best, 110*s.* to 132*s.*; inferior, 55*s.* to 75*s.*; and straw, 35*s.* to 46*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 138*s.* to 147*s.*; inferior, 90*s.* to 115*s.*; superior Clover, 150*s.* to 160*s.*; inferior, 105*s.* to 126*s.*; and straw, 48*s.* to 52*s.* per load.

COALS.

No business was transacted at market on Monday, it being a Bank holiday. On Wednesday the demand for house coal was dull; previous prices were quoted for "best," but "seconds" were 6*d.* per ton lower. Quotations:—Walls Ends—Elliots, 18*s.*; Haswell, 20*s.*; Hetton, 20*s.*; Hetton Lyons, 17*s.* 3*d.*; Hawthorn, 17*s.* 3*d.*; Lambton, 19*s.* 6*d.*; South Hetton, 20*s.*; Kelloe, 17*s.*; East Hartlepool, 19*s.* 9*d.*

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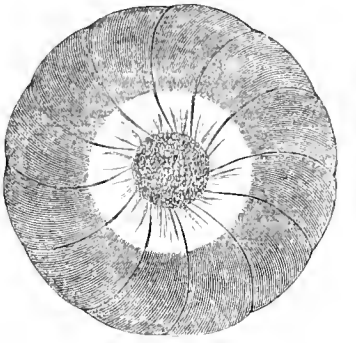
FLORISTS' FLOWERS,

POST FREE.

The Finest Strain of Cineraria.



SUTTON'S SUPERB CINERARIA.

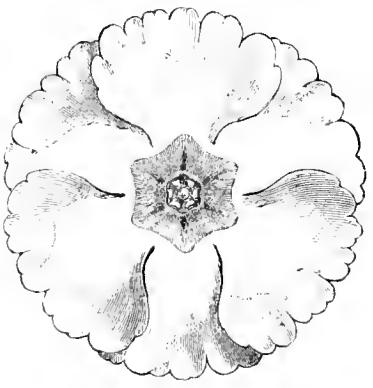
This will be found unequalled by any in cultivation, the seed having been saved from the finest named varieties only.

Price 2*s.* 6*d.* per packet, post-free.

From Mrs. A. ALLERTON, *Prittlewell, May* 8.

"Our Cinerarias this year (from your seed) are splendid; they far surpass any I saw at the Botanical Gardens yesterday."

The Finest Strain of Primula.



SUTTON'S SUPERB PRIMULA.

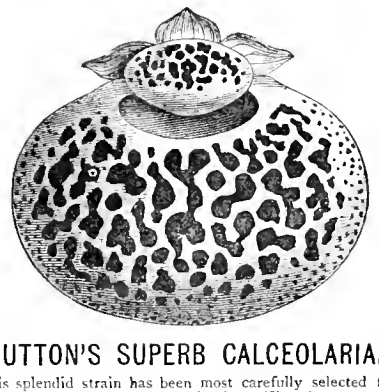
This choice stock has been carefully selected from the largest fringed flowers of good colour. Habit, robust; with bloom thrown well above the foliage.

Red, white, or mixed, 2*s.* 6*d.* per packet, post-free.

From W. EDWARDS, Esq., *Wellington, January* 21.

"I cannot help saying that the Primulas from your seed have always given great satisfaction, but this year more than ever."

The Finest Strain of Calceolaria.



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This splendid strain has been most carefully selected from the very finest collections in cultivation. The plants are compact in habit, with beautiful green foliage, and a profusion of bloom. The flowers are perfect in form and substance, and of every shade of colour.

Per packet, 2*s.* 6*d.*

From A. E. RUSSELL, Esq., *Dalnabreck, July* 10.

"My Calceolaria plants, from seed purchased of you last year, are particularly fine, of very compact habit, and beautiful in colour."

SUTTON & SONS,

THE QUEEN'S SEEDSMEN, READING.

NETTING for FRUIT TREES, SEED BEDS, RIPE STRAWBERRIES, &c.
TANNED NETTING for protecting the above from Frost, Blight, Birds, &c., 2 yards wide, 3*d.* per yard, or 100 yards, 20*s.*; 4 yards wide, 6*d.* per yard, or 50 yards, 20*s.*
NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowls, 2 yards wide, 6*d.* per yard; 4 yards wide, 1*s.* per yard; ¾-inch mesh, 4 yards wide, 1*s.* 6*d.* per yard.
TIFFANY, 6*s.* 6*d.* and 7*s.* 6*d.* per piece of 20 yards.
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TANNED NETTING, 2 yards wide, 1½*d.* per yd.; 4 yds. wide, 2*d.* per yd. NEW THREAD and TWINE GARDEN NETTING, 1-inch mesh, 1 yd. wide, 2*d.*; 2 yds. wide, 4*d.*; 4 yds. wide, 8*d.* per yd. HEXAGON GARDEN NETTING, 76 meshes to the square inch, 5*d.* per yd. FISHING NETS, TRAMMEL and FLUE NETS, complete, any size, 1*s.* per square yd. BIRD NETS, SPRING TRAPS for LARKS, &c., 7*s.* to 10*s.* CLAP NETS for Bird Catching, 10 yds. long, 5 feet deep, with staffs, pull-line, and stop-cord, £1 10*s.* RABBIT NETS, fixed twelve mesh wide, £1 5*s.* per 100 yds.; eighteen mesh wide, £1 18*s.* complete, and of the best quality. FLAMBS, 6*s.* per dozen.—W. CULLINGFORD, Wellington Road, Forest Gate, Stratford, London.

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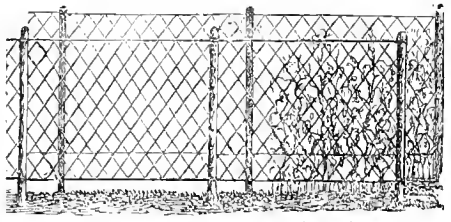
FOR TRAINING PEAS, INSTEAD OF STICKS.
GALVANIZED AFTER MADE.



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6 feet wide, 3 feet high .. .. .. 3*s.* 6*d.* each panel.
6 feet wide, 4 feet high .. .. .. 4*s.* 0*d.* ,,
6 feet wide, 5 feet high .. .. .. 5*s.* 0*d.* ,,
The above engraving shows the arrangement of the panels tied to ordinary wood stakes.
Improved Framed Standards for ditto, galvanised, 2s. 6d., 2s. 9d., and 3s. each.

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NEW PATTERN, GALVANISED,
8s. 6d. per dozen, 3 feet lengths.
Five per cent. discount allowed for prompt cash on Orders amounting to 20*s.* and upwards.
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Portable Lawn Vase.

LAWN BASKET.—Suitable for Croquet, Lawn, and other places where it is not desirable to cut the Grass for Beds, &c
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GARDEN NETTING, strong, tanned, 1½*d.* per square yard; 1 to 4 yards wide, 500 yards, £2 15*s.*; Whole Nets, 12 by 45 yards, £2 2*s.* TIFFANY, ½-inch mesh Netting, cheap.
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Protect your Fruit Trees.
JOHN EDGINGTON AND CO.'S GARDEN NETTING, 1, 2, 3, and 4 yards wide, 1*d.* per square yard.
JOHN EDGINGTON AND CO., 48, Long Lane, West Smithfield, London, E.C., Marquee, Tent, and Flag Makers to the Royal Family.

EDGINGTON'S GARDEN NETTING, the cheapest and most durable, at 1*d.* per square yard, or in quantities of 250, 500, or 1000 yards, carriage free.
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HAYTHORN'S and WALLER'S NETTINGS.
A quantity of good Second-hand Government TENTS from Abyssinia for Sale, Cheap.
Sample of material free on application.
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Is in use over many thousand miles,
And has been awarded the Medals and highest Commendation of all the leading Agricultural Societies.
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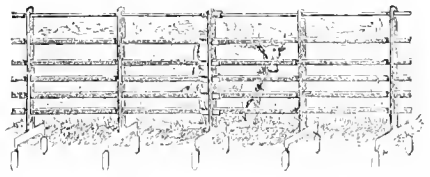
RIGID INTERMEDIATE IRON POSTS,
STRONG and DURABLE WIRE CABLE STRANDS,
Forming the most efficient Strained Iron Fencing known for agricultural and general purposes.

Continuous Bar Iron Fencing,



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IN WROUGHT AND CAST IRON,
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WICKET AND GARDEN GATES,
In Great Variety of Patterns.
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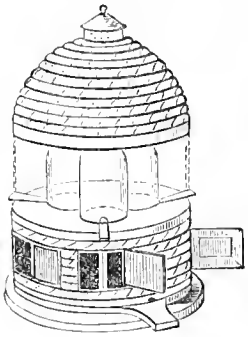
1, DELAHAY ST., WESTMINSTER, S.W.

TANNED GARDEN NETTING, 1½*d.* per Square Yard, for Protecting Seed-beds, Peas, Fruit Strawberries, &c., from Birds, Frost, Blight, &c., and as a Fence for Fowls, in 1, 2, 3, and 4-yards widths. Hexagon, Tiffany, and other Netting, Galvanised Wire Netting, Pea Hurdles, and Seed Protectors, by
C. WRIGHT, 20, Lime Street, E.C., late 376, Strand, W.C.

Beehives.—Two Silver Medals awarded to
GEO. NEIGHBOUR AND SONS at the Paris Exhibition of 1867. The only English Exhibitors who obtained a Silver Medal for Beehives.
NEIGHBOUR'S IMPROVED COTTAGE BEEHIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, working three bell-glasses, is neatly and strongly made of straw; it has three windows in the lower Hive. This Hive will be found to possess many practical advantages, and is more easy of management than any other Beehive that has been introduced.

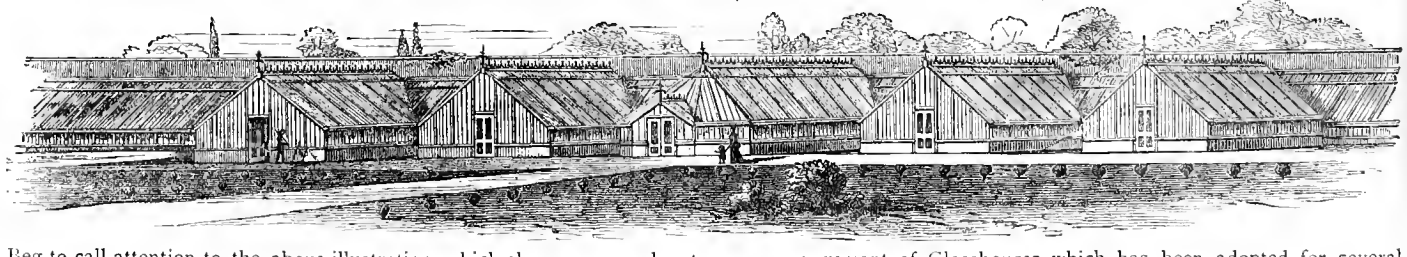


Price, complete £1 15 0
Stand for ditto 0 10 6
The LIGURIAN or ITALIAN ALP BEE being much in repute, G. N. & SONS supply a Swarm of Bees with genuine Italian Queen, in the Improved Cottage Hive, at £4. Hive included.
An Italian Alp Queen, with full directions for uniting to Black Stocks, 15*s.* each.
ENGLISH BEES.—Stocks and Swarms may be obtained as heretofore.
THE APIARY. By A. NEIGHBOUR. 5*s.*, postage 4*d.*
A newly arranged Catalogue of other improved Hives, with Drawings and Prices, sent on receipt of two stamps.
Agents for Straw, Woodbury, and other Hives and Supers, made by James Lee, at his prices.
GEO. NEIGHBOUR AND SONS, 127, High Holborn, W.C., or 149, Regent Street, London, W.

The Carr-Stewarton Hive.

Crystal Palace Prize, 1874. Bronze and Silver Medals, 1875.
First Prize from the Glasgow and West of Scotland Horticultural Society, 1875.
THE CARR-STEWARTON HIVE is a combination of the principal advantages to be found in the best Bar-frame Hives, with those of the celebrated Stewartons. It consists of two Stock-boxes, each 15 inches square and 6 inches deep, and a Honey-box of 4 inches in depth—Crown-board, Adapting-board, and Floor-board, all reversible; the Crown-board with four slides. Prices, Stock-boxes (wood or straw), 10*s.* 6*d.* each; Honey-boxes, 7*s.* 6*d.*; Crown-boards, 4*s.* 6*d.*; Floor-boards, 3*s.*; Pyramidal Roofs, 9*s.* 6*d.* and 12*s.* 6*d.*
THE UNION HIVE.—A cheap, new storyfying Hive, invented by the designer of the Carr-Stewarton, and very suitable for cold exposed localities, or for small swarms. Price: the complete Hive, 22*s.* 6*d.*, consisting of two Stock-boxes, Honeybox, Floor-board, Crown-board, and painted Roof. Orders received by
Mr. JAS. LEE, Hive Manufacturer, Bagshot.
Printed Directions free of charge

MESSENGER & COMPANY,
CONTRACTORS, MIDLAND HORTICULTURAL BUILDING AND HOT-WATER
ENGINEERING WORKS, LOUGHBOROUGH,

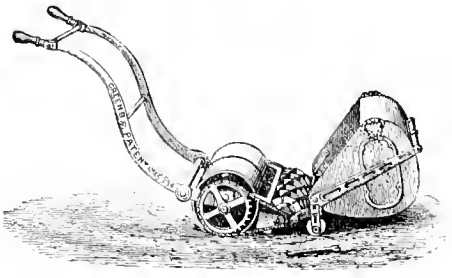


Beg to call attention to the above illustration, which shows a very advantageous arrangement of Glasshouses which has been adopted for several important Works on M. & Co.'s recommendation.
Only thoroughly well-seasoned timber used. Glasshouses erected on Messenger's patent principles are, owing to mechanical arrangements, very strong, *most durable*, light, *elegant; perfect efficiency* for purpose intended is *guaranteed;* are economical in cost and maintenance. Messenger's Patent Boilers, Flexible Jointed Hot-water Pipes and Valves, are now in use in many thousands of instances, with the greatest success. Particulars on application.
Plans and Estimates forwarded. Ladies and Gentlemen waited upon. The Plans of Architects and others carried out. Illustrated Circular Free.

GREEN'S PATENT "SILENS MESSOR,"

Or Noiseless Lawn-mowing, Rolling, and Collecting Machines for 1876.

The Winner of every Prize in all cases of Competition.



The superiority of these Machines over those of all other makers is universally acknowledged. They will Cut either long or short Grass, Bents, &c., wet or dry.

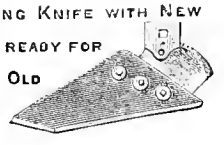
These advantages no other Lawn Mowers possess.

They are the simplest in construction, the easiest to work, the least liable to get out of order, make little noise when in use, and are the most durable Lawn Mowers extant.

Every Lawn Mower sent out is guaranteed to give entire satisfaction, otherwise it may be returned at once free of cost to the Purchaser.

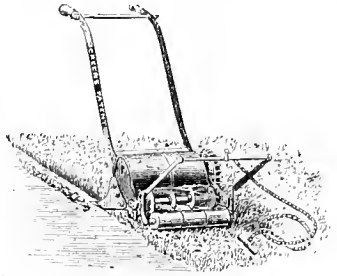
N.B.—Those who have Lawn Mowers to repair will do well to send them either to our Leeds or London Establishment, where they will have prompt attention, as an Efficient Staff of Workmen is kept at both places.

TURF CUTTING KNIFE WITH NEW DRUM FIXING READY FOR ATTACHING TO OLD MOWERS.



GREEN'S PATENT "MONARCH" LAWN MOWER

With Chain and Internal Gear combined.



"MONARCH" NO. 1, CHAIN OFF SET FOR CUTTING TURF.

Descriptive Illustrated Price List free on application.

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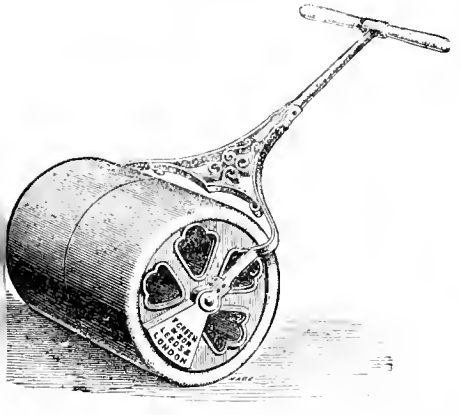
For Lawns, Drives, Bowling Greens, Cricket Fields, and Gravel Paths.

SUITABLE FOR HAND OR HORSE POWER.



They can be had of all respectable Ironmongers and Seedsmen in the United Kingdom; or direct from the Manufacturers,

THOMAS GREEN & SON,

SMITHFIELD IRONWORKS, LEEDS;

And 54 and 55, BLACKFRIARS ROAD, LONDON, S.E.

The Best, Cheapest, and Most Durable Paint

for all kinds of Work, Internal and External, is

THE GRANITIC PAINT.—Its body is superior to Lead, its durability far greater, and it is more economical. Sold, ground in Oil, in ALL COLOURS, by the GRANITIC PAINT COMPANY, Removed to 45, Fish Street Hill, E.C.

Damp Walls Cured and Decay in Stone Prevented,

at a Trifling Cost, by

THE SILICATE ZOPISSA COMPOSITION. Manufactured in all Colours, or as a COLOURLESS LIQUID, by the SILICATE ZOPISSA COMPOSITION AND GRANITIC PAINT COMPANY, Removed to 45, Fish Street Hill, E.C.

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H.R.H. THE PRINCE OF WALES,

The British, Indian and Colonial Governments,

8000 of the Nobility, Gentry, and Clergy,

Railway and Canal Companies, Collieries, Iron-masters, &c., &c.,

Is extensively used for all kinds of

OUTDOOR WORK.

It is especially applicable to

WOOD, IRON, BRICK, STONE & COMPO.

CAN BE LAID ON BY UNSKILLED LABOUR.

Sold in all Colours.

2 cwt. free to all Stations.

Prices, Patterns, and Testimonials sent Post Free.

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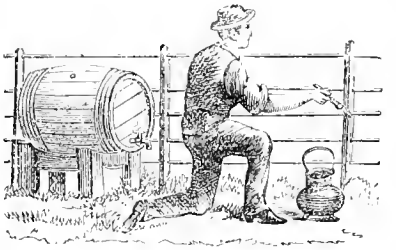
No AGENTS.

Oil Paint No Longer Necessary.



HILL AND SMITH'S BLACK VARNISH for Preserving Ironwork, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at *1s. 6d.* per gallon, at the Manufactory, or *1s. 8d.* per gallon carriage paid to any Station in the Kingdom.

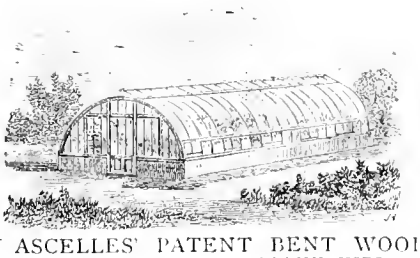
UNSOLICITED TESTIMONIAL.

Glangwilly, Llanpumpsant, Carmarthen, Nov. 27, 1873.—"Mr. Lloyd Lloyd encloses cheque for £3 5s., amount due to Messrs. HILL & SMITH, and he considers the Black Varnish one of the most useful things he ever possessed."

Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley; and 118, Queen Victoria Street, London, E.C., from whom only it can be obtained.

CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would specially draw attention to the fact that every cask of their Varnish is legibly marked with their name and address, without which none is genuine

Plant House.



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The curved house is more durable, stronger, lighter in construction, and no bent glass is required.

W. H. LASCELLES, 121, Bunhill Row, London, E.C., will supply Drawings and Estimates free of charge.

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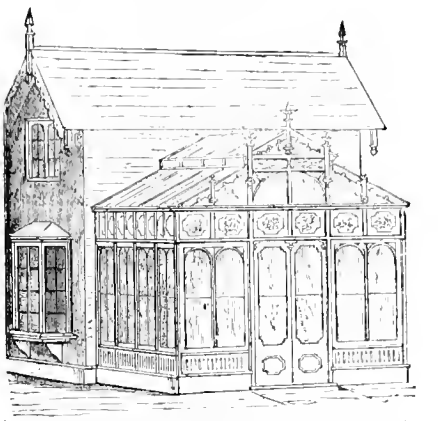
Designed, Built, and efficiently Ventilated and Heated.

Estimates given to Architects' Plans, or to Rough Sketches, with Sizes, &c.



Country Works at Gloucester, Coventry (near Ulverstone), Paisley, and Aberdeen only.

A PAMPHLET with Illustrations, Testimonials, &c., and PRICE LISTS of Sir J. Paxton's Hothouses, for 3*d.* post free.

A HANDBOOK of Vine and Fruit Tree Cultivation, with Plans of Glass Houses, Heating, &c., post free, 13*d.*

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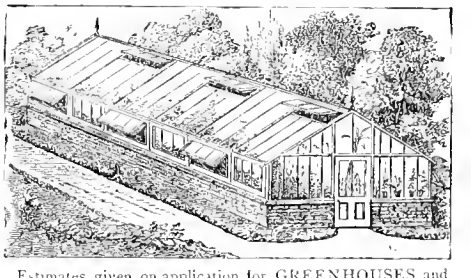


Estimates given on application for GREENHOUSES and CONSERVATORIES of all kinds, and to any design.

GARDEN BOXES and LIGHTS.	Each
	£ s. d.
Portable Box with One Light, 6 feet by 4 feet, glazed good 16-oz. sheet glass, painted four coats, and packed ready for use	35 0
Portable Box with Two Lights, as above, each light 6 feet by 4 feet	65 0

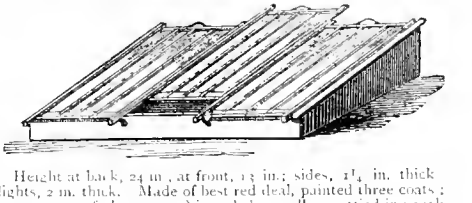
LIGHTS ONLY.	
	£ s. d.
3 feet by 4 feet Light, not painted nor glazed	3 6
Ditto glazed, good 16-oz. sheet glass, and painted 4 coats	10 0
6 feet by 4 feet, not painted nor glazed	6 0
Ditto glazed and painted four coats	16 6

BOULTON AND PAUL, Norwich, Horticultural Builders.

NEW PATENT GREENHOUSES.—Can be erected without the aid of either carpenter, glazier, painter, or bricklayer. New Lists, containing a number of Illustrations and Prices, free by post.

PATENT PLANT PRESERVERS.—Now ready, our new List of Prices, with full descriptions, clearly showing the uses to which these handy articles may be applied. Free by post.

MELON OR CUCUMBER FRAMES.—All sizes, ready for immediate delivery.



Height at back, 24 in., at front, 13 in.; sides, 1¼ in. thick lights, 2 in. thick. Made of best red deal, painted three coats; every pane of glass (21 oz.) is nailed as well as puttied in; each light has an iron strengthening rod and handle.

Cash prices, carriage paid to any station in England:—

	£ s. d.		£ s. d.
All 6 feet wide.		All 6 feet wide.	
4 ft. long, 1 light	1 17 6	16 ft. long, 4 lights	6 7 6
8 ft. „ 2 „	3 5 0	20 ft. „ 5 „	7 17 6
12 ft. „ 3 „	4 17 6	24 ft. „ 6 „	9 7 6

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BELGIAN GLASS for GREENHOUSES, &c.,

Can be obtained in all sizes and qualities, of

BETHAM & SON,

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B. & S. have always a large Stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., in 16-oz. and 21-oz.

Metallic Hothouse Builder to Her Majesty.

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HOTHOUSE BUILDER and HOT-WATER APPARATUS ENGINEER.
55, Lionel Street, Birmingham Established A.D. 1818.
BOOKS of DESIGNS, 5s. each.

☞ The Extensive Ranges of Metallic Hothouses in the Royal Gardens, Windsor and Osborne, were executed at this Establishment

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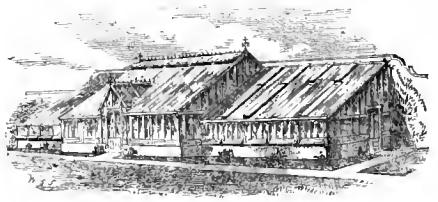

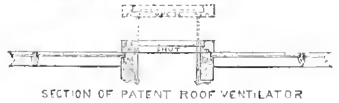

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Hot-Water Apparatus Fixed in any part of the Kingdom, and guaranteed.

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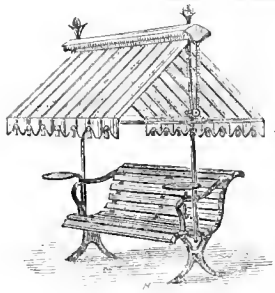

THE NEW
Awning Garden Seat,
With two revolving tables and shifting gear for curtains.

Also the
NEW SELF-COILING HOSE REELS.

Of all Ironmongers, or of the Manufacturer,
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The Principal Advantages derived are great Economy of Fuel and Steadiness of Heating Power.

	No. of feet 4-in. piping heated.
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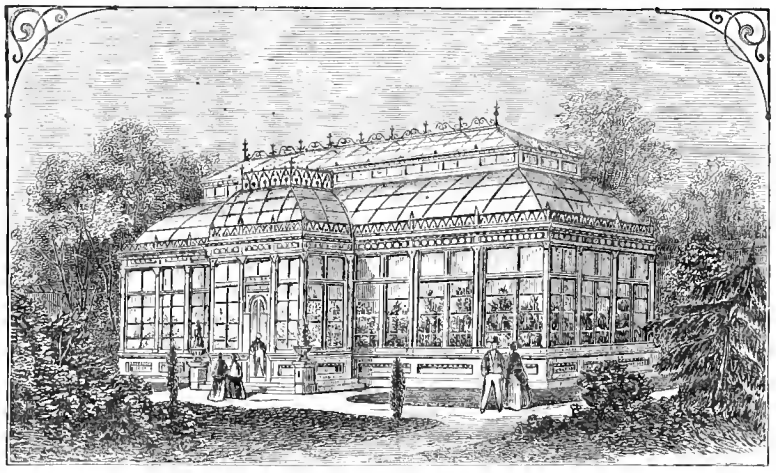

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ARCHITECTS' DESIGNS CAREFULLY CARRIED OUT.

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RANSOMES' AUTOMATON LAWN MOWERS.

THE BEST, SIMPLEST, AND MOST DURABLE MACHINES.

The "Automatons" are thoroughly strong, well-made Machines, easy to work, and cut the grass perfectly and leave no ribs. They collect the cut grass into a box in front of the Machine, or deliver it on the Lawn behind the Machine as required. They have adjustable handles to suit the height of any person, and are seat out with both front and side rollers, the former for use in general work, and the latter when cutting long grass, or when it is unnecessary to roll the grass in front of the cutters. These Machines have the best wheel gearing, combined steel and iron knives, an automatic silent action, instead of ratchets, and all the parts easily adjustable. Twelve thousand in use. **Sizes, 8 to 20 inches. Prices from 55s.**

RANSOME'S "LITTLE GEM" LAWN MOWERS,

For small gardens. These perfect "Little Gems" have a grass-collecting box, and the height of cut can be varied. They have an adjustable ledger blade, and the height of the handle can be adjusted to suit any person. The cutters can be reversed when blunt by driving the Machine in the opposite direction.

Prices, 6 in., 25s.; 8 in., 35s.

Free Delivery to all principal Railway Stations. Trial allowed.

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Saynor Cooke and Ridal's
Celebrated
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Pruning Budding and Grafting Knives
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GARDEN SHEARS, TOOLS &c
Every Article warranted CORPORATE MARK OBTAIN Established 138 years.
Paxton Works Sheffield.

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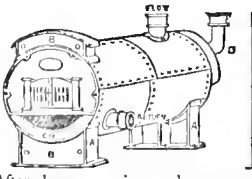
TRENTHAM GREENHOUSE BOILER,



After long experience, has proved the most SIMPLE, ECONOMICAL, EFFECTUAL, and LASTING BOILER extant; recently much improved. For Illustrations, with full particulars, apply to the Sole Makers,

F. & J. SILVESTER,
Castle Hill Foundry, Engineering and Boiler Works,
Newcastle, Staffordshire.

☞ Our Boilers are the ONLY ones made with the sanction and under the inspection of the inventor, Mr. Stevens—all others being base imitations.

THE
New Patent Garden Pump.
Price 25s. complete
(Packed for Rail, 2s. extra).

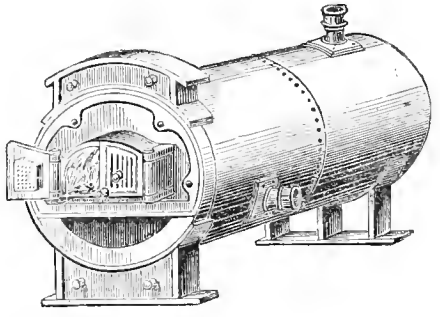
This Pump is on an entirely new principle, and for ease of working and portability stands unrivalled.

Descriptive Catalogue gratis and post-free.

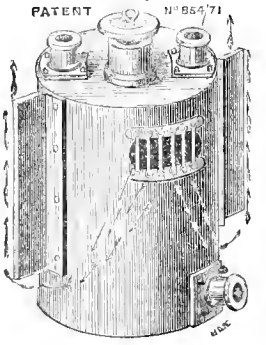
NYE & CO.,
373, OXFORD STREET, LONDON, W.

THE THAMES BANK
IRON COMPANY,
Old Barge Wharf, Upper Ground Street, London,
SURREY SIDE, BLACKFRIARS BRIDGE.

HOT-WATER BOILERS. PIPES, CONNECTIONS.



("TRENTHAM IMPROVED" BOILER.



("EXCELSIOR" BOILER.)

NEW PATENT "CLIMAX" BOILER (1874). See p. 666, 1874, *Gardeners' Chronicle.*
"GOLD MEDAL" BOILER (Birmingham, 1872).
PATENT "EXCELSIOR" BOILER (1871).
☞ *The largest and most complete Stock in the Trade; upwards of Twenty Thousand Pounds' worth to choose from.*

"WITLEY COURT" BOILER (Silver Medal 1872).
"TRENTHAM IMPROVED" BOILER, with Waterway End and Smoke Consumer.
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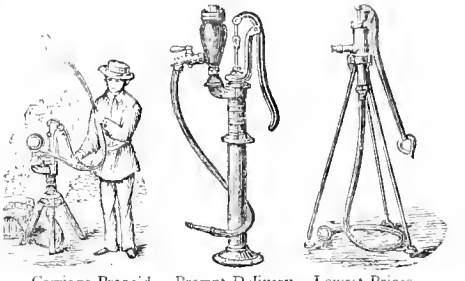

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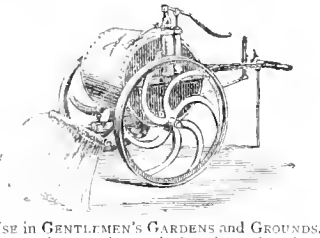

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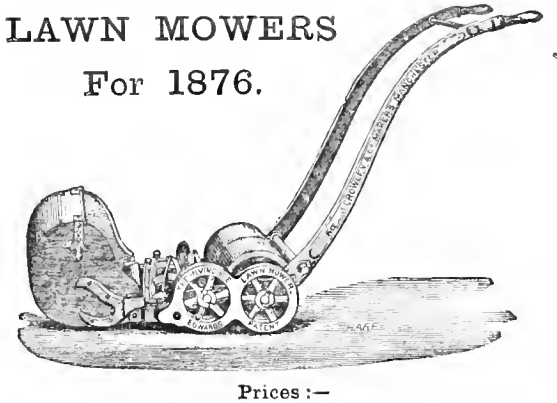

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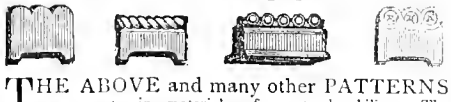

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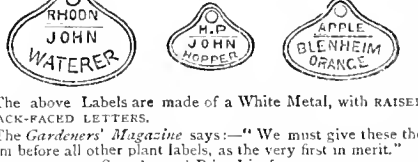

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FOREMAN.—Well acquainted with Plant Growing for London Market. Been last twelve months with G. Beckwith & Son.—D. MERRITT, 8, St. Ervan's Road, Notting Hill, W.

FOREMAN, in a Private Establishment.—Age 26; good references.—W. T. K., 104, Stanhope Street, Hampstead Road, N.W.

FOREMAN, in a good Establishment.—Age 24; has had nine years' experience in Vines, Pines, Cucumbers, Melons, and Stove and Greenhouse Plants. Good character from present employer. Please state if bothy found.—A. B., 1, Grove Cottages, The Grove, Ealing, W.

FOREMAN, or SECOND, in a first-class Establishment.—Age 24, single; 10 years' experience in first-class places. Leaving through death of late employer.—Y. Z., Spring Lodge, Lawrie Park, Sydenham, S.E.

FOREMAN, or good UNDER GARDENER. Age 25, fourteen years' experience. Good references.—A. L., Mrs. Payne, Langton Green, Tunbridge Wells.

FOREMAN (GENERAL), in a good small or medium-sized Nursery. Thorough knowledge of the profession. References, &c., good.—W. C. W., 8, Stamford Road, King's Road, Fulham, S.W.

NURSERY FOREMAN.—Age 29; good experience Outdoor and In. Z. A., *Gardeners' Chronicle* Office, W.C.

TO NURSERYMEN (near London).—A steady Man, age 47, well up in Soft-wooded Plants, Budding or Villa Gardening, requires a situation. Has a four years' character.—GARDENER, Ifield Park, Crawley, Sussex.

TO NURSERYMEN.—Wanted, a Situation in a Nursery. Good Propagator of Soft-wooded and Stove Plants, Ferns, &c. First-class character as to ability, sobriety, &c.—J. S. G., 4, Kertch Place, Stroud, near Rochester.

MANAGER, TRAVELLER, or HEAD SHOPMAN, &c.—A Gentleman, age 31, is in want of a situation as above in the Nursery, Seed, or Florist business. Good references.—FLORAL, City News-room, 4, Ludgate Circus Buildings, E.C.

TRAVELLER, or CORRESPONDENT and SALESMAN.—Young, of good ability and address. Has excellent certificates, and thorough knowledge of French and German.—B. F., *Gardeners' Chronicle* Office, W.C.

TRAVELLER.—Messrs. MINIER, NASH & Co. will shortly require an active, energetic, experienced Man to take a journey through the North of England, Scotland, and Ireland. One who has already taken this journey would be preferred.—Address full particulars to 60, Strand, W.C.

SHOPMAN, or SHOPMAN and TRAVELLER.—Young; several years' experience in the best houses in the trade. Good references.—F. R. S., *Gardeners' Chronicle* Office, W.C.

To the Seed Trade.

SHOPMAN (ASSISTANT).—Age 22; seven years in last place. Good reference.—E. M., Messrs. Jas. Jefferies & Sons, Seed Merchants, Cirencester.

UNDER STEWARD.—A Gentleman, age 30, married, seeks an appointment as above to a Nobleman or Gentleman of property. Has had experience in farming generally, and is a good accountant. Highest testimonials and references.—S., Mr. G. Street, 30, Cornhill, E.C.

EPPS'S COCOA.
GRATEFUL—COMFORTING.
"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided our breakfast tables with a delicately-flavoured beverage which may save us many heavy doctors' bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal shaft by keeping ourselves well fortified with pure blood and a properly nourished frame."—*Civil Service Gazette.*

KINAHAN'S LL WHISKY.
This celebrated and most delicious old mellow spirit is the very CREAM of IRISH WHISKIES, in quality unrivalled, perfectly pure, and more wholesome than the finest Cognac Brandy. Note the Red Seal, Pink Label, and Cork branded "Kinahan's LL" Whisky.
Wholesale Depot, 20, Great Titchfield Street, Oxford Street, W.

DINNEFORD'S FLUID MAGNESIA.—
The best remedy for ACIDITY of the STOMACH, HEARTBURN, HEADACHE, GOUT, and INDIGESTION; and the safest aperient for delicate Constitutions, Ladies, Children, and Infants.
DINNEFORD AND CO.,
172, New Bond Street, London, and all Chemists.

HOLLOWAY'S PILLS and OINTMENT.—As an example of adaptation of means to an end these remedies are remarkable, for the end they have in view is the curation of disease and the relief of suffering humanity; and to this end they are adapted in the most perfect manner. They restore diminished vigour to the enfeebled, impart ease to painful parts, purify and strengthen impure and impoverished blood, soothe excited nerves, and in short are direct antagonists and enemies to disease of all kinds. So great are the powers of these remedies that there is scarcely a spot on the habitable globe, with which communication is established, in which they are not used, affording ease and comfort to the human race.

J. WEEKS & CO.'S IMPROVED
CAST-IRON & SLATE FOUNDATIONS

A SPLENDID SUCCESS. A SPLENDID SUCCESS.

Encouraged by the IMMENSE SUCCESS of Iron and Slate Foundations, as applied for many years to Peach Wall Coverings, we have been induced to extend their application in an IMPROVED and UNIQUE form to every description of Horticultural Building.

SPECIAL ADVANTAGES:

ECONOMY OF COST,
ECONOMY OF LABOUR,
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EXTREME RIGIDITY,

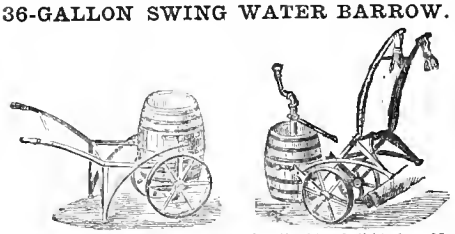
NO FRONT BRICKWORK REQUIRED,
NO BUILDING OF ARCHES,
EASY OF REMOVAL,
TENANT'S FIXTURES.

UNIQUE IN NEATNESS AND GENERAL ADAPTABILITY.

J. WEEKS & CO.,
HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS,
KING'S ROAD, CHELSEA, LONDON, S.W.

BOULTON & PAUL, Horticultural Builders, NORWICH,
MANUFACTURERS OF PRIZE GARDEN IMPLEMENTS, PRIZE GARDEN FURNITURE, &c.
DESCRIPTIVE LISTS Free by Post. Orders amounting to 40s. Carriage Paid.

36-GALLON SWING WATER BARROW.

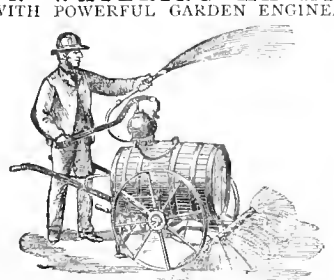


The above is invaluable for carrying liquids of all kinds. No Garden, Farm, Stable, or Kitchen Yard should be without one. Two or more tubs can be had with one carriage at a small additional cost. A lad can easily work it; but if required to travel long distances over rough ground a pony can be attached. The wheels and carriage are wrought iron, and the tub oak.

Cash prices. Carriage paid to any Station in England.

Price	£2 10 0
Ditto, with two tubs	3 8 0
Spreader and Valve	extra 0 15 0
Garden Engine and fitting for tub ..	2 10 0
18-Gallon Barrow, with Galvanised Tank	2 0 0
30-Gallon ,, ,,	2 10 0

THE HAMBURGH FIRST PRIZE
LAWN WATERING MACHINE,
WITH POWERFUL GARDEN ENGINE.

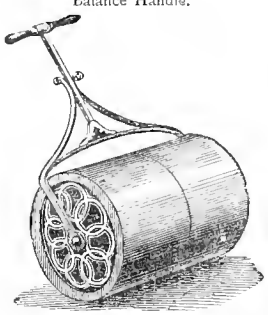


Cash Prices. Carriage paid to any Station in England.
Complete (36 gallons) £7 10 0 | If without Pump .. £4 10 0

This new article is very complete, and most useful in large gardens; is fitted with valve and spreader for distributing water or liquid manure. Waterpots and pails can be filled when the spreader is not in use.

The engine is bolted to the top of the barrel, and fitted with suction pipe, which is useful either for drawing water direct from a pond or out of the barrel.

GARDEN ROLL,
Balance Handle.



These are very heavy and well made.

SINGLE-CYLINDER.

18 in.	long by 18 in.	diam...	£2	10 0
20 ,,	20 ,,	..	3	5 0
22 ,,	22 ,,	..	4	0 0
24 ,,	24 ,,	..	4	15 0

DOUBLE-CYLINDER.

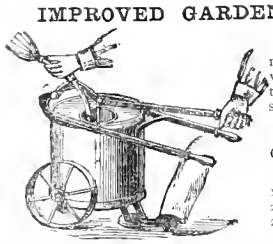
18 in.	long by 16 in.	diam...	£2	17 0
20 ,,	18 ,,	..	3	10 0
22 ,,	20 ,,	..	4	5 0
24 ,,	22 ,,	..	5	0 0
26 ,,	24 ,,	..	5	15 0

PORTABLE PUMP

For Liquid Manure or Water.
With stand .. £2 7 6
10 feet of India-rubber Suction Pipe, with Clip and Strainer.. 1 12 6

Powerful Garden and Conservatory Engine
Can be used with a pail or Water-barrow, £2 10s.

IMPROVED GARDEN ENGINE.



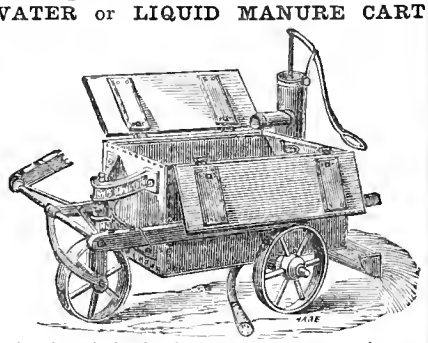
A first-class article, made extra strong, with very powerful engine, throws a continuous stream of water 50 feet.

Cash Prices.
Carriage paid to any Station in England.

15 gallons ..	£4 0 0
20 gallons ..	4 10 0
25 gallons ..	5 0 0

The Judges at the late Great International Horticultural Exhibition held at Manchester (1873) tested this Engine very severely, and, although all the principal makers competed, it was declared to be the best, and was awarded the only prize, a Silver Medal.

WATER or LIQUID MANURE CART.

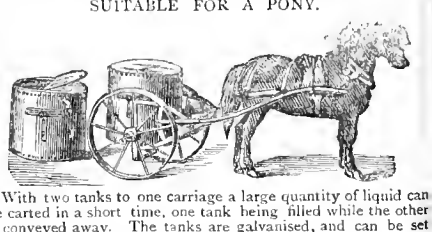


The above is by far the strongest, most convenient, and cheapest implement of the kind yet introduced. For conveying and distributing liquid manure it is invaluable. A pump can be attached for emptying cesspools, &c. As a drinking trough for cattle, and for many other farm purposes, it is most useful. The shafts and lids are arranged to turn back out of the way. Carriage paid to any Railway Station in England. Cash Prices.

To hold 140 gallons	£12 0 0
,, 200 ,, ...	14 0 0
,, 250 ,, ...	10 0 0
Galvanised Iron Pump and 10-feet Indiarubber Suction Pipe	4 0 0
Spreaders .. .. each	0 15 0

The 140 and 200 gallon carts are best suited for one horse.

SWING WATER or MANURE CART,
SUITABLE FOR A PONY.



With two tanks to one carriage a large quantity of liquid can be carted in a short time, one tank being filled while the other is conveyed away. The tanks are galvanised, and can be set down and left in the fields for cattle to drink from.

Cash Prices. Carriage paid to any Railway Station.

To hold 60 gallons	£6 10 0
,, 100 ,, ...	10 0 0
Valve and Spreader for dito	1 0 0

Goods amounting to 40s. sent carriage free to any of the principal railway stations in England. Cash or references respectfully requested with transmission of all first orders.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, June 10, 1876.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

No. 129.—Vol. V. { New Series. } SATURDAY, JUNE 17, 1876. { Registered at the General Post Office as a Newspaper. } Price 5d. { Post Free, 5½d. }

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Subscribers who wish to have "The Gardeners' Chronicle" forwarded DIRECT FROM THE OFFICE are respectfully informed that payment MUST BE MADE IN ADVANCE.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE.—FRUIT and FLORAL, and SCIENTIFIC COMMITTEES' MEETINGS, on WEDNESDAY next, June 21, at 11 o'Clock. GENERAL MEETING at 3 o'Clock. Admission 1s.

ROYAL BOTANIC SOCIETY, Gardens, Regent Park, N.W.
EXHIBITION of PLANTS, FLOWERS, and FRUIT, WEDNESDAY, June 21. Gates open at 2 o'Clock.
EVENING FÊTE, WEDNESDAY, July 5. Gates open at 8 o'Clock.
Schedules of Prizes can be had on application by Post.
Tickets to be obtained at the Gardens only, by Vouchers from Fellows of the Society. Price, for June 21, 5s. each, and for the Evening Fête 10s. each, or on the day of the exhibition, 7s. 6d each, and on the day or evening of the Fête, 15s. each.

CRYSTAL PALACE GREAT ROSE SHOW.—The Directors regret to announce that the lateness of the season necessitates the postponement of the Rose Show till FRIDAY and SATURDAY, June 30 and July 1.

ALEXANDRA PALACE.—GREAT ROSE SHOW of the Season, FRIDAY and SATURDAY, July 7 and 8. LAST DAY of ENTRY, July 1. Schedules of Prizes and all particulars may be had on application to ALEX. McKENZIE, 1 and 2, Great Winchester Street Buildings, E.C., and at the Alexandra Palace, Muswell Hill, N.

LEE and BLACKHEATH HORTICULTURAL SOCIETY will hold its ANNUAL EXHIBITION in the Grounds of John Penn, Esq., The Cedars, Lee, on WEDNESDAY and THURSDAY, June 21 and 22.
Schedules and Forms of Entry may be had on application to 5, Boones Road, Lee, S.E. C. HELMER, Sec.

THE EXETER GREAT ROSE SHOW and HORTICULTURAL FÊTE will be held on FRIDAY, June 23. Prizes, £075. Prizes of £5, £3, £2, presented by Messrs. Paul & Son, of Cheshunt, will be awarded to Amateurs for twelve Tea-scented and Noisette Roses, single blooms. Schedules on application.
T. W. GRAY, Hon. Sec.

MAIDSTONE ROSE SHOW is POSTPONED till WEDNESDAY, June 28. ENTRIES CLOSE JUNE 24.

COLCHESTER and EAST ESSEX HORTICULTURAL SOCIETY.—A two days' Show will be held at Lexden Park, Colchester, on JUNE 28 and 29, in connection with the Essex Agricultural Show. £200 will be offered for Plants, Roses, Orchids, &c., in classes for Amateurs and Growers. Entries to be sent in by the 21st. Two Military Bands will attend. Prize Lists, &c., may be obtained of Mr. WM. HARRISON, Sec.
Colchester, and Birch Villa, near Colchester.

TORBAY HORTICULTURAL SOCIETY, ROSE SHOW, JUNE 29 and 30, 1876.
NOTICE.—In Class A, each treble may be shown in three stages of bloom, viz., one bloom fully open, a second half open, and the third in bud.
W. FANE TUCKER, Capt., Hon. Sec.

FROME ROSE SHOW is POSTPONED till THURSDAY, July 6, 1876.
A. R. BAILY, Hon. Sec.

CARTER'S GRASS SEEDS for Lawns and Parks, 20s. per bushel.

CARTER'S GRASS SEEDS for Permanent Pastures, 22s. 6d. to 36s. per acre.

CARTER'S GRASS SEEDS. Carriage Free. To suit all Soils.

CARTER'S GRASS SEEDS for Renovating Meadows and Lawns, 18s. to 20s. per bush.

CARTER'S, THE QUEEN'S SEEDSMEN, 237 and 238, High Holborn, W.C.

NEW STRIPED ROSE—BEAUTY OF GLAZENWOOD.—"A Rose of golden-yellow, striped and flaked with scarlet or vermilion, sounds like a dream or a fairy tale. It is nevertheless a reality." H. CURTIS, in the *Garden*. Full particulars free by post.
LEWIS WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

LETTY COLES.—This Rose is now being sent out; plates may be had for eighteen stamps. The finest Tea Rose sent out for years.
JOHN KEYNES, Nurseryman, Salisbury.

CENTAUREA CANDIDISSIMA, in single pots, nice plants, 20s. per 100, package included. Not less than 25 at the above price. Half to quarter specimens.
KALOSANTHES COCCINEA, well set for flower, 3s. 6d., 5s., to 7s. 6d. each.
JOHN HOUSE, Eastgate Nurseries, Peterborough.

Cinerarias.

MESSRS. JOHN STANDISH AND CO.'S strain of Cinerarias is now acknowledged to be the finest in the Kingdom. Carefully saved Seed may now be had post-free at 1s. 6d. and 2s. 6d. per packet. Wholesale price to the Trade on application.
Royal Nurseries, Ascot, Berks.

Plant Catalogue.

CHARLES TURNER'S DESCRIPTIVE LIST of PLANTS for the Season, including several new varieties now offered for the first time, is ready, and may be had on application.
The Royal Nurseries, Slough.

Notice.—Seeds, Seeds.

WM. CUTBUSH AND SON can confidently recommend their stock of Garden and other Seeds. CATALOGUES now ready, which contain every requisite, at fair prices, post-free on application.
Highgate, London, N.

THOS. S. WARE has pleasure in announcing to the Horticultural Public that he has now in bloom many interesting species and varieties of HARDY PERENNIALS, MISCELLANEOUS BULBS, and Florist Flowers, including Pansies, Pyrethrums, early-flowering Lilies, &c.
The favour of a visit from admirers of the above is solicited.
Hale Farm Nurseries, Tottenham, London.

DOWNIE AND LAIRD beg to intimate that their fine stocks of Show and Fancy PANSIES, also VIOLAS, are now in fine flower at their Pinkhill Nurseries. Many of their Seedlings this season are of surpassing beauty. Inspection invited. Edinburgh, May 24, 1876.

Pelargoniums, Pelargoniums.

JAMES HOLDER'S unrivalled Collection—strong healthy Plants, Show, French, and Fancy varieties, at 35s. per 100, cash, hamper and packing included. Extra strong plants, in 48's and 32's, at 9s. and 12s. per dozen, basket and packing extra.
Crown Nursery, Reading.

TRICOLOR GERANIUMS.—20,000 Mrs. Pollock and Sophia Dumaresque, at 3s. 6d. per doz., package included, or post-free at same price. The Trade supplied. ALFRED FRYER, The Nurseries, Chatteris, Cambridgeshire.

Calceolaria, Cineraria, and Primula.

F. AND A. SMITH can supply Seed of the above, saved from their well-known superb strain, in 1s., 2s. 6d., and 5s. packets. Terms to the Trade upon application. The Nurseries, West Dulwich, S.E.

Verbenas, Verbenas, Verbenas.

WILLIAM BADMAN offers good healthy Plants—Purple, White, Scarlet, Rose, and Crimson—best sorts, from single pots, 12s. per 100. Well rooted cuttings, 6s. per 100, 50s. per 1000, package included. Terms cash.
Cemetery Nursery, Gravesend, S.E.

PRIMULA FIMBRIATA flore plena.—Double white and various other shades of colour, a few hundreds of good plants in 48's are offered cheap at per 100, to the Trade. J. JACKSON, Nursery, Kidderminster.

JOHN WATERER AND SON'S Exhibition of RHODODENDRONS is now on view at The Gardens, Manley Hall, Manchester.

Walcheren Broccoli.

WANTED, from 10,000 to 30,000 strong Plants.
R. BATH, Crayford.

SUTTON'S GRASS SEEDS for PASTURES, 22s. 6d. to 36s. per Acre. Carriage free.

SUTTON'S GRASS SEEDS for PARK GROUNDS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for GARDEN LAWNS, 20s. per Bushel. Carriage free.

SUTTON'S GRASS SEEDS for CROQUET GROUNDS, 20s. per Bushel. Carriage free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

FOR SALE, a nice sample of SCARLET RUNNERS. Can be seen and prices obtained at L. C. OLIFFERS', 47, Crispin Street, Spitalfields, E., between 9 and 5 o'Clock.

JEAN VERSCHAFFELT'S Nursery, 134, Faubourg de Bruxelles, Ghent, Belgium. CATALOGUES to be had free from his Agents, Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

A. E. BARNAART AND CO., Vogelenzang, Haarlem, Holland. WHOLESALE CATALOGUE of Hyacinths and other Dutch Bulbs may be had free from Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Bedding Plants, Bedding Plants.

JAMES HOLDER can supply Alternantheras, Ageratums, Alonsoas, Campanulas, Coleus, Centaureas, Cineraria maritima, Chrysanthemums, Delphiniums, Geraniums of sorts, Echeverias, Iresines, Kenigia, Lobelias, Petunias, Senecios, &c., eight dozen for 20s., or four dozen for 10s. 6d., basket included.
Crown Nursery, Reading.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours; AURICULAS, both single and Double; with every sort of Early Spring Flowers. LIST on application.
Mr. WEBB, Calcot, Reading.

To the Trade.—White Mustard and Rape Seed

H. AND F. SHARPE have fine samples of AGRICULTURAL WHITE MUSTARD and RAPE SEED for Sowing. Samples and prices on application.
Seed Growing Establishment, Wisbech.

To Market Gardeners and Greengrocers.

FOR SALE, EARLY PEAS, Growing or Picked. Four to 5 Acres, a good crop. Apply to Mr. SCOTT, Estate Office, Stopham, Pulborough.

Mangel and Swede.

JOHN SHARPE can furnish, on application, his quotations for the choicest Stocks of the above, selected and grown by himself.
Bardney Manor, Lincoln.

ROBINSON'S CHAMPION DRUMHEAD CABBAGE.—Extra good autumn-sown plants, price 3s. 6d. per 1000.
JAS. IVERY AND SON, Dorking Nursery, Surrey.

To the Trade.

ASPARAGUS, 1-yr., 2-yr., and 3-yr. TROPÆOLUM CANARIENSE.
JAMES BIRD, American Nurseries, Downham.

Grape Vines for Present Planting.

THOMAS RIVERS AND SON are now prepared to supply strong growing Canes of all the best varieties. These will make fine rods during the summer, thus saving a whole season.
The Nurseries, Sawbridgeworth, Herts.

Fruiting and Planting Vines.

THE COWAN PATENTS' COMPANY (late Meredith) have still on hand a good selection of the above. Catalogues and prices on application. They can also offer good Fruiting and Succession PINES.
The Vineyard, Garston, near Liverpool.

ORCHARD-HOUSE TREES, Fruiting in Pots.—Peaches, Nectarines, Plums, Pears, Apples, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDENS and ESTATE AUCTIONEERS and VALUERS, 98, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Hothouses, Hot-water Apparatus, &c.

HALLIDAY AND CO., HOTHOUSE BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates and Plans free. Best Construction! Best Materials! Best Workmanship! Catalogues free.
Offices: 22, Barton Arcade, MANCHESTER.

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Sydenham.—Short Notice of Important Sale.

Important SALE of STOVE, GREENHOUSE, and BEDDING PLANTS, to make room for some new introductions.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Carter, Dunnett & Beale to SELL by AUCTION, without reserve, on the Premises, the Crystal Palace Nurseries, Perry Hill, Sydenham, ten minutes' walk from the Forest Hill Station, on THURSDAY, June 22, at 11 for 12 o'Clock precisely, a large quantity of STOVE PLANTS of remarkably clean and healthy growth (amongst which are some handsome specimens), comprising 100 Dracæna Guilfoylei, fifty D. porphyrophylla, several D. Fraseri, and other favourite kinds; beautiful collections of Marantas, Caladiums, Crotons, and Achimenes, Pandanus Veitchii, 250 Anthurium Scherzerianum, grande and regale, fine Stephanotis, Ficus, Nepenthes, Gardenias, Begonias, Epiphyllums, 800 Latania borbonica and other Palms; a quantity of Exotic Ferns; likewise an unusually rich assortment of 30,000 BEDDING PLANTS, including 7000 of the choicest Tricolor, Silver, Bronze, and Zonal Geraniums, 5000 Calceolarias, 2000 Alternantheras, 1500 Fuchsias, and an immense quantity of other useful stock for turning out; 100 of the beautiful new Coleus Duchess of Edinburgh, together with 10 acres of standing meadow grass of luxuriant growth and of excellent quality.

May be viewed prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Kelvedon, Essex.

Important Unreserved SALE of the celebrated Marks Hall Collection of STOVE and GREENHOUSE PLANTS, containing many matchless specimens, which for many years have obtained First-class Prizes at all the leading County Shows; also many magnificent examples of choice Palms and Tree Ferns, a considerable number of beautiful pyramid Azalea indica, Cape Heaths, and New Holland Plants, Fruiting and Succession Pines; a Force Pump with Hose.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mrs. Honywood to SELL the above by AUCTION, without reserve, on the Premises, Marks Hall, Kelvedon, Essex on FRIDAY, June 23, at 11 for 12 o'Clock precisely.

May be viewed the day prior and morning of Sale on the presentation of a Catalogue, which may be obtained (price 1s. each, returnable to purchasers), of Mr. ELLIOTT, on the Premises; and of the Auctioneers and Estate Agents, 98, Gracechurch Street, E.C., and Leytonstone, E.

Northampton Park Nursery, Douglas Road, North

Islington, opposite Canonbury Railway Station, North London Railway. By order of the Executors.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises as above, on MONDAY and TUESDAY, June 26 and 27, at 11 for 12 o'Clock precisely each day, by order of the Executors of the late Mr. John Boff, in consequence of the Land being required by the North London Railway Company, about 30,000 BEDDING PLANTS, consisting of the usual Miscellaneous Assortment. Also the Valuable Collection of Choice ORCHIDS, consisting of Phalænopsis, Vandas, Aerides, Saccolabiums, Odontoglossums, Dendrobiums, Cypripediums, Cattleyas, Lælias, Oncidiums, Lycastes, Pleiones (large specimens), &c.

May be viewed the Saturday prior to the Sale. Catalogues had on the Premises, and of the Auctioneers and Valuers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Established Orchids and Ferns,

The property of the late H. Smithes, Esq., of Sydenham

MR. J. C. STEVENS has received instructions to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY and WEDNESDAY, June 20 and 21, at half-past 12 o'Clock precisely each day, the choice COLLECTION of ORCHIDS, formed by the late H. Smithes, Esq., at Laurie Park, Sydenham, consisting of all the leading varieties of Cattleyas, Vandas, Odontoglossums, Phalænopsis, Oncidiums, &c.; also a small collection of FERNS.

May be viewed the morning of Sale, and Catalogues had.

Important Sale of Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, July 6, at half-past 12 o'Clock precisely, a COLLECTION of ESTABLISHED ORCHIDS, containing many fine plants in choice varieties from the well-known collection of J. Day, Esq., of Tottenham, and Sold in consequence of his Greenhouses being overcrowded.

On view the morning of Sale, and Catalogues had.

TO BE SOLD, about 16,000 feet of GLASS, specially erected for Grape Growing for Market purposes, built regardless of cost and upon the most approved principles. The heating is most efficient, and the working details throughout perfect. The Houses are stocked with young Vines in grand condition and just coming into fruit.

TO BE LET, upon long Lease, about 4 acres of rich GROUND which is attached, and within 4 miles of Covent Garden, situate south. Apply to

Mr. RANSLEY TANTON, Horticultural Valuer: Office, 173, High Street, Borough, London, S.E.

TO BE SOLD, by PRIVATE CONTRACT, the GOLDEN CROSS NURSERIES, with extensive Glasshouses, Dwelling-house, &c., situate near Stroud, Gloucestershire. Apply to

RESTALL AND FORD, Auctioneers, Stroud.

Opening for Jobbing Gardener

TO BE LET, in a healthy village of 900 population, near Market Harborough, a COTTAGE and Small NURSERY GROUND, with Vinery and small Forcing House. Can be entered upon at Lady-day, or sooner. Plenty of work to be had in private gardens round for an able man.

Mr. BONSOR, Clipston, Northampton.

Garden and Farm Cottage at Twickenham.

TO BE LET (Unfurnished) on a 7 years' Lease, a Large and Elegant COTTAGE, in Sandycombe Lane, named Nightingale Cottage, containing 8 Rooms, besides Attics and Outhouses, just expensively repaired and decorated, and fitted up with Stoves, Ovens, a Range, Copper, Patent Mangle, Pump and Soft Water, &c., standing in an extensive and well-stocked Garden, bordered by a large Fenced Meadow, covering in all about 3 acres. Rent £75

Apply by letter to HENRY G. BOHN, Esq., 18, Henrietta Street, Covent Garden, or North End House, Twickenham.

The Fruit and Vegetables would, in practical hands, more than realise the rent.

THE WISBECH GREAT ANNUAL ROSE SHOW and HORTICULTURAL EXHIBITION will be held in the Grounds of Colville House, on THURSDAY, June 29. All Exhibitors compete without entrance fees. Schedules of Prizes and all information on application to

CHARLES PARKER, Hon. Sec.

Wisbech.

RICHMOND HORTICULTURAL SOCIETY.

President: H.S.H. the Duke of TECK, G.C.B.

Under the Royal and Distinguished Patronage of—

H.R.H. the Duchess of CAMBRIDGE,

H.R.H. the Princess MARY OF CAMBRIDGE, Duchess of TECK.

H.R.H. the Duc D'AUMALE, &c.

The SECOND EXHIBITION of PLANTS, FLOWERS, FRUIT, VEGETABLES, and DINNER-TABLE DECORATIONS, will be held in the Old Deer Park, Richmond Green (by the kind permission of Mr. Fuller), on THURSDAY, June 29, 1876. Schedules may be obtained of the Hon. Secretary.

ALBERT CHANCELLOR, Hon. Sec.

1, King Street, Richmond, S.W.

HUNTINGDONSHIRE HORTICULTURAL SOCIETY.—The SUMMER SHOW will be held on WEDNESDAY, July 5, in the grounds of Castle Hill House, Huntingdon. SILVER CUPS for Collections of GREENHOUSE PLANTS, for 24 ROSES (Amateurs and Nurserymen). For Schedules of Prizes, &c., apply to

J. OLDMAN, Esq., Hon. Sec., Huntingdon.

NOTTINGHAM and MIDLAND COUNTIES GRAND ROSE SHOW and HORTICULTURAL EXHIBITION (Open to all England) will be held at the Arboretum, Nottingham, on THURSDAY, FRIDAY, SATURDAY, and MONDAY, July 6, 7, 8, and 10. The Mayor of Nottingham President. Prize List amounting to upwards of £600. Space will be allotted for the Exhibition of Horticultural Implements and Garden Furniture. Medals and Certificates of Merit awarded.

Schedules are now ready, and may with particulars be obtained on application to

ALFRED KIRK.

Municipal Offices, Nottingham.

SANDOWN PARK CLUB. GRAND FLOWER and FRUIT SHOW.

A GRAND FLOWER and FRUIT SHOW, under distinguished Patronage, will be held in Sandown Park, Esher, Surrey, on FRIDAY and SATURDAY, July 7 and 8, when upwards of £350 will be given in Prizes. Schedules are now ready, and may be had on application to

JOHN WILLS, Royal Exotic Nursery, Onslow Crescent, South Kensington, S.W.

J. WHITTAKER BUSHE, General Manager.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION, for the relief of decayed Farmers, their Widows and Orphans.

Patron—HER MAJESTY THE QUEEN.

President—His Grace the Duke of RICHMOND AND GORDON.

Allowances to Pensioners:—

Married	£40 per annum.
Male	26 ,,
Widows and unmarried Orphan Daughters	20 ,,

Every information to be had of the SECRETARY, by whom Subscriptions and Donations will be thankfully received.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.—The ANNUAL GENERAL MEETING will be held at Willis's Room, St. James's, on WEDNESDAY, June 21, at 11 o'Clock precisely; and the ELECTION of PENSIONERS will take place on the same day at 11.30 o'Clock.

All Subscriptions shall be deemed payable on January 1 in each year; and no Contributor shall vote in respect of an Annual Subscription while the same is in arrear.

Offices of the Institution—

No. 26, Charles Street, St. James's, London, S.W.

Primulas, Primulas, Primulas.

WILLIAMS' superb strain, 1s. 6d. per dozen, 10s. per 100; package and carriage free. CINERARIAS, choicest assortment, same size and price. The above are quite equal to those I have sent out in previous years. Cash with order.

JOHN STEVENS, The Nurseries, Coventry.

A. M. C. JONGKINDT CONINCK begs to offer:—

CROCUSES, DUC VAN THOLL TULIPS, LILIES, &c., at the lowest prices.

CRYPTOMERIA JAPONICA, strong 1-yr. seedlings, 20s. per 1000.

Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

Cranston's Nurseries (Established 1785).

TEA-SCENTED ROSES—20,000 strong, well hardened plants, in 5½-inch pots.

April and May are the best months for Bedding or Planting-out the Tea-scented, China, Noisette, and all Roses on their own roots. Selections, left to us, from 12s. to 15s. per dozen.

Descriptive Priced LISTS on application to

CRANSTON AND MAYOS, Hereford.

Ferns.

W. AND J. BIRKENHEAD devote almost the whole of their attention to the Cultivation of BRITISH and EXOTIC FERNS. Their Collection consisting of many thousands, they are enabled to offer them by the dozen or hundred, at most reasonable Prices. CATALOGUES sent on application.

Fern Nursery, Sale, near Manchester.

ROBSON TESTIMONIAL.

Mr. JOHN ROBSON being about to leave Linton Park through ill health, it is thought by some of his Friends to be a good opportunity for presenting him with some token of the esteem in which he is held in this county.

Subscriptions will be received by

THOS. PHILPOTT, Linton.	P. GODDARD, Hunton Court.
W. SKINNER, Boughton.	C. WILLIAMS, Cranbrook.
S. SKINNER, Leeds.	W. POTTEN, Sissinghurst.
E. SKINNER, Loddington.	W. BRADLEY, H. A. Brassey,
G. ALLUREE, Loose	J. HADLOW, Chart. [Esq.
BUNYARD & SON, Maidstone.	T. SKINNER, Sir E. Fulmer.
T. FROST, Maidstone.	T. RECORD, Vinters Park.

E. SKINNER, Hon. Sec., Loddington Farm, Maidstone.

HOWCROFT AND WATKINS (late Charlwood & Cummins), SEEDSMEN, Covent Garden, London, W.C. (established more than half a century), will be glad to forward on application post-free their GENERAL LIST of SEEDS, which includes their special stocks of

WASHINGTON, IMPROVED No. 1 and COMPETITOR PEAS.
NEW COVENT GARDEN PROLIFIC RUNNERS.
TRUE EARLY RAINHAM CABBAGE.
SUPERB LATE WHITE BROCCOLI.
WYKEHAM COS LETTUCE.
COVENT GARDEN and WESTBURY SWEDES, &c.

J. LINDEN, Exotic Nurseries, Ghent, Belgium.

The CAMELLIAS and AZALEAS grown in this Establishment will be unusually fine this year. It is respectfully requested that orders be sent in at once. The plants will commence being sent out in August.

CAMELLIAS, admirably grown and well set with buds, 130s., 170s. and 260s. per 100.

AZALEAS, strong, well-furnished plants, full of buds, 120s., 160s and 200s. per 100.

Packing and carriage to London included.

SPECIMEN CONIFERS, EVERGREENS, FRUIT TREES, STANDARD ROSES, &c. (30 acres).—Gentlemen who intend planting in the autumn are invited to the Eltham Nurseries during the summer months; they can then have an opportunity of selecting from the various foliages, also from many thousands of Standard Roses. The orders can be executed when required.

JAMES W. TODMAN, Eltham Nurseries, S.E., 1 mile from Eltham Station, Loop Line, 2 miles from Blackheath, North Kent Line.

Bedding Plants.—Surplus Stock.

F. AND A. SMITH offer the undernoted, in extra strong plants, prices on application:—Alternanthera amœna, magnifica and paronychioides; Calceolaria anrea floribunda; Centaurea candidissima, Cuphea platycentra, Dahlias; Geraniums, Crystal Palace Gem, Silver variegated, Vesuvius, Bronze, and Tricolor; Heliotropium, Lantana, Lobelia Blue Stone and Turquoise; Mesembryanthemum, Nierembergia gracilis, Pentstemons, Petunias, Phloxes, Pyrethrum aureum, Tropæolums, Verbenas, &c.

The Nurseries, West Dulwich, S.E.

Carriage and Package Free

to any Railway Station in Great Britain.

TWELVE BEST NEW FRENCH ROSES for 1876 on receipt of Post-office Order for 27s. 6d.

TWELVE BEST TEA and NOISETTE ROSES on receipt of Post-office Order for 21s.; 24 for 40s.

The Plants are all exceedingly healthy and vigorous.

EWING AND COMPANY, Eaton, Norwich.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz., Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000; and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.

Wonersh Nursery, Guildford, Surrey.

New Zealand Native Shrub and Tree Seed.

GEORGE PURDIE AND CO. have always on hand an assortment of the above, carefully selected. Three and Five Guinea Collections, including the leading AUSTRALIAN GUMS and WATTLES, post-free to all parts of the World. All Orders must be accompanied by a remittance.

GEORGE PURDIE AND CO., Seed Merchants, &c., Timaru, Canterbury, New Zealand.

LUCOMBE, PINCE AND CO.'S new CLEMATIS DEVONIENSIS. This is a most beautiful and distinct variety, obtained by crossing C. Jackmanni and C. lanuginosa. The flower is the brightest and most delicate azure, unusually large and well formed, robust in habit, perfectly hardy, and a very free bloomer. Will be sent out the first week in July. Price 21s. each. Terms to the Trade on application. Exeter Nursery, Exeter.

English-raised Roses.

CHARLES TURNER is now prepared to execute orders for the fine new varieties MRS. BAKER and OXONIAN, strong plants, at 7s. 6d. each. For Descriptions and Opinions of the Press see new Catalogue, which may be had on application. The four varieties, JOHN STUART MILL, MISS HASSARD, REV. J. B. M. CAMM, and ROYAL STANDARD, sent out last Season by CHARLES TURNER, and which have been greatly admired at the Metropolitan Exhibitions this spring, are also strongly recommended.

The Royal Nurseries, Slough.

DUTCH BULBS, &c.—Before ordering Hyacinths, Tulips, Crocus, &c., for the ensuing season, Nurserymen and the Trade generally should send for P. Van Waveren, Jun., & Co.'s (Hillegom, Haarlem, Holland) WHOLESALE CATALOGUE. It may be had free on application to

Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Ornamental Plants, Roses, Climbers, &c.

WOOD AND INGRAM beg to offer:—

		s.	d.
ROSES, in pots, Maréchal Niel	each	1	6
GLOIRE DE DIJON and others	per doz.	15	0
VALLOTA PURPUREA	,,	9	0
CATALPA SYRINGÆFOLIA AUREA	each	2	6
ASPLENIUM MARINUM	per doz.	9	0
ADIANTUM CAPILLUS-VENERIS	,,	8	0
SELAGINELLA DENTICULATA	,,	6	0
LILIUM AURATUM each 1s. 6d. to		5	0
COBÆA SCANDENS	per doz.	8	0
,, VARIEGATA	each	1	6
LOPHOSPERMUM SCANDENS	per doz.	6	0
MAURANDYAS, sorts	,,	6	0
PAMPAS-GRASS, in thumb-pots	,,	3	0
	per 100	20	0
GLOXINIAS, in bloom	per doz.	12	0
NERTERA DEPRESSA	,,	6	0
CALAMPELUS SCABER	,,	6	0
HERBACEOUS PHLOX, to name	per doz. 6s. to	9	
CLEMATIS Miss Bateman, Albert Victor, lanuginosa candida, J. G. Veitch, patens candida fl.-pl.	per doz.	18	0

The Nurseries, Huntingdon.

Dutch Bulbs.

C. G. VAN TUBERGEN, JUN., FLORIST, &c., Haarlem, Holland, begs to call the attention of the Trade to his NEW CATALOGUE of Hyacinths, Tulips, &c., which may be had free on application to

Messrs. R. SILBERRAD AND SON, 5, Harp Lane, Great Tower Street, London, E.C.

Bedding and other Plants (Present Prices).

Well-established, from Single Pots.

WOOD AND INGRAM beg to offer :—

GERANIUMS, Golden Superb, 18s. per 100; Albion Chiffs, 18s. per 100; Golden Tricolor, fine varieties, W. & I.'s selection, 3s. 6d. per dozen; Crystal Palace Gem, 10s. per 100.

,, Master Christine, Mangles' Pink, Stella, and others, 16s. per 100.

PYRETHRUM, Golden Feather (out of pots), 4s. per 100.

PERILLA NANKINENSIS, 6s per 100.

AMARANTHUS MELANCHOLICUS RUBER, 6s. per 100.

KONIGA (Alyssum) VARIEGATA, 8s. per 100.

CINERARIA MARITIMA, 8s. per 100.

SEMPERVIVUM CALIFORNICUM, 8s. per 100.

IRESINE HERBSTII, 8s. per 100.

PETUNIA, Single White, 8s. per 100.

AGERATUM, Imperial Dwarf Blue and White, 10s. per 100.

GNAPHALIUM LANATUM and VARIEGATUM, 10s. per 100.

SEDUM GLAUCUM, 10s. per 100.

LOBELIA, best sorts, 10 name, from cuttings, 10s. per 100.

COLEUS VERSCHAFFELTII and SPLENDENS, 10s. per 100.

MESEMBRYANTHEMUM CORDIFOLIUM VARIEGATUM, 10s. per 100.

FUCHSIA RICCARTONI, 14s. per 100.

PETUNIA, Double, to name, 16s. per 100.

CONVOLVULUS MAURITANICUS, 12s. per 100.

ŒNOTHERA MACROCARPA, 3s. per dozen.

GENTIANA ACAULIS (patches), 20s. per 100.

The Nurseries, Huntingdon.

E. G. HENDERSON AND SON.

SEEDS—EXTRA QUALITY.

PRIMULA SINENSIS FIMBRIATA, 2s. 6d. and 5s. per packet.

,, FLORE PLENA, 2s. 6d and 5s. per packet.

CINERARIA and CALCEOLARIA, 2s. 6d. and 5s. per packet.

CYCLAMEN PERSICUM, choice quality, 1s. and 2s. 6d. per packet.

,, ,, double-flowered, 2s. 6d. and 5s. per packet.

Wellington Nursery, St. John's Wood, N.W.

NEW and SELECT PLANTS, Post-free.—The following selections are very select and superb in each class; the Plants are well established, from single pots, and so packed as to ensure safe transit by post :—

FUCHSIAS, 12 new varieties of 1875, selected from the best, 4s.

,, 12 select varieties of 1874, very fine, 3s.

,, 12 varieties, best selected, of previous years, 2s.

HELIOTROPIUMS, 12 new and select varieties, fragrant, 2s. 6d.

GERANIUMS, Double, 12 new and select varieties, including George Sand, the largest and best double white, 6s.

,, 12 select varieties of Zonals, 3s.

,, 12 new varieties of Zonals of 1874, fine, 4s.

,, 12 new varieties of Zonals, selected from Pearson's, Bull's, Postans', Denny's, and Smith's, new varieties of 1875, very superb, 9s.

,, Golden Bicolor, 12 select varieties, fine, 4s.

,, Double, 12 new varieties of 1875, including Emily Laxton and the new striped variety, 9s.

VERBENAS, 12 very select varieties, show, fine, 2s.

LANTANAS, 12 very select varieties, free blooming, 2s 6d.

PHLOXES, 12 superb varieties, hardy perennial, fine, 3s.

PENTSTEMONS, 12 very select varieties, extra fine, 4s.

LOBELIAS, 12 fine dwarf, in six fine varieties, 2s.

MIMULUS, Henderson's new large-flowered, 12 superb varieties, 6s.

FERNS, Greenhouse, 12 select varieties, very fine, 6s.

GREENHOUSE PLANTS, 12 fine varieties, very select, 6s.

STOVE PLANTS, 12 select varieties, extra fine, 9s.

TREE CARNATIONS, 12 fine varieties, winter blooming, 6s.

VICTORIA DAISIES, new, 12 superb varieties of 1873, fine, 6s.

,, 6 first varieties, 2s.

PELARGONIUMS, 6 new varieties, perpetual blooming, 4s.

,, Zonal, 6 fine varieties, new, striped, fine, 4s.

HERBACEOUS LOBELIA, 6 select varieties, tall, hardy, 3s.

HERBACEOUS MIMULUS, 6 select varieties, tall, hardy, 2s.

POMPON and JAPANESE CHRYSANTHEMUMS, 12 select varieties, large flowered, 2s. 6d.

COLEUS, 12 select new varieties of 1875, fine, 3s.

,, 12 very select varieties, older, superb, 2s.

PELARGONIUMS, Cape, 12 fine varieties, sweet-scented, 4s.

IVY-LEAF GERANIUMS, 12 fine varieties, including the new double variety, Konig Albert, 5s.

BOUVARDIAS, 12 fine varieties, winter blooming, 6s.

SEDUMS, Rock Plants, 12 select varieties, hardy, 2s 6d.

SAXIFRAGES, Rock Plants, 12 select varieties, hardy, 2s. 6d.

PELARGONIUMS, Fancy and French, 12 select varieties, show, 6s.

AGERATUM, Duchess of Edinburgh, the best dwarf blue bedder yet produced, 12 new, 3s.

All the above sent post-free, in good plants, from

B. W. KNIGHT, Florist, Battle, Sussex.

HENRY MAY begs to offer the undernamed new PELARGONIUMS, selected from many thousand seedlings, and guarantees them of sterling merit; 10s. 6d. each, the set for 42s—ready, in strong blooming plants—viz. :—

YORKSHIREMAN (May).—A brilliant variety, of robust habit, and most abundant bloomer; white centre, orange-rose lower petals, black top petals margined with carmine.

JOHN WILSON (May).—Very fine form, lower petals rosy-purple with maroon blotch; white centre, top petals maroon with rose edge.

RISING SUN (May).—Very bright and distinct, brilliant orange lower petals, maroon top petals with scarlet margin, large white centre.

ATTRACTIVE (May).—Rose lower petals, upper petals bright rose, with distinct maroon spot on each petal; fine habit and free bloomer, extra.

LIVELY (May).—Light pink lower petals, top petals rose and maroon, pencilled like Hermit, but much superior, free and attractive.

HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

THE

NEW PLANT and BULB COMPANY

BEG TO OFFER, IN FINE HEALTHY PLANTS,

DARLINGTONIA CALIFORNICA—The extremely rare and beautiful Pitcher Plant from California. Plants with five to seven pitchers.

PELLÆA ORNITHOPUS var. BRACHYPTRUM—An extremely rare and very beautiful Fern from California.

CHEILANTHES GRACILLIMA—A very elegant addition to this charming class of Ferns. Also from California.

DENDROBIUM WARDIANUM—The finest of all Dendrobes: fine plants recently imported and breaking freely.

ODONTOGLOSSUM CRISPUM (ALEXANDRÆ)—Fine plants recently imported and breaking freely.

The above are all at extremely low prices.

For particulars see SPECIAL LIST (No. 27), free on application.

LION WALK, COLCHESTER

DANIELS BROS.'

CHOICE SEEDS OF

FLORISTS' FLOWERS.

We have much pleasure in offering the following Choice Strains of Florists' Flower Seeds, which will be found of a very superior class :—

	Per packet—s.	d.
AURICULA, choicest mixed Alpine	1	0
CALCEOLARIA HYBRIDA, our own splendid strain, 1s. 6d. and	2	6
CARNATION, from stage flowers	2	6
,, Perpetual or Tree, choicest	2	6
CINERARIA HYBRIDA, very choice 1s. and	2	6
COLEUS, from the newest varieties	1	0
GLOXINIA, very choice mixed	1	0
PANSY, English, very choice	1	0
,, Fancy	1	0
,, King of the Blues	1	0
PENTSTEMON, from named flowers	1	0
PHLOX, choicest Perennial	1	0
PICOTEE, from stage flowers	2	6
POLYANTHUS, Gold-laced, very fine	1	0
PRIMULA SINENSIS, choicest fringed red	1	6
,, ,, ,, ,, white	1	6
,, ,, ,, ,, mixed	2	0
SWEET WILLIAM, Auricula-eyed, splendid, mixed	1	0

Mr. D. T. FISH, *writing of our strains of Calceolaria and Cineraria says* :—

"A word concerning your Calceolarias. Having seen some of the finest strains at the different shows, I have pleasure in stating that yours are equal to the best in size, colour, and variety of flowers, and their habit most compact; in fact, more uniformly dwarf than any I have seen. Your Cinerarias this season were also a most excellent strain—size, substance, and colour of flowers being all that could be desired, with a very dwarf habit."

From Mr. J. HANNIBALL, *Kingswood, Bristol.*

"We have a splendid show of Pansies and Sweet Williams, and they are the admiration of all who see them. Your Polyanthus also was first-class."

A fine assortment of choice Bedding Plants, &c., now on offer. Catalogues free on application.

DANIELS BROS.,

Seed Growers and Nurserymen,

ROYAL NORFOLK SEED ESTABLISHMENT,

NORWICH.

FRANCIS & ARTHUR DICKSON & SONS.

106 Eastgate St. & The Upton Nurseries CHESTER.

Farm Seeds Extra Select

& of Unsurpassed Quality

Carriage Paid.

Illustrated Catalogue, Free.

Special Offer.—Vesuvius, Crystal Palace Gem.

WILLIAM BADMAN offers good plants of VESUVIUS from single pots, 10s. per 100, 85s. per 1000. CRYSTAL PALACE GEM, 15s. per 100. MADAME VAUCHER, finest White Pelargonium, 10s. per 100. Package included. Terms cash.

Cemetery Nursery, Gravesend, S.E.

NEW H.P. ROSE, TRIOMPHE DE FRANCE, strong plants, with from twelve to twenty joints, 2s. 6d. each.

Raiser's description :—"Beautiful bright carmine, of extra large size, very full, opening well, perfect form, a good and free bloomer, growth rather vigorous; a most distinct and grand Rose. This splendid variety has been exhibited as a seedling, received its name from the judges, who awarded it a gold medal £8 in value."

TEA ROSES.—MARIE GUILLOT, the best Exhibition White and the finest Tea Rose known, 2s. each.

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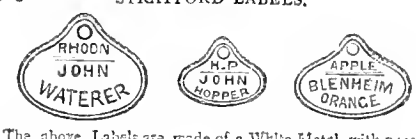

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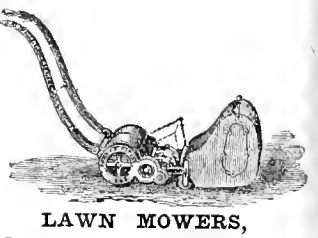

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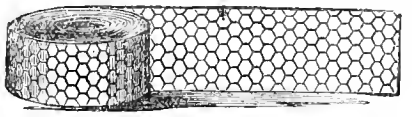

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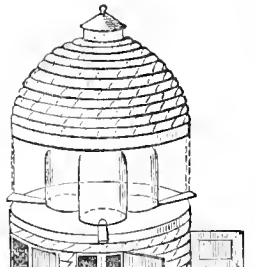

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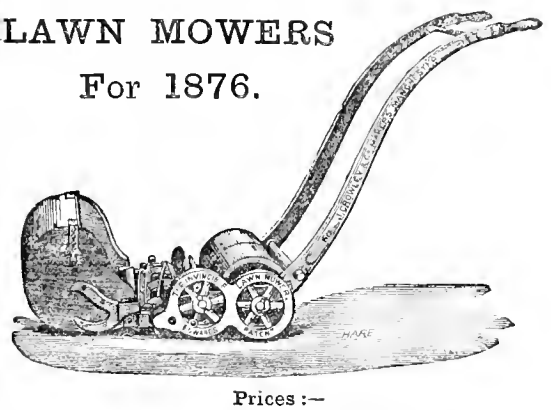

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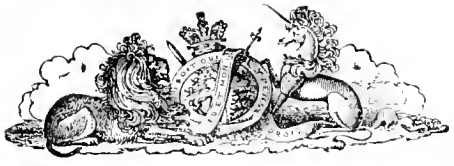

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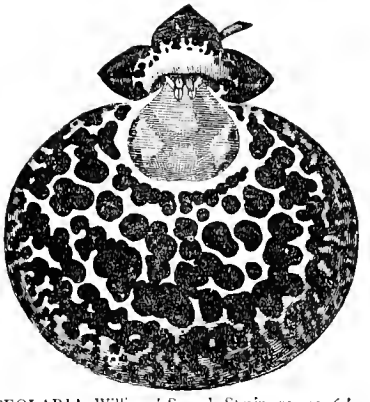

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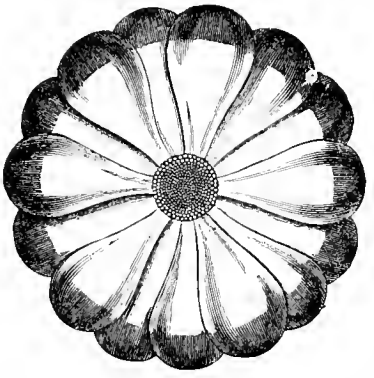

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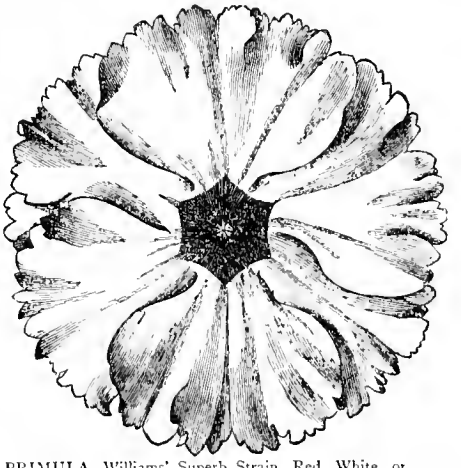

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SATURDAY, JUNE 17, 1876.

THE RHODODENDRON.

(*Concluded from p. 772*)

CONCURRENTLY with the acquisition of the American Rhododendrons, there were discovered, chiefly in company with them, many species of the beautiful genera Ledum, Andromeda, Kalmia, and Gaultheria, and of the section of Rhododendron which, being originally distinguished as a genus, under the name of Azalea, still possesses that name in everyday converse. All were conveyed to England, where they immediately became popular, and gave quite a new complexion to the flower garden. For a very long period it was customary to grow these various shrubs in borders by themselves : they demanded similar soil, and bloomed mostly at the same season of the year. Hence they acquired, very naturally, the collective name of American plants,—a term still in use, but in 1876 applying so badly, as will presently be seen, that it conveys quite a wrong idea, and would better be dismissed.

Discoveries even more splendid were now being made in the East. In 1796, during a tour in northern India, Captain Hardwicke found upon the mountains which constitute the Sewalic chain—a tract separating the plains of Hindostan from the Himalayas, between 75° and 85° East longitude—a Rhododendron excelling anything that had ever been imagined, the flowers of a most gorgeous crimson, and which, from its magnitude and lofty stature—20 to 30 feet or more, was shortly afterwards named arboreum. Drawings of it were published in the botanical books of the day, but it was only just before the date of Waterloo that the plant itself became a living inmate of our island, seeds having been sent by Dr. Wallich to the Liverpool Botanic Garden, then under the care of the late celebrated Mr. Shepherd, and located in what is now the centre of the town. This glorious plant, the Rhododendron arboreum, like most of its genus, is an evergreen. On its native mountains it is generally associated with forests of Oak, growing in turfy peat, on a stony bed, and covering vast tracts of country. The large, long, thick, and leathery leaves are underneath of a silvery white. The dazzling flowers grow in close and nearly globular clusters, terminating the boughs, and appear in March and April. In the centre of the great conservatory at South Kensington there is a plant of this stately species, probably one of the very first raised in England, now upwards of 20 feet in height, and usually loaded every spring with splendid trusses of the refulgent bloom, the colour of which is that of arterial blood. A white variety was discovered in Nepal in 1803, at an elevation of 10,000 feet above the sea level, and subsequently another with rose-coloured flowers. In these the leaves are less silvery underneath, but the stature and dimensions exceed those of the red-flowered form.

Coming from a mountain-height so considerable it was hoped that the arboreum would stand the English winter out-of-doors, and thus realise what had now become a fervent desire—a hardy crimson Rhododendron. But after three or four years' trial, it became only too evident that this glorious plant could not exist permanently except with the protection of glass. The introduction of it marked an era, neverthe-

less, in the annals, not only of the Rhododendron, but of English floriculture—the rearing of this splendid production of Nature was the "herald-voice" of all the charms that pertain to the Rhododendron as now exhibited. What could not be accomplished by acclimatisation, was achieved by the art of hybridising.

Adopting the capital hint supplied by the little wizards of the hive, in the early part of the present century, observant gardeners commenced the practice of crossing plants artificially. Under the influence of the Royal Horticultural Society (founded in 1804) the idea became a recognised part of advanced floriculture, and now-a-days every clever and experimentalising gardener tries his hand at this curious art, often with the best results. Very pleasant is it to observe, once again, a simple natural principle, when manipulated under the governing skill of human intelligence, not only preserving its efficiency, but becoming incredibly productive—far more so than without the aid of man could ever have been the case. So true is it that while flowers and fruits were made for man, he, in turn, was made for the flowers and fruits. People who are not in the secret suppose, and very excusably, that plants are under all circumstances the spontaneous productions of Nature, improved, perhaps, by culture and training, but still, in their integrity, purely Nature-born. That this is true of the great mass of the vegetation of the world is undoubted; but it is not true universally, and is becoming less and less true every day in regard to choice garden and orchard plants. Not one of Messrs. Waterer's splendid plants at Manley Park can properly be said to grow wild in any corner of the earth. They illustrate in the completest manner that floriculture, in the highest sense, does not simply mean digging and sowing and training, but includes also the calling forth of original secrets of loveliness, hidden by Nature purposely, with all their sweet capacity for disclosing new and charming contours and colours, the end of which we may be sure is not yet. Scores of tints and of exquisite combinations, not to mention conditions of habit and physiognomy, that were certainly never found conjoined in the Rhododendron in its wild or primitive states, are now laid before us. Though the poet deemed it "wasteful and ridiculous excess" to "paint the Lily," these Surrey Rhododendrons show that such a procedure is practicable, and that the world is a gainer by the attempt.

In the case of the Rhododendron, crossing appears to have been first tried with some of the American species above mentioned and the old Ponticum; also with the Ponticum and the yellow Azalea. When it became clear that the crimson arboreum was too tender for the open air a happy thought conceived that its brilliant colour might be associated, by crossing, with the hardiness, and at the same time with the smaller dimensions, of the old accustomed kinds. Many zealous cultivators set to work, commencing in 1826, or just half a century ago. The pollen of the hardy kinds was placed upon the pistils of the arboreum, and the hardy species were fertilised with the pollen of the Indian one. The hybrids raised from seeds yielded by plants of fertilised arboreum were by no means quite hardy; neither were the colours so bright as had been expected. Contrariwise, those which had been got by fertilising the hardy kinds with arboreum pollen were eminently successful, and three distinct races were soon in cultivation. Arboreum pollen applied to the pistils of the catawbiense gave the splendid progeny which led off with the × alta-clerense, so named because raised at High Clere, near Newbury, Hampshire, virtually by the hands of Lord Carnarvon, the second Earl, and one of the most enlightened florists of the time. High Clere continues to be one of the most famous private gardens in the world, in regard not only to its Rhododendrons, but to all congenerous plants. Arboreum pollen applied to the Ponticum gave the charming set of which the × Cunninghami is the most noted; and when the mother plant was a hardy species which we have not previously mentioned—the little half-procumbent caucasicum which had been introduced from the Caucasus in 1803—there was produced a grand series, of which the best representative was the × Nobleanum. The caucasicum flowers abundantly in the open garden as early as January, and the hybrids derived from it are often seen in bloom at the same very early season of the year.

In this way, accordingly, the old original desire of a hardy crimson Rhododendron at length became realised, and along with the colour arrived other excellent conditions. The vigour of the robust but comparatively poor in tint, the strong, the brilliant, all became reciprocally associated, with agreeable supplement of improved foliage where previously it had been poor, and of change of crowded clusters into gracefully expanded ones. On the Himalayas the foliage of the arboreum is often scanty, and the plants when out of blossom not infrequently present a lean and gloomy appearance. The work has been accomplished almost entirely in England, though in Belgium there has also been considerable success. In any case these beautiful hybrids are all emphatically European, and in quite a preponderating degree purely English, wherefore the impropriety of calling them "American plants." Hybridising may have been practised, for aught we know, by the American gardeners; but, so far, in England no results of it are known to exist. Writing down the name of the great Transatlantic State, one cannot but pause a moment on the very interesting reflection that the hybridising has been practised, not upon the plants of a single clime or country, but upon plants from the remote East and the Far West—Asia and America being united in the progeny. The conjunction, in these hybrid Rhododendrons, of the products of both hemispheres, is one of the largest and most significant facts in modern gardening. It shows, in the most pleasing manner, how floriculture, the first and finest of the fine arts, the most benevolent and the most civilising, literally helps to "make the whole world kin."

While the developments above described were in progress, Dr. Hooker, the present Director of the Royal Gardens at Kew, made the visit to the mountains of northern India which, commencing in the autumn of 1847, is described so delightfully in the *Himalayan Journals*. During his explorations he discovered nearly forty new species of Rhododendron, drawings and descriptions of thirty-one of which were afterwards published under the title of the "Rhododendrons of the Sikkim Himalaya." Among them were many wonderful species, including trees 40 feet high, pretty little trailers, epiphytes, plants with huge leaves covered below, as in the Falconeri, with brown wool, or bearing immense flowers shaped like bells, occasionally, as in the Maddeni, exhaling powerful odour, or united in heads so grand as to measure 18 inches across. Producing seed freely (no plants indeed are more fecund than the Rhododendron)—seed, moreover, that keeps sound for a very long time—most of these new species have by degrees been raised in England, and are now to be found in good collections of exotics. The first to produce its flowers was the ciliatum, a beautiful little thing, apt to deck itself with rosy bloom when only 6 inches high, and which never grows taller than a child. It flowers abundantly in the open air, as do likewise the glaucum and the anthopogon, alpine forms somewhat similar to the hirsutum of the Alps. The smallest found by Dr. Hooker was an elegant miniature, to which he gave the name of pumilum, a Rhododendron rooting among moss, growing only 3 or 4 inches high, and bearing pretty cup-like flowers on long peduncles. It is worthy of remark that this little Indian fairy among the Rhododendrons has a counterpart in the Rhododendron chamæcistus of the Alps. The most charming of all Dr. Hooker considered to be the campylocarpum, the flowers of which, borne on a bush about 6 feet high, are of a pure and spotless primrose colour. The nivale he describes as the produce of the loftiest elevation upon the surface of the globe, growing at the height of 18,000 feet above the level of the sea, far above the usual limit of flowering plants. So wonderfully fluent is the Rhododendron in its multiform species and modes of life.

Many other species of this splendid genus have been introduced of late years, some from Bhotan, by Nuttall, others from the warmer parts of Asia, comprising lovely plants of wholly unprecedented figure and hues, such as the jasminiflorum of Malacca, the snow-white flowers of which resemble those of the Stephanotis, and the bright orange or golden-yellow javanicum.

So far as practicable, crossing has been attempted between the Hookerian plants and the older sorts. Crossing has likewise been practised very extensively among the original hybrids, and is renewed every season, the bees assisting. Hence the number of sorts in cultivation, all the best of which have received names, is now beyond the counting, and the catalogue will soon compare with that of the most cherished kinds of Rose. To the list of Rhododendrons proper must be added that of all the shrubs called Azaleas, the distinctive characters of which, though well marked in the case of the extremes, in the intermediate forms insensibly disappear.

Hybrids illustrate much more than the simple or primitive forms of plants. Beautiful as a plant may become when doing its best *per se*, and under the stimulus of high culture, in these we see Nature constrained to take yet another leap, and transcending even the choice designs she set out with in the beginning. Our hybridisers, thanks to their ingenuity and perseverance, not only bring into the world, day by day, more flowers than ever were before: as pointed out above, they positively create new kinds, or such as, save for human skill and patience, would probably never have existed. Where once there stood only a solitary old Ponticum, now may be seen a score of these matchless hybrids, the colour no longer limited to purple, but reminding us, in its versatility, of the Auricula and the Hyacinth, the range being from pure white, through peach and cherry-rose, up to inexpressible carmine. Blue alone, as in Roses and Ericas, is wanting. Strange that Nature, usually so lavish, should in respect of blue be so parsimonious. Yellow also is wanting for the present, but this will be got by-and-bye, several species possessing it *sui generis*. Not the least attractive feature in the colouring of the hybrids is the variety in the spots, which ranges from green to the intensest purple. The time will doubtless arrive also when, by crossing with some of the scented Himalayans, there will arise a new race of hardy fragrant Rhododendrons. *Leo. Grindon.*

FLOWERS AND THE SUN.

THE great astronomical difficulty in the occurrence of a subtropical fossil flora in Greenland and Spitzbergen is not the heat that has to be accounted for, which might be obtained by a different distribution of land and water, but the light. True it is that every species of plant requires a certain accumulated temperature to enable it to reach maturity and to flower; but without light not a green leaf can be put forth, nor can the young plant assimilate the needful carbon from the atmosphere. We are accustomed to look on the many-hued rainbow, or the spectrum formed in the decomposition of ordinary white light by the prism of the physicist, and the varied tints of the floral world, as things of beauty; but we seldom think of them as causally connected. It is, however

a fact that the various rays, increasing in refrangibility from the red to the violet, which are mingled in white daylight, have very different effects upon plant life. It is often stated that the solar beam is compounded of three forces—heat, light, and actinism—in three different but overlapping regions of the spectrum, the red, the yellow, and the violet. Professor J. W. Draper has shown, however, that this is an error, arising partly from the use of prisms which condense the red end of the spectrum and dilate the violet, and partly from the nature of the substances ordinarily used in photography, the greater activity of the chemical decomposition of silver salts in violet light being peculiar to the salts, not to the spectrum. The action of the various rays on plant-life bears out this view that actinism is found throughout the spectrum, or, as Professor Sachs expresses it, that the rays are not divided into chemical and non-chemical, but that there are chemical processes which are related to rays of particular refrangibility. The production of the green colour of chlorophyll, or leaf-green, the decomposition of the carbon-dioxide of the air, and the formation of starch, sugar, or oil, in the chlorophyll, are produced chiefly or solely by red, orange, yellow, or green rays. Those rays to the intensity of which the eye is most sensitive, that is to say the brightest of yellow rays, are found by Pfeffer to be those under which most carbon-dioxide is decomposed. Light only affects plants when its rays penetrate into their organs, and the deeper it penetrates the more does it lose in intensity by absorption, reflexion, and dispersion, the superficial layers of tissue, as Sachs has shown, nearly entirely absorbing the most refrangible, *i.e.*, the violet rays; thus it is not the whole of the light which falls on the surface of a plant which affects the colour or chemical changes of its inner tissues. Every one is familiar with the blanching of grass under stones, or of Celery, Seakale, and Rhubarb when grown in the dark; but it is remarkable that as a rule this "etiolation," as it is termed, does not extend to the flowers. Their petals will acquire their colour in the dark, whilst their normally green calyx is blanched like the leaves. There is, however, at least one exception to this rule in the white Lilac obtained by the Paris florists, by forcing the coloured kinds in almost complete darkness. It seems difficult then to imagine that the colour of flowers can be dependent on light, yet, by a most interesting investigation of averages, Mr. Alexander Buchan has shown that of 900 British flowering plants—257 white, 238 yellow, 144 red, 94 purple, and 87 blue—the blues on the average flower considerably the earliest, then, in order, the whites, purples, and lastly the yellows and reds. Thus, taking the percentage of those of each colour which has come into flower during or before each month from April to July, Mr. Buchan finds—

	April.	May.	June.	July.
Blue	16	43	71	93
White	14	36	70	97
Purple	4	28	61	92
Yellow	9	24	61	93
Red	9	25	62	94

It is also noteworthy that the average date of flowering of the blue variety of Scilla bifolia (the two-leaved Squill) is March 7, that of the white variety March 17, whilst the red form does not flower till the 21st. The law which these interesting facts point to has yet to be discovered, but more facts are wanted, and for their acquisition more observers in different localities. *The Agricultural Students' Gazette.*

TWO NEW FUNGI.

TWO very interesting new genera of Fungi have been forwarded to me by Herr Kalchbrenner, who is doing such good service to European mycology by the publication of his *Icones*. Both are quite distinct from anything received hitherto, and give occasion to believe that novelties from Africa are by no means at present exhausted. Their characters are as follows, taken in part from the discoverer's notes; of the one I have seen only the figure which is here reproduced (fig. 140), of the other a section.

1. KALCHBRENNERA, *Berk.*

Receptacle hemispherical, confluent with the stem, giving off numerous radiating nail-shaped simple or forked processes, between which the hymenium is spread.

KALCHBRENNERA TUCKII, *Berk.* (Fig. 140.)

Volva filled with firm gelatine, half immersed in the soil, 1½ inch wide, 1¾ inch high, white, minutely furfuraceo-floccose, within slightly veined. Stem 4 inches high, fixed to the volva at the base, fistulose, wider above, clathrato-cellulose, pale waxy yellow, slightly tinged

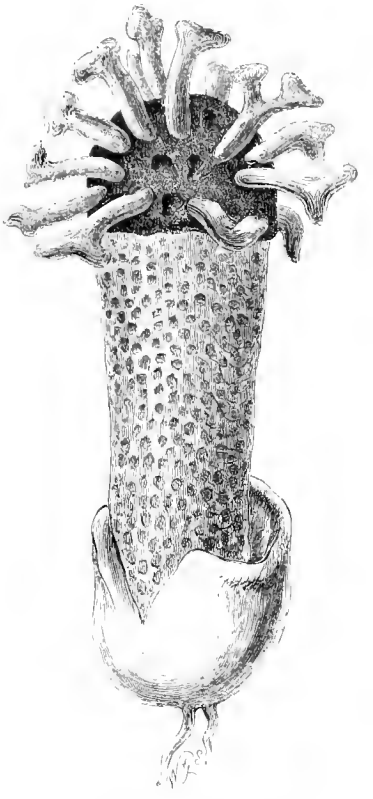


FIG. 140.—KALCHBRENNERA TUCKII.

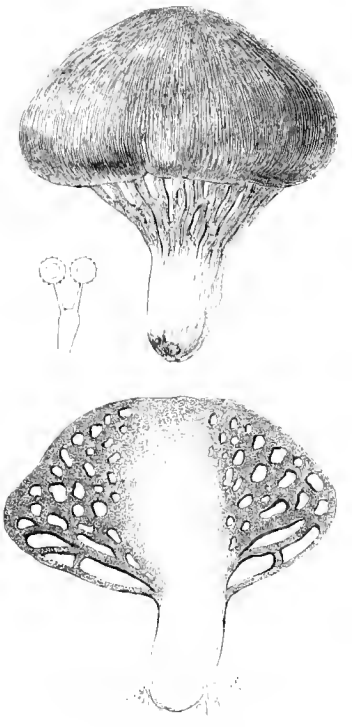


FIG. 141.—MACOWANIA AGARICINA.

with red above. Receptacle hemispherical, divided into from 12—16 bright scarlet nail-shaped processes, which are cylindrical or compressed below, entire above or 1—2 furcate, after the manner of the thorns of Carissa Arduini, Lam., the colour of which remains in the dried specimens, and between which is spread the even olive-black stratum of spores. Smell strong and extremely disagreeable. Spores minute, ovate, pellucid.

Springing up after rainy, thundery weather, and decaying in the course of twenty-four hours. This very interesting plant has occurred three or four times in rough places of the mountain Boschberg, in East Somerset, C.B.S., amongst Acacia thickets, where it was found by Julius Tuck, formerly Prefect of the Botanic Garden, and sent by Mr. MacOwan, Professor in Gill's College (Somerset East), a diligent collector of the fungi in his neighbourhood. The genus is clearly quite distinct from Lysurus, to which it is allied.

2. MACOWANIA, *Kalchb.*

Peridium epigæous, stipitate, fleshy; stem within reaching to the apex, distinct below, surrounded above by the cavernose hymenium, which is free and decurrent below; sporophores bearing two globose hyaline slightly tuberculate spores.

MACOWANIA AGARICINA, *Kalchb.* (Fig. 141.)

Peridium hemispherical, even above; dingy, of a dirty brown, produced below into a short stem-like smooth white process, which penetrates up to the apex of the peridium, and is surrounded above by the large cells of the hymenium, which are below much elongated and project beyond the peridium, their apertures open to the air and decurrent. Odour strong, like that of Garlic; spores rather large, globose; epispore thick, slightly tuberculate.

The genus is clearly allied to Gautiera, but has a distinct peridium above. *M. J. B.*

OPEN AIR VEGETATION.*

THE month of May has been in general very dry, with much easterly wind. A few showers fell, but none of them of that genial nature so much wanted for vegetation at this season of the year. During May the thermometer was seven times at or below the freezing point, indicating collectively 26°, the lowest being on the mornings of the 2d, 3d, 4th, 7th, 9th, and 13th, when 26°, 26°, 27°, 30°, 32°, and 25° were respectively registered, while the highest morning temperatures were on the 21st, 22d, 27th, 28th, 29th, and 30th, when 46°, 45°, 50°, 55°, 49°, and 50° were indicated. The following table shows the amount of frost experienced during the months of May for the last 22 years. Of these years it will be seen that May 1855 showed the lowest markings.

Frost Registered during the Month of May in the Royal Botanic Garden, Edinburgh, during the last Twenty-two Years.

	Number of Mornings the Thermometer was at or below the Freezing Point.	Degrees of Frost Registered during the Months of May, from 1854 to 1865.		Number of Mornings the Thermometer was at or below the Freezing Point.	Degrees of Frost Registered during the Months of May, from 1866 to 1875.
1854	2	4	1866 ..	0	0
1855	5	24	1867 ..	1	2
1856	2	4	1868 ..	1	6
1857 ..	2	2	1869 ..	4	13
1858	1	4	1870	2	6
1859	1	1	1871	3	5
1860 ..	2	2	1872	1	4
1861	4	20	1873 ..	2	6
1862 ..	2	4	1874 ..	7	16
1863 ..	0	0	1875 ..	0	0
1864 ..	0	0	1876 ..	7	26
1865 ..	1	1			

The foliage of the ordinary forest trees came rapidly forward during May, in consequence of the moisture in the soil, caused by the heavy rains which fell towards the end of April, before the leaves were expanded. The foliage is now (May 31) well matured, with the exception of certain American forest and ornamental trees, which are always late of leafing—kinds which are particularly noticed in my garden report for May, 1875. The flowering of the ordinary ornamental trees is considerably behind an average. The common Horse Chestnut is now covered with bloom, but none of the flowers are so rich in appearance as during former years, being somewhat dingy in colour, evidently injured by the frosty nights they were subjected to during the early part of the month; the leaves, likewise, are far from perfect, being much injured by vermin. Laburnums are blooming very

* Read at the June meeting of the Edinburgh Botanical Society, by James McNab, Curator.

freely this year, particularly those trees of the Scotch variety (Cytisus Laburnum alpinus), which produced no blossoms last year. Although the common white and scarlet Hawthorn were partially in flower on May 31, a full blow cannot be expected before the middle of June.

Herbaceous plants this year are in general late of blooming. Many of the early-flowering species have produced few or no seed-vessels, probably owing to the frosty weather which happened in April, while the plants were in blossom. Of the Cynoglossum officinale, although it flowered abundantly during spring, and is grown here in large quantities for its fruit for class purposes, very few developed fruit are to be found, one or two achenes of the 4-lobed ovary are to be seen entire, all others being abortive. Of the Myrrhis odorata and Orobus elegans, plants also cultivated for their fruit, although they flowered profusely, fruit is also deficient. The Crown Imperial is without fruit, as well as many of the early Cowslips and Oxlips, whose barrenness I also attribute to the frequency of frost which occurred during the month of April, when the plants were in flower.

On May 31, 282 species and varieties of dwarf alpine and herbaceous plants (exclusive of duplicates) were counted in flower on the rock garden, the most conspicuous for colour and rarity being—

Achillea Clavennæ
Andromeda fastigiata
,, tetragona
Anemone palmata
Anthyllis erinacea
Arenaria purpurea
Aubrietia, of sorts
Cathcartia villosa
Chamæbatia foliosa
Delphinium nudicaule
Draba tridentata
Dryas Drummondii
Erica australis nana
Erinus alpinus
,, albus
,, hispanicus
Erodium Richardii
Erysimum helveticum
Fritillaria kamtschatica
Gentiana verna
Globularia trichosantha
Iris cristata
Ledum buxifolium
,, thymifolium
Lithospermum fruticosum
Menziesia Drummondii
Myosotis alpestris
Trifolium alpinum
,, uniflorum
Pentstemon Menziesii
Pernettya angustifolia
Phlox Nelsoni
,, setacea violacea
Primula cortusoides amœna
,, luteola
Saxifraga, of sorts
Symphiandra Warnerii
Thalictrum aquilegifolium
roseum

GREENHOUSE PLANTS.

THEIR CULTURE AND MANAGEMENT.

Daphne indica.—This highly fragrant plant, of which two varieties occur, is a native of China. They are somewhat slow growers, compact in habit, and do not attain a large size, but have a remarkably free disposition to bloom. There are few flowers, excepting the Rose, more prized for their fragrance than these Daphnes. A small plant when in bloom will scent a whole house. For this purpose they are highly esteemed for placing in conservatories, especially when these are connected with dwellings where the presence of fragrant flowers is a desideratum. The large number of Daphnes that is annually propagated in the nurseries throughout the country, coupled with their being such general favourites, would lead to the supposition that they would be met with in far larger quantities than they often are. This may be accounted for by their being plants that, although easy enough to grow when they receive the treatment they require, are almost certain to die or linger out a dwindling existence if managed on the unintelligent system of treating all things alike that will conform to any particular temperature, more especially in the two very important operations of potting and watering.

It is to the fact of these plants being too often treated after this general sort of fashion that their not thriving with many growers is to be attributed. Either when grafted or on their own roots they are very spare rooters, and cannot bear over-potting. If as much root-room is given them as required by many subjects, it is all but impossible to keep them in health. They are also very impatient of too much water, and never, even when making active growth, must water be given before the soil requires it—which, in their case, should be allowed to get drier than with most plants, yet not so as to allow the young growth to flag. But it is in the dormant season, after the growth is completed, that it is necessary to exercise more than ordinary care that water is not applied too soon. I prefer plants struck from cuttings, but these are seldom to be met with, as the demand is such that grafting is generally resorted to, on account of their being so much more rapidly increased by this method.

In procuring young stock select such as have been stopped-in sufficiently close from the first to cause them to break enough shoots to form bushy specimens. This is the more necessary, as they have the greatest dislike to being cut back into the hard wood. Although, strictly speaking, greenhouse plants, they make much greater progress, especially whilst in a young state, if kept through the early part of the season in a temperature of 50° or 55° in the night, and proportionately higher by day: so treated they will make double the growth that they can be induced to do by allowing them to remain in an ordinary greenhouse. If a house or pit is available, where they can be accommodated with a temperature such as above-mentioned, they should be introduced into it in February, when they will quickly push into growth as soon as the roots have begun to move. If the pots are well filled with them, they should be moved into others 1 or 2 inches larger in proportion to the size they have previously occupied, but, as has been already stated, they must not have too large a shift. They succeed the best in good fibrous peat four parts, to one of thoroughly rotten dung, with a liberal addition of sand. Drain the pots well, and over the crocks place some fibrous material to keep them quite free from the soil, as if the crocks become clogged up ever so little the roots will suffer. Stand them in a moderately light position, and syringe slightly overhead in the afternoon, but be sparing of water to the soil until the roots have made some progress.

When the shoots have pushed about 2 inches pinch out the points to induce them to break, and continue them in an intermediate temperature all through the spring and summer, tying out the growths to a few neat sticks, so as to lay the foundation for bushy specimens. Give air moderately during the day, but close the house with sun-heat and plenty of moisture in the atmosphere; in bright sunny weather they will be benefited by a thin shade during the middle of the day, but this must not be used so as to induce a weak growth. By the end of August, if all has gone well, the plants will have pushed their shoots 3 or 4 inches beyond the point to which they were stopped, and if the intention is to grow them on to a considerable size as quickly as possible—which is much the best method of treating these Daphnes—they should be kept on through the winter and during the ensuing summer in an intermediate-house temperature. Where it is decided thus to deal with them they ought at the end of August to be moved into pots an inch or two larger, according to the quantity of roots they are found to possess when examined; pot in similar soil to that recommended for them in the spring, and again pinch out the points of the shoots. Syringing overhead may now be dispensed with for some time, but maintain through the autumn a temperature of as near 50° in the night as convenient, and be careful how water is given to them; if very vigorous they will shortly break into growth, pushing three or four shoots from each point that was stopped—if not so strong they may not push growth for some months, but nevertheless much will be gained by keeping them a little warm, as the root-power will be increased.

Treat them through the early part of the ensuing season as advised for the preceding year, and towards May again turn them out of the pots, to see if they require another shift, which will be the case if they have done well. If the roots are plentiful give them pots 2 inches larger, stop and tie-out the shoots, letting the summer's management be similar to the last. By the close of the summer they will have grown into nice sized plants, with a quantity of strong flowering growths that will have set their bloom bunches on all the points; they may now be placed amongst the ordinary greenhouse hard-wooded stock through the autumn, and if required to flower early a portion of them may be put in a little heat about the beginning of the year. If their flowers are wanted for cutting, choose those from the strongest shoots, such as have a strong terminal bud at the base of each of the leaves with which the shoots are furnished for some distance from the points. The blooms being produced in compact bunches with no length of foot-stalk, it is necessary in cutting them to take some little of the wood with several of the leaves attached.

Growths that are weakly are generally devoid of the buds above-mentioned, and if the flowers from them are cut with the buds that are immediately at the base of the flowers they rarely break freely, more often not at all; but when strong buds such as pointed out exist, these will push growth when the points of the shoots with the blooms have been removed. It is thus necessary to use discrimination in cutting the flowers of these Daphnes, or it will induce the bare, naked condition so often seen. When it happens that a plant is altogether weak it should not be cut at all. The treatment in after years should be similar to that which has been so far advised, with the exception that it is not requisite to grow them in anything above a greenhouse temperature. A 12 or 14-inch pot is big enough for them when they arrive at a large size. When the pots get full of roots the plants should be well supplied with manure-water during the growing season. Where there is not the convenience for giving them in their early stages a little extra warmth, as above advised, they should not be potted before the end of April; and during the summer ought to be kept as warm as circumstances will permit, by closing the house early, treating them in other respects as advised under the quicker method of growth.

The two varieties, D. indica alba and D. indica rubra, differ little in general appearance of the plants. The flowers of the latter are higher-coloured.

D. japonica variegata is also well worth growing, both for its flowers and handsome variegated foliage. It succeeds under similar treatment to the others.

These Daphnes are not much troubled by insects, but sometimes greenfly will attack the young shoots, for which fumigate with tobacco: thrips also will prey upon the leaves—the best remedy for these is to dip or syringe with tobacco-water. If brown-scale gets upon them, it must be removed with a sponge, as any solution strong enough to kill it is liable to injure the leaves. *T. Baines.*

DISEASES OF PLANTS AND TREES.

At the June meeting of the Botanical Society of Edinburgh, Dr. Alex. Hunter read a paper on "The Diseases of some of our Garden Plants and Fruit Trees; their Origin and Treatment."

In the course of his remarks he said:—The first subject, and one of considerable public importance, is the diseases which are so constantly attacking our Potato crops. When first brought to notice as an article of food, the tubers were small and about the size of Walnuts, but by judicious culture they have since been greatly improved in appearance and size; but for many years past they have been deteriorating, owing, I believe, to three distinct causes. First, faulty propagation, to the neglect of one of the most important laws of Nature; secondly, over-manuring; and, thirdly, too much forcing by moisture, heat, and unsuitable soils. It may be well to draw attention to these points in detail, and see if we cannot find a remedy. We have been propagating the tubers for so many years by cuttings or eyes, that I believe we have nearly exhausted the vitality of the plant, and I can remember that from forty to fifty years ago, when I was a boy, this very subject had attracted the attention of some of our farmers, and the remedies which were then pointed out were that we should again return either to the seedling Potato or import fresh tubers from South America. This I remember to have heard in 1858 had been tried by farmers both in East Lothian and in Fife, and with good results.

Now, the law of Nature, to which I would call attention as one that we are neglecting, is that we are attempting to force into overgrowth or development of one part of a plant to the injury or almost the destruction of other parts of that plant. Now, God has wisely kept in His own hands certain powers both of creation and of destruction; with these powers man cannot interfere to any great extent without being taught lessons which at once show us his impotence. Yet from our failures we may occasionally derive instruction, which may perchance be turned to account for the benefit of others. If we go on propagating merely the tubers of one plant, the fruit of another, the flower of a third, in proportion as we improve the tuber or root, the fruit or the flower, so much do we take from the vigour of some other organ or part of that plant. This is a law or axiom known to most florists, agriculturists, and botanists; yet the practical application of that law we are neglecting almost daily. As a proof of this, in regard to the Potato, I would recall a fact which may have escaped public attention. I remember when a boy that Potato Apples were very plentiful in our fields, and that one of our Saturday amusements used to be gathering a good pocketful of these, cutting a long twig off a Thorn hedge, stripping this of leaves and prickles,

and firing-off Potato Apples to a prodigious distance, to the terror of the crows, and the delight of our younger brothers or sisters. But now Potato Apples are scarce, and this source of amusement is nearly gone. The simple reason I believe is that the vitality of the plant is almost exhausted, and it is a hint to us that we should go back to the seedling Potato oftener.

In consequence of the vitality of the plant having been lowered, so is it more predisposed to be attacked by disease. There are four or five distinct forms of disease which attack the tubers of Potatos—sweetness, usually caused by frost; waxy translucence, said to be owing to an excess of alkali in the Potato; rings of black carbonaceous deposit in the substance, which appear to be caused by growing Potatos too often on the same soil, without any rest or rotation of crops. The ground becomes impregnated with the decaying refuse of stalks, leaves, and *débris* of the plant. This form of disease is becoming very common in some parts of India. The cure for it is renewal of the soil after each crop, and using less manure. The worst disease, and the one which points most clearly to lowered vitality in the tubers, is their liability to be attacked by fungus growths, as Peronospora infestans, or Phytophthora. No other crop is equal to the Potato in the power of sustaining life and health, either from the quantity that may be produced in the same space, or the quality of that produce. A boll of Potatos of 32 stones subsists a man for thirty-two days. Many acres of land near Edinburgh would yield 60 to 70 bolls from the Scottish acre, which is less than the Irish. The Scottish medium, then, at 50 bolls, or 1600 stones, a well-cultivated acre, would subsist a man for 4 years 140 days, or $4\frac{3}{4}$ men one year. The allowance of oatmeal to the Scottish hind is 2 pecks a week, or $6\frac{1}{2}$ bolls in the year, which only a strong man can consume. An acre yields an average of 9 bolls. Thus an acre will subsist $1\frac{1}{2}$ man, while Potatos will subsist $4\frac{3}{4}$ men—an agricultural friend says $5\frac{1}{2}$ men, and that my estimate is understated.

A point worthy of attention is the vague, inaccurate, and unscientific way into which our farmers, agriculturists, and, in fact, most of us have got of talking about seed Potatos. Now, I maintain that we have for practical purposes lost the true seed of the Potato, and that if a few hundredweights of healthy seed from the Potato Apple that would germinate were to be called for, and a liberal prize were to be offered for it, such a thing could not be procured for love or money—in England, Scotland, or Ireland. The tubers or eyes in the Potato are not the seed of the plant: and I believe that it is from our neglect of this simple truth that we are paying the penalty not only of the ravages of the Potato disease, but also that to this same cause may be attributed the loss of many of our best kinds of Apple, Pear, and other fruit trees. The only true and satisfactory way of restoring Potatos to their former health and vigour will be to return to the healthy seed from the Potato Apple. Let us get this first, and then, having got it, let us take care to keep up a stock of this healthy and true seed, and then attempt to ascertain what is the term of the natural life of the Potato. I believe firmly that if we do not take some decided step of this kind, the Potato will soon become an esculent of the past.

I do not believe that we shall be able to determine with precision what is the real term of life or of healthy vitality that God has appointed for the Potato; but reasoning from what we have been able to observe about other plants, and fruit trees in particular, a certain, though not a very well-defined, period has been assigned as to the term of life of each plant. Thus, I have heard it stated that the Apple tree has a life varying from sixty to seventy or even eighty years, the Pear from 200 to 250 years, the Oak from 500 to 600 or 700, and the Pine tribe, which appear to be longest lived of all trees, up to 2000 or even 3000 years; and we have scientific data to go upon, as the number of concentric rings in the cross sections of the woody stems lead us to these conclusions, and authentic records of the dates of some of our fruit trees having been introduced, as well as of the times when particular species of fruits died out. I can speak from actual experience and observation to some facts regarding Apple, Pear, and Peach trees, which about fifty years ago were more fashionable trees for our gardens in Great Britain than they are now, but they have been superseded of late by Vines, Pine-apples, hothouse and other plants, of perhaps greater delicacy of flavour, but certainly more expensive to cultivate, and fully more liable to disease. I may mention that the best Apples, Pears, and Peaches now grown are perhaps those of America and of some of our hill stations or *sanitaria* in India, as Bangalore, Coonoor, Ootacamund, Ramandroog, the Shevaroy Hills, and Anamallies, where these fruit trees seem to be following the same course of culture as was adopted in Great Britain from fifty to one hundred years ago.

Dr. Hunter concluded by referring to the diseases which are attacking some of our fruit trees, which he believed might be attributed to the same causes as those that had proved so injurious to the Potato, viz., loss of healthy vigour and vitality in the parent stock, and neglect of returning more frequently to the seedling trees. If we wish to eradicate disease, he said, we need not work away with the worn-out and nearly exhausted plants, but recur frequently and at certain periods to the healthy seedling plants, as in the Potato, to those grown from the Potato Apple, and not always from tubers; and in fruit trees, to the healthy vigorous stock grown from good seed, grafted on healthy seedling stocks, and not from cuttings, for it must be remembered that every time that we propagate a tree by a cutting, we to a certain extent injure the vitality of the seed, and after a few such propagations none of the seeds will grow.

In the course of some conversation, which followed the reading of the paper, it was stated by several members that they had tried the experiment, and found that Potatos obtained from seed in the way suggested by Dr. Hunter had been found to give way to disease.

A SYNOPSIS OF THE KNOWN SPECIES OF IRIS.—VI.

In the present paper I propose to deal with the three small sections of Iris proper, which are as follows, leaving the other three—Evansia, Apogon, and Pogoniris—for a future occasion.

SECTION 1. HERMODACTYLUS. — Rootstock a digitate tuber. Falls without any beard or crest. Ovary one-celled, with three parietal placentas.

The only species—	18. I. TUBEROSA.

SECTION 2. ONCOCYCLUS. — Rootstock a thick rhizome. Falls obscurely hairy down the throat and claw. Standards at least as large as the falls. Ovary three-celled.

Key to the Species.

Falls and standards about equal in size:	
Stem tall	19. I. SUSIANA.
Stem dwarf	
Falls reflexing	20. I. IBERICA.
Falls not reflexing	21. I. SAARII.
Falls decidedly smaller than the standards:	
Falls obtuse, with a rudimentary blade:	22. I. PARADOXA.
Falls acute, with a blade half as long as the claw	23. I. ACUTILOBA.

SECTION 3. HEXAPOGON. — Standards and falls both bearded down their claws.

Leaves subulate	24. I. FILIFOLIA.
Leaves linear, deeply channelled	25. I. FALCIFOLIA.

18. *I. tuberosa*, Linn. Sp. Plant., 2d edit. p. 58; Willd. Sp. Plant., p. 240; Bot. Mag., tab. 531; Red. Lil., t. 48; Sibth. and Sm. Fl. Græc., vol. i., p. 29, t. 41; Eng. Bot., 3d edit., t. 1496; Flore des Serres, t. 1083; Reich. Ic. Fl. Germ., tab. 348; *Hermodactylus tuberosus*, Salisb. in Trans. Hort. Soc., vol. i., p. 304; Godr. Fl. Franc., vol. iii., p. 425; Klatt, in Linnæa, vol. xxxiv., p. 582; *H. longifolius*, *repens*, and *bispathaceus*, Sweet, Brit. Flow. Gard., 2 ser., t. 146.—Rootstock of 2—4 digitate oblong-cylindrical tubers, about an inch long. Stem weak, slender, hollow, one-flowered, a foot or more long. Outer leaves bract-like, lanceolate, membranous; within these two or three produced from the base overtopping the flower, weak, glaucous, tetragonal, erect, $\frac{1}{4}$ inch broad at the lower part, reaching finally a length of 2 or even 3 or 4 feet. Stem clasped for the greater part with a loosely-sheathing leaf, having a short free blade. Spathe with usually only a single large green lanceolate-navicular membranous valve, which often overtops the flower, but a second smaller one added sometimes. Pedicel $1\frac{1}{2}$—2 inches long inside the spathe; ovary oblong, $\frac{3}{4}$ inch long; tube very short, cylindrical; limb 2—$2\frac{1}{2}$ inches deep; falls with an orbicular obtuse lurid purple veinless lamina, $\frac{1}{2}$—$\frac{3}{4}$ inch broad, not more than half as long as the oblong spathulate claw, which is greenish yellow on both sides and $\frac{3}{4}$—1 inch broad at the middle; standards erect, under an inch long, rhomboid, unguiculate, the blade entire or trienspidate. Anthers yellow, $\frac{1}{2}$ inch long, equalling the filaments. Capsule obovoid, $1\frac{1}{2}$—2 inches long by half as broad, not three-celled, as in the other species, but the three placentas strictly parietal. Stigmas greenish yellow, including the large crests, as long as the falls.

Extends through the Mediterranean region from the South of France to Greece. It has been well known in cultivation from an early date. It is mentioned as a garden plant by Gerarde in 1596, and is figured in Morison's *Historia* and Parkinson's *Paradisus*. It is quite hardy, but rarely produces seeds in England. In its native home it flowers in February and March, with us in April and May. In the second series of Sweet's *British Flower Garden*, under the figure of H. longifolius, tab. 146, the plant is divided into three supposed species, H. longifolius, H. repens, and H. bispathaceus. These are adopted by Spach as species under Iris (Walp. Ann. i., p. 816), but to my eyes are mere forms of a single species. H. repens is the ordinary wild type, as figured by Sibthorpe and Redouté; H. bispathaceus is the form with two valves to the spathe, as figured in the *Botanical Magazine*; and H. longifolius, a form with unusually long leaves. On account of the different structure of its fruit, this ought clearly to be maintained as a genus distinct from Iris. The name Hermodactylus was first applied to it by Tournefort, and of post-Linnean authors by Salisbury, and it has been treated of late years as a distinct genus by Godron, Parlatore, and Klatt.

19. *I. susiana*, Linn. Sp. Plant., 2d edit., p. 55; Bot. Mag. t. 91; Red. Lil., t. 18; Vahl. Enum., vol. ii., p. 125; Savi. Fl. Ital., vol. ii., tab. 74; Tratt. Archiv. Pict., t. 130; Flore des Serres, t. 1067—8. *Oncocyclus susianus*, K. Koch, in Linnæa, vol. xxi., p. 639; Klatt, in Linn., vol. xxxiv., p. 589.—Rhizome firm, short, thick. Outer rudimentary leaves lanceolate, membranous. Produced basal leaves about half-a-dozen, pale green, rather glaucous, ensiform, $\frac{1}{2}$—1 foot long, clasping the stem, $\frac{3}{4}$—1 inch broad at the base, moderately firm in texture, with a distinct pale border. Stem 1 foot or $1\frac{1}{2}$ foot high, one-flowered, with a single reduced bract-like leaf at the middle. Spathe of two lanceolate acute valves, about 3 inches long; ovary cylindrical, 1—$1\frac{1}{4}$ inch long, elevated on a short pedicel inside the spathe; tube greenish, 1—$1\frac{1}{4}$ inch long; limb 3 inches deep; the standards and falls similar in size and shape, with a round blade, $1\frac{1}{2}$—3 inches broad, cuneately narrowed to a short claw, with dense, fine spots and lines of brown-black on a whitish groundwork tinged with lilac; the falls reflexing about half-way up, and densely pilose down the claw, with a broad cushion (not a narrow line, as in the Pogoniris section) of brown-black hairs; the erect standards only slightly pilose down the claw, and less densely spotted on a groundwork of brighter lilac. Stigmas plain purplish brown, $1\frac{1}{2}$ inch long, exclusive of the crests, $\frac{3}{4}$ inch broad at the top, arching, and acutely keeled; crests $\frac{1}{2}$ inch long, reflexing and spotted, like the perianth segments. Anthers $\frac{5}{8}$ inch long. Capsule not seen.

One of the most distinct and striking of all the Irises. The wild specimens which I have seen are from Mesopotamia and the neighbourhood of Ispahan, and it also inhabits Syria. It is mentioned by Lobel and Clusius, and is said to have been introduced into Europe in 1573. The flowers appear in April or May, and are scentless and rather fugitive. The variety I. livida (Tratt. Archiv. Pict., t. 129; Red. Lil., t. 18) differs from the type by its more slender habit, longer, narrower leaves, and smaller, more livid, less veined perianth segments.

20. *I. iberica*, Hoffm. Comm., vol. i., p. 41; M. Bieb. Flor. Taur. Cauc., vol. i., p. 30; Led. Fl. Ross., vol. iv., p. 105; Regel, Gartenflora, tab. 386, figs. 1 and 2, and tab. 713; Fl. des Serres, t. 1963; Floral Mag., new series, t. 168; Illust. Hort. 1872, t. 100; Bot. Mag., t. 5847; Rev. Hort. 1873, 370; *Oncocyclus ibericus*, Siems. in Bot. Zeit. 1846, p. 408; Klatt, in Linnæa, xxxiv., p. 580; Walp. Ann., vol. i., p. 830.—Rhizome short, as thick as a man's finger. Leaves about half-a-dozen in a basal tuft, falcate, glaucous, linear, 3—4 inches long, $\frac{1}{2}$ inch broad at the base. Stem one-flowered, 3—6 inches high, with a single bract-like leaf at the middle. Spathe of two green lanceolate acute valves, $1\frac{1}{2}$—2 inches long. Ovary cylindrical, nearly sessile, $\frac{3}{4}$ inch long. Tube cylindrical, greenish, $\frac{1}{2}$—1 inch. Limb 3 inches deep; all the segments nearly alike in size and shape, obovate, obtuse, cuneately narrowed to a short claw, $1\frac{1}{2}$—2 inches broad, the falls reflexing from near the base, closely veined like those of susiana with dark purplish brown, with a velvety, plain, dark purple blotch at the throat, and the claw below it thinly covered with dark purple hairs, the erect standards veinless, plain white or pale lilac. Stigmas deflexing with the falls, 1—$1\frac{1}{4}$ inch long, with deltoid entire crests. Anthers longer than the filaments.

A native of the Caucasus and the mountains of

Armenia and the North of Persia, at an elevation of 6000 to 7000 feet. It is a most distinct and unmistakeable species, which, although only of late introduction, is no doubt by this time familiar to all who take an interest in the genus. There is considerable variety in the shape and colouring of both standards and falls. Regel's var. ochracea has the groundwork of the latter a decided yellow. I. Heylandiana of Boissier, said to be a close ally of this species, I have not seen. On the whole, the species much resembles I. susiana dwarfed down, but the falls turn back from the very base and stigmas wrap closely over them, and the cushion of hairs on their claw is much thinner.

21. *I. Saarii*, Schott. — Rhizome short, oblique. Leaves about half a dozen in a basal tuft, linear-complicate, pale green, finally reaching a foot in length, ¼—⅓ inch broad. Scape one-flowered, not more than 2 or 3 inches high. Spathe of two equal lanceolate valves, 2 inches deep, reaching up to the base of the limb. Ovary sessile, cylindrical, ¾ inch long; tube green, an inch long; limb bright lilac, 3 inches deep, the falls ascending, rather shorter than the standards, oblong-unguiculate, 1—1¼ inch broad at the middle, with a patch of strong hairs in the centre reaching a breadth of half an inch; standards incurving, round-unguiculate, 1¼ inch broad. Stigmas very broad, bright lilac, like the perianth-segments, 1¼ inch long, including the deltoid crests. Anther ½ inch long.

A native of Persia or Armenia. have not been able to find out where the name was published, and have only just seen a specimen for the first time through the favour of Herr Leichtlin. It is a well-marked species, nearest iberica, but differing by its bright lilac flower, and ascending oblong not obovate falls, with much stronger hairs at their throat.

22. *I. paradoxa*, Stev. in Mem. Mosc., vol. v., p. 355; Roem. and Schultes, Syst. Veg., vol. i., p. 317; Led. Fl. Ross., vol. iv., p. 105; Regel, Gartenflora, tab. 386, fig. 3; *Oncocyclus paradoxus*, Siems. in Bot. Zeit. 1846, p. 706; Klatt, in Linnæa, vol. xxxiv., p. 580.—Rhizome short, tortuous, ¼ inch thick, the relics of the bases of the old leaves splitting up into copious fibres. Produced basal leaves about half-a-dozen in a tuft, linear, falcate, 3—6 inches long at the flowering time, glaucous, channelled down the face, ¼—⅜ inch broad, with a distinct pale membranous edge. Stem ¼—1 foot high, one flowered, with a single bract-like, large sheathing leaf at the middle. Spathe of two lanceolate acute greenish membranous valves, 2—3 inches long. Pedicel short inside the spathe; ovary cylindrical, ¾ inch long; tube cylindrical, under an inch long; falls spreading or rather ascending in the fully-expanded flower, 1—1½ inch long, with a semiorbicular minute lamina, and a pilose claw, ¼—½ inch broad, with nearly parallel sides, the colour of both bright lilac-purple; standards obovate-unguiculate, 2—3 inches long, 1—2 inches broad, erect, varying in colour from white to bright lilac-purple. Stigmas rather shorter than the falls, the crests small and deltoid. Stamens not more than ½ inch long, the anther equalling the filament.

Like the last, a native of the mountains of Georgia, and the northern provinces of Persia. The general habit is completely that of iberica, but this and the next differ from all the other Irises by having the falls decidedly smaller than the standards. Here, although the standards are as large as in iberica, the fall is reduced to a strap-shaped hairy claw about an inch long, and the mere rudiment of a lamina. The standards run through every range of colour, from white to bright violet-purple and claret-purple. The plant is one to which our cultivators ought to direct their attention, for although it was figured many years ago in Regel's *Gartenflora*, I am not aware that it has ever reached this country.

23. *I. acutiloba*, C. A. Meyer, Ind. Cauc. 32; Led. Fl. Ross., vol. iv., p. 105; Regel, Gartenflora, tab. 812, fig. 1; *Oncocyclus acutilobus*, Siems. in Bot. Zeit. 1846, p. 709; Klatt, in Linnæa, vol. xxxiv., p. 581; *O. Helenæ*, K. Koch, in Linnæa, vol. xxi., p. 639.—Rhizome short, firm, tortuous, about ½ inch thick; relics of old leaves not splitting up into fibres. Basal leaves about half-a-dozen in a tuft, linear, falcate, glaucous, 3—4 inches long at the flowering time, ¼—⅜ inch broad, with a distinct pale membranous edge. Stem 2—3 inches high, one-flowered, with a single bract-like sheathing leaf. Spathe of two equal lanceolate acute greenish valves about 2 inches long, sometimes suffused with purple. Pedicel short inside the spathe; ovary cylindrical, ½—¾ inch long; tube about an inch long; limb, 2—2½ inch deep; falls decidedly smaller than the standards, oblong, acute, 1½ inch long, ½ inch broad at the middle, veined with purplish black on a pale ground, reflexing rather above the middle, so that the pilose lanceolate-deltoid claw rather exceeds the blade; standards oblong spathulate, erect, subacute, 2—2½ inches long, ¾—1 inch broad, deeper lilac; stigmas about an inch long, exclusive of the deltoid crests; anthers as long as the filaments.

Like the two last, a native of the Caucasus and mountains of the North of Persia. It is a well-marked species, showy, and suitable for pot culture. I have never seen living specimens, but as they have it in cultivation at St. Petersburg it will probably be reaching England before long. Botanically it is interesting as being the only species in addition to I. paradoxa, in which the outer row of perianth segments is smaller than the inner, but here the lamina is ovate and acute, and reaches a length of an inch, whilst in the other it is a mere rounded tip to the claw.

24. *I. filifolia*, Bunge, Rel. Lehm., p. 330; Walp. Ann., vol. vi., p. 54; Klatt, in Linnæa, vol. xxxiv., p. 592.—Rhizome short, ¼ inch thick, the fibres long and rather fleshy; relics of old leaves splitting up into fibres. Leaves about four in a basal tuft, subulate, ascending or falcate, ¼—½ foot long at the flowering time, half a line thick above the dilated base. Stem slender, terete, one-flowered, leafless, 3—4 inches long. Spathe of two nearly membranous, lanceolate acute valves, 1½—2 inches long. Pedicel very short, inside the spathe; ovary half an inch long; tube cylindrical, ¾—1 inch long; limb pale lilac, an inch deep; falls oblong-spathulate, bearded down the claw; standards oblanceolate, with a faint hairy line down the claw. Stigmas, including the crests, ¾ inch long.

Gathered by Lehmann in the desert tract on the east of the Caspian Sea. I have only seen a single indifferent dried specimen, and it has never been introduced into cultivation. It is a very distinct species, well marked by its dwarf habit, small doubly-bearded flowers, subulate leaves, and leafless stem. A plant gathered by Eversman in the Kirghis desert, described by Ledebour in the *Flora Rossica* under the name of Iris longiscapa, seems likely, judging from the description alone, to be the same species, but the common spathe is said to be three-valved, and to produce more than a single flower.

25. *I. falcifolia*, Bunge, Rel. Lehm., p. 329; Walp. Ann., vol. vi., p. 54; Klatt, in Linnæa, vol. xxxiv., p. 592.—Rhizome short, the radical fibres long and rather fleshy; relics of old leaves splitting up into fibres. Leaves three or four in a basal tuft, linear, as long as the stem, under ¼ inch broad, deeply channelled down the face. Stem terete, 6—9 inches high, slender, with a single bract-like leaf below the middle. Terminal spathe 2—3 flowered, consisting of 3—4 lanceolate acute valves, 18—21 lines long. Ovary cylindrical, ½ inch long, shortly stalked inside the spathe. Tube cylindrical, an inch long. Limb lilac, 1½ inch deep; falls oblong-spathulate; the lamina much shorter than the claw, which is bearded all the way down; standards oblanceolate-unguiculate, erect, faintly bearded, as long as the falls. Stigmas, including the crests, as long as the segments of the perianth. Capsule narrowed to both ends, acutely-angled.

Gathered by Dr. Stocks in Beloochistan, by Griffith in Affghanistan, and by Lehmann in the desert country on the east of the Caspian Sea. Closely allied to the last, with which it quite agrees in flower, but is more robust in habit, with a different leaf. This section, Hexapogon, is the only one of the nine not yet introduced into cultivation. *J. G. Baker.*

PLANT GOSSIP.

WE are informed that the group of handsome FANCY PELARGONIUMS, shown by Mr. James, of Isleworth, at the recent South Kensington show, were all worked on bottoms of the large flowering kinds. This is done when the stocks have several strong branches, and the result is found, not only in a more robust growth in the fancy kinds, but also greater longevity. The plants in question were about 3 feet in diameter, perfect in form, and finely flowered.

—— The pretty DOUBLE WHITE-FLOWERED AYRSHIRE BRIAR, just now in bloom, is a perfect gem amongst Roses. The foliage is small and pleasing, and the flowers, when half-expanded, are about the size of a pigeon's egg, and the *beau ideal* of a buttonhole flower. The various Scotch, Austrian, and Persian Briars, now too seldom found in gardens, are amongst the most charming of the great Rose family, wanting little cultivation beyond being let alone. A revival of these is well worthy the attention of rosarians.

—— Among the most beautiful, though least often seen, greenhouse plants is IOCHROMA LONGIFLORA. Its flowers are borne in umbels on long, pendulous, slender stalks, the individual flowers being about an inch and a-half in length, with a long cylindrical tube expanding above into a flat rotate limb. The colour of the flower is blue-violet. It is a most desirable plant, and flowers even in a small state, as may now be seen at Kew.

—— Amongst Lycopods we have seldom witnessed anything more effective than a large panful of SELAGINELLA ATROVIRIDIS, shown by J. Kershaw, Esq., at the recent Manchester exhibition. Its peculiar dark olive tint, and its glossy surface, together with the peculiar aspect of its slightly nodding blunt-ended tufts of branchlets, give it a very striking appearance, likely at once to catch the eye of a lover of plants. It was exceedingly well cultivated too, not having a speck or blemish about it.

ALPHONSE MAS.

WE are indebted to the Editors of the *Bulletin d'Arboriculture* for the use of the accompanying portrait of this distinguished pomologist, who, some years ago, was elected President of the Pomological Society of France, and ably fulfilled the duties of his office almost to the day of his death. Although in ill-health at the time, he attended the session of his beloved Society, held at Ghent in September last, from whence he returned to his home at Bourg, took to his bed, and only left it for the grave. For further details of the useful life spent by this amiable and distinguished *savant*, we must refer our readers to the number of this journal for December 18 last, p. 773.

WILD FLOWERS.

IT is often remarked that wild flowers do not grow well in a garden, and to some degree the remark is just, though not always quite to the extent supposed, for (without noticing what commonly pass under the name of weeds) there are many wild flowers which thrive perfectly in garden ground, still retaining the original characteristics without the special developments brought about by cultivation which seem to form the only tangible distinction between the garden flower and the wild flower in the garden. The frequent disappointments, however, do not always lie in the plant itself; it is hardly too fanciful a suggestion that something must be allowed for association of ideas. Many of the wild flowers brought home are the remembrance of a summer holiday when sunshine was bright, and work and care temporarily laid aside, and the chosen plant (which often would not have attracted especial admiration by a home hedge-side on an average day) falls far short of expectation when it reappears as a solitary clump in a formal garden border.

Some allowance, too, should be made for surroundings; the modest flowers of a large proportion of the wild plants attract little attention amongst the favourites of the garden, all selected for some special beauty, and often developed by a long course of culture, whilst the wild flowers take their place (at least at first) with all the disadvantages of checked growth and absence of the natural surroundings requisite for their full picturesque effect.

Spiræa Ulmaria, for instance, loses half its beauty in the absence of the wild leaves, which, in its natural habitat, conceal its bare leaf-stems, and protect it from the breezes which but too often send the whole plant bodily over in the garden bed. The Sea Pink, with its trim green cushion of leaves, and heads of pink blossom, never appears to such advantage as on some range of grey rock sloping down to a deep blue sea; and in the more showy flowers the yellow Cistus borrows a warmer glow, as it clusters down some broken bank, from the purple Thyme by its side; or the purple Foxglove, beautiful at all times, is still more so seen in a forest glade against a background of Oaks, golden in the sunshine, or with the yellow Broom close by.

Looking at a large proportion of the wild flowers admitted into our gardens, they might be described as self-dependent—complete for horticultural picturesque-

ness in themselves; but besides these old favourites, which often appear now as "garden flowers," there are many which only require a little care in moving and grouping to be useful additions to our collections. The nearer the natural course of growth can be copied, the more likelihood there will be of success; and though all used to the cultivation of plants know well what treatment to adopt to secure what they may wish to transfer in good order to their homes, it may chance that just now a few suggestions may bring a few more plants safely home in the hands of those who prize them all the more for it being but seldom they can have anything to do with them. If seed can be gathered off the plant itself this is perhaps the best method of securing it. A small quantity of seed, carefully chosen from well-ripened heads, may be sent home in a letter and sown at once (following whatever the teaching of the plant may be as to depth of burying), and will probably succeed much better than what is got (as is often the case) from a mass of seed-vessels of all stages of ripeness, carried in a pocket or knapsack and laid aside till spring. In a large proportion of cases the plant sheds the seed, as soon as ripe, on the surface of the ground; and the natural habit will be the best guide to follow artificially, only making allowance for the surroundings of leaves and low-growing plants in the wild state, being a shelter both from drought and light during germination, which will, in a state of cultivation, probably have to be imitated by a light covering with earth.

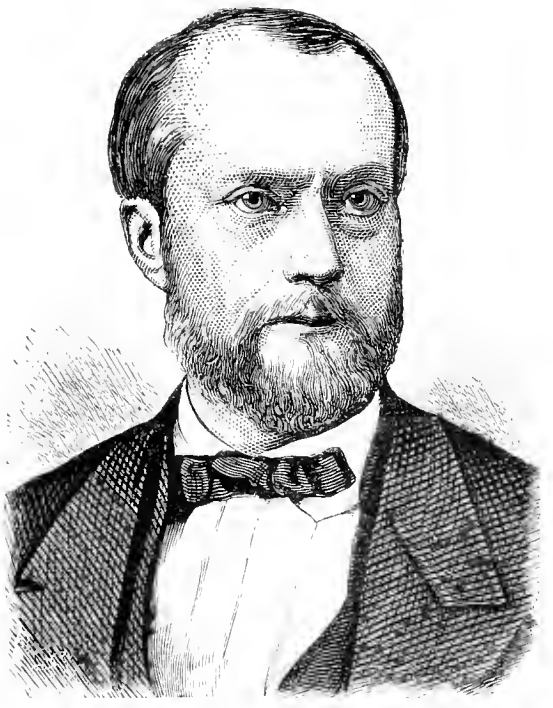
Bulbs or tubers preserve vitality for a long time, but the matter usually to be dealt with is the plant in full growth, when it unites the difficulty of removal in the flowering time (which has attracted attention to it), and in fine summer weather, to there being no proper means of digging it up, or preserving it afterwards till it can be planted.

All who have passed some time in a country rich in wild flowers will remember what is too apt to happen in endeavouring to secure some wished-for specimen. The plant, leaves and all, is gathered firmly in one hand and with a vigorous wrench—up comes something; possibly the root remains behind, but generally an inspection shows "a bit that may do," and this unlucky bit with a few damaged fibres is carefully wrapped in a morsel of newspaper, and in hat or pocket conveyed to its journey's end. Under this sort of plant gathering we often part with the special beauties, or at least the much prized rarities of a neighbourhood, without in the least benefitting the collector. If the tourist, instead, would with the large knife usually at hand gently separate the part of the plant he wishes to have, which should be a group of side shoots, or suckers, not what is then in full bloom, and cut round it in the earth so as to raise it with the fibres uninjured in the soil they grow in, and wrap this round with thin gutta-percha, waterproof, oil-silk, or something which is impervious to damp, the fragment would at least have a good chance of travelling safely. If, on the other hand, it is roughly dragged from the earth, the fibres are damaged to begin with, and afterwards suffer much from the paper they are wrapped in absorbing the moisture almost as if the specimen was designed for the herbarium, whilst the impervious wrapper preserves all necessary moisture for a short time. The plan of dipping the specimen each night in water is hardly an improvement, and possibly does more harm still by bruising the fibres, and soddening instead of feeding the plant. The coolest method of conveyance, and shortest absence from the ground, are most desirable but here, excepting in the way of letter or parcel, there is little choice to the pedestrian tourist.

When the plant is safely home it is often much better elsewhere than in the garden bed. A very small proportion of our wild flowers grow exposed solitarily to the sunshine on bare earth, and, where possible, some safe spot in a hedge bank, in the tangled outskirt of a copse, or in uncultivated grass, selecting what most resembled its original locality, would be far more likely to restore the plant than putting it at once, after all it had gone through, in an unnatural soil and situation. The hedge plants or grass will keep a damp atmosphere round it, invaluable to a recovering plant, and shade both roots and leaves from the sun better than any artificial shading admissible in the cultivated borders, whilst the fresh wild soil will also be beneficial.

In many cases a little of the suitable soil is easily procurable, and in country gardens, where there is often a bit of ground neither exactly garden nor uncultivated, the wild flowers may be made to play a useful part, by ornamenting, without the appearance of cultivation, the unenriched soil which they prefer, and which often is a dis-sight, all the greater from its contrast to the garden ground adjoining.

The wild flower *souvenir* of some excursion or friendly visit is more apt to suffer from excess of care than from neglect; it is so much prized it often cannot be left alone, and if placed where its progress cannot with convenience be so constantly observed, it will have a better chance of recovery, and with the re-appearance of its blossoms in something like the original situation the original feeling of its beauties, and the accompanying associations, will come back far more than if it was seen simply taking its place in the formal arrangements of a flower bed.



THE LATE M. ALPHONSE MAS.

Within the garden itself, where the amateur has no special plan of his own, it answers well to arrange some partly shady, partly sunny, nook, especially for the wild flowers. This should be well dug, and a little of different kinds of soil, such as peat, vegetable mould, and good garden soil placed in different parts, with a few of the masses of spoiled bricks known as "burrs" placed in various parts, to help in giving different heights to the soil where it is wanted raised, as well as in picturesque grouping. Here a foundation may be made of such favourite wild flowers as the Forget-me-Nots, Woodruff, Foxgloves, the evergreen Alkanet—invaluable both for its beauty and permanence of blossom, Meadow-sweet, Sea Pinks, Heath, Thyme, and quantities of others which will suggest themselves, whilst a few Ferns give points of sight for grouping to, and shade for damp-loving species.

In such a spot the plants once started will thrive, and need little care excepting replacing them, in the case of biennials and with the permanent ones, that they do not overwhelm each other, and the dry wall or wet ditch may be utilised and made ornamental similarly for Snapdragons and Stonecrops, or Elecampane and Meadowbolts.

The variety is endless, and (with consideration of the original habits) the difficulty of growing wild flowers is not so great as is often supposed. The real difficulty is in grouping and arranging them effectively. The established favourites in our gardens, adapted by careful cultivation for the needs of horticultural arrangement have a splendour and fitness of their own; their brilliancy and masses of colour, whether in the green surroundings of the country or the walled town garden, giving sunny brightness and cheerfulness to the parterre; but with all the delicacy and gracefulness of our wild flowers they will often be passed by in the garden as insignificant, and require much skill to render them really effective. *O.*

Foreign Correspondence.

NOTES FROM NORMANDY. — Considering the narrowness of the "streak of silver sea" which separates us from *la belle* France, it is almost startling to find how completely different everything is on the other side of it from what it is among ourselves. The language is perhaps the least remarkable of these differences, although at first one is inclined to echo the remark of the English tourist who entered in his note-book the astonishing fact that even the children in the streets spoke French like natives. But the change in speech is certainly less strange, because less sudden, than that which the tourist in North Wales notices as soon as he enters that Principality. In Normandy, however, houses, people, churches, roads, rivers, all and each have a character of their own. As for the churches, that, of course, is to be expected, on account of the difference in the faiths of the two countries; albeit the æsthetic churchman of modern times has certainly attained greater proficiency in the art of ecclesiastical ornamentation than is manifested by the sacristans of most French churches. These buildings are certainly in many instances very untidy, their pictures are not masterpieces, their altars are, to an English eye, tawdry; and there is an air of negligence about the larger buildings—such, for example, as St. Jacques, at Dieppe—which at first jars somewhat on the English taste, which is accustomed to regard a cathedral as a show place, in which scrupulous neatness is "the one thing needful." Yet, on the other hand, there is the evidence on all hands that these large rambling untidy old churches are really used by the people, not bolted and barred, except at stated times and seasons, but open from early morning until the evening *Angelus* rings out the dying day; and moreover frequented at all times by worshippers, who steal in in a quiet, business-like, undemonstrative way, put down their baskets, and after a little space go out again on their various avocations, none the worse certainly for the little break in the routine of daily life. Much might be said of the quaint ornamentations and odd figures of saints who lived a long time since but are always recognisable by their attributes, of St. Roch and his dog, St. Nicholas and the three children in the tub, and, less frequently, but still often to be seen, of St. Fiacre, the especial patron of gardeners, with his spade; of the suspended ships and other votive offerings, and of the tablets with their touchingly simple records of favours asked and received; but these things do not perhaps concern the readers of the *Gardeners' Chronicle*. But one point in the decorations may fittingly be noticed here, and that has reference to the flowers employed. True, artificial—what shall we call them?—compositions, which have the one advantage that they in no way infringe the Second Commandment, are painfully frequent, protected, too, under glass shades from the dust which might mar their brilliancy; but real flowers are employed with good taste and effect, one of the most popular being a shrubby single-flowered Chrysanthemum, probably C. grandiflorum, which is in great

request for church decoration, and harmonises very well with its surroundings. It is certainly strange that this plant, which is evidently held in great favour by our neighbours, is so unfrequent among ourselves. White flowers were in the ascendant at Dieppe when we were there a week or two since, for was it not the "Mois de Marie"?—and is not white appropriate for "La très Sainte Vièrge?" So her altar at Dieppe showed white Stocks, double Narcissus, Hoteia japonica, the afore-mentioned Chrysanthemum, and one or two bright little bunches of Forget-me-Nots—"Les yeux de l'Enfant Jésus," as the French prettily call it. A most striking decoration, by the way, was that which we noticed at Chartres two or three years since, where the large chapel of the Virgin was bright with large plants of Campanula pyramidalis, both white and blue, contrasting most effectively with the dark woodwork and gilded ornaments.

But it is time to notice some of the more strictly natural features which a flower lover will notice in Normandy, so we will leave the "dim religious light" and go farther afield. That wonderful structure, the *diligence*—surely so named on the *lucus à non lucendo* principle, will take us a good distance away from Dieppe, along the white, straight roads, with hedgeless fields on either hand, often bright with the crimson Clover or yellow Coleseed, and bordered with the long monotonous lines of tall Poplars, made taller by the barbarous stripping off of the lower branches, which seems the common French practice. After nearly three hours' ride, during which the chalky dust has poured in at windows, doors, and cracks (of which there are not a few), until we are powdered all over with it, we come back to the sea again at the town of Le Tréport, picturesquely perched at the bottom of a steep hill, and lying between the fine cliffs which rise abruptly behind it and those which flank the adjacent village of Mers. Here we alight, and hence these rambling notes are penned.

The cliffs at Mers are wonderfully rich in wild flowers. Here, at the end of May, the ground is thickly carpeted with the chalk Milkwort (Polygala calcarea), in its blue and pink varieties; the rich orange of the Horseshoe Vetch (Hippocrepis comosa) is beginning to show itself; the soft heads of the Kidney Vetch (Anthyllis vulneraria) are abundant, mixed with the handsome grey foliage of one of the Sea Hollies (Eryngium campestre). Any one who has seen the profusion with which this plant grows along the French coast must be struck with its rarity upon our own, where it could scarcely be claimed as a genuine native until its discovery, two years since, in Romney Marsh, Kent. It is not remarkable that so striking a leaf should have been employed in architectural decoration. It is so used on the west front of the church at La Charité, in Central France; and we believe we have seen it, though less characteristically treated, in other French churches. Other cliff plants at Mers are Papaver hybridum, one of the prettiest of Poppies, the peculiar crimson of the petals (which fall off about noon) contrasting very beautifully with the blue-grey anthers; and the fragrant little Orchis ustulata, which so curiously resembles in colouring O. purpurea that it might pass as a miniature edition of that species.

The woods on the cliffs beyond Mers demand a word of notice. They are composed mainly of oak and Beech, and their close proximity to the sea, and their exposure to the action of the wind, have combined to give them a remarkable appearance. The trees composing them average from 7 to 10 feet in height, and are all bent in one direction; those nearest the sea are often partly, or even altogether, killed by the exposure, but the remainder are hearty and strong, although in some instances of considerable age, and form a dense thicket, penetrated here and there by narrow winding paths. The one-sided appearance of some of these trees is excessively odd, and was especially noticeable in a Hawthorn tree, which had a nearly flat unilateral head, crowded with blossom. The undergrowth of those woods is astonishingly luxuriant. The Red Campion and Geranium sylvaticum, both in profusion, form a rich and striking contrast; Solomon's Seal (Polygonatum multiflorum) is one of the commonest plants; the Ramsons (Allium ursinum), a Doronicum, and a tall entire-leaved Senecio, besides Bluebells, Bugle, Stitchwort, and other common plants, with a profusion of Bracken and male Ferns, all combine to form an undergrowth of extraordinary richness.

Orchis purpurea occurs sparingly in these woods, but much more abundantly in the Forêt d'Orléans, near Eu. This very beautiful inland wood, which is reached through a tract of characteristically French country, in which Poplars and Willows are the principal features, affords good botanising ground; it produces Atropa Belladonna, Sambucus Ebulus, Hypopithys glabra, and, best of all, the above-named Orchis. It is a sight worth remembering when this, our handsomest British Orchid, comes before one in any quantity—the tall fine stems rising through the brushwood, with their beautifully mottled dark hooded flowers, form striking objects. The memorable storm of March 12 has left evidence of its severity in this beautiful wood: trees torn up by the roots, or twisted or snapped across, constantly meet the eye, and these in positions which seem sheltered from its rage.

There is often as much difference in the popular garden flora of certain districts as there is in the native vegetation. Two plants which were very conspicuous and abundant in the rustic bouquets which graced the market at Eu are worthy of especial note. The first is a double-flowered variety of the Ragged Robin (Lychnis Flos-cuculi), with blossoms of singular regularity; this is mentioned in an old Herbal as having been in cultivation in England in bygone days, but it is very rare now, if not altogether unknown. The other is also a double flower, it is a variety of Barbarea vulgaris, the blossoms of which are as large as those of a small double Wallflower; this is called by the French Rameau d'Or, and is a plant well worth growing. *B. M.*

The Villa Garden.

CARNATIONS AND PICOTEES.—Lest there should be any misunderstanding on the matter, let us state that when recommending the common types of Carnations and Picotees for border purposes in Villa Gardens, there was no desire to insinuate that the fine bizarre and flaked Carnations and edged Picotees are not suited for town gardens. Just the very reverse is the fact, for in many of the northern cities and towns there are to be found a number of ardent florists who grow the Carnation and Picotee for show purposes, and in crowded neighbourhoods, in the midst of a vitiated atmosphere and a smoke-blackened air, and actually produce beautiful flowers, with all their delicate markings set forth as distinctly as possible. What can be done in the town of Sheffield, for instance, is not difficult of achievement in the suburbs of London.

One of the foremost writers on the Carnation and Picotee (Mr. E. S. Dodwell) has always insisted strongly on the adaptability of the Carnation and Picotee for cultivation in London. Where the commoner kinds will flourish the finer varieties will thrive also; but they want and deserve more care. The season is now much too far advanced to obtain plants for flowering in July and August, but in the autumn and early spring some can be obtained. At the proper time directions for planting will be set forth.

DOUBLE ROCKETS.—Under this heading is included the double purple and the double white varieties. They are now in full bloom, and deserve to be ranked among the very best flowers a Villa gardener can put into his border. What a singular circumstance it is that while the slugs have such a strong *penchant* for the double white Rocket, they pass by the double purple variety, leaving it quite unharmed: at least this is what happens in our own garden. The double white has a somewhat delicate habit, while the purple form is of a more robust character; but plants of each that are established in the soil, and grown into size, flower with great freedom. They are now masses of bloom. The double white Rocket shows a much finer spike of flowers than the purple. Yet the colour of the latter is most desirable. The white form should be in a good and rather light soil during the winter, for it decays in a cold and wet one; the purple thrives in any soil, but it is always well to avoid a very wet one. The Rocket is like the Stock—it furnishes a good supply of cut flowers; the plant throws out a number of side shoots all of white flowers, and lasts a long time in a cut state. What is known as the double Rocket is also a very useful border flower, though it is not a Rocket at all, but just a double form of the common Land Cress, Barbarea vulgaris. The flowers are quite small and of a bright golden colour, thus the three form a good variety in point of colour.

The richer the soil in which the Rocket is planted, the greater will be the wealth of bloom it produces. During dry weather water is needed, or the flowers soon become scorched or shrivelled; a little manure placed on the surface of the soil round the plants is a great help, serving two important purposes—one being, when water is given, the particles are carried down to the roots, and furnishing valuable food for them; it also serves to keep the soil about the roots moist and cool longer than if it were without such a surface-covering.

This plant being so serviceable, and therefore so desirable, the question occurs—How can it be best increased? In a very simple way, is the reply. In addition to throwing up the flower-stems, it also puts forth a number of side-shoots, the quantity agreeing with the strength of the plant. If some fine rich soil be piled up about these, so as just to cover the stems of the shoots at the point where they spring from the main stem, they will soon throw out roots that will grow into the soil, and so form nice plants for planting out in autumn.

TOMATOS.—A piece of bare wall, caused by the decay of nearly one-half of an Apricot tree, had an unsightly aspect, and we have now planted against it some Tomatos. By doing this, the ornamental and useful can be happily combined. We have made use of two varieties, viz., Hathaway's Excelsior, which bears large red fruit, and Carter's Green Gage, with small golden apples, furnishing an excellent contrast to the former. Really, the Tomato is a much more ornamental plant than people imagine when it grows into size and ripens its fruit. They come in very useful in the kitchen, and some are fond of eating the fruit in an uncooked state. Now is a good time to plant out Tomatos, giving them a south or west wall and a good soil, for they grow very strong indeed, and need plenty of sustenance for their support. In dry weather plenty of water will be required at the roots, and sprinklings overhead also.

Tomatos make a vigorous growth, and it is necessary that the shoots be thinned out. All the wall against which they are growing should be covered with shoots as far as it is possible to do so, fastening them to the wall by means of a nail and shred. Then when these shoots show blossom the points should be pinched out, so as to assist in maturing the fruit. It is a simple matter so to lay in the shoots of the plant as to have a nice surface of fruit, and then the general growth of the plants will need to be kept pinched back, so that the energies of the plants may be devoted to swelling the fruit. An abundance of fruit, either green or ripe, can thus be obtained all through the season, either for pickling, preserving, or for sauce.

STOCKS AND ASTERS.—These, if newly planted out, will need some attention while the weather keeps dry and hot. A great many of the complaints made about the indifferent quality of Stocks and Asters results in a great measure from inattention when planted out, as they get a starved appearance through want of moisture at the roots, and then fail to break into a strong growth, under which circumstances the flower will be small and poor. A little attention now in the way of watering the plants, and keeping them growing by stirring the surface soil and keeping it clean, will cause the plants to break into a vigorous growth, and produce fine flowers.

MARIGOLDS.—Those who grow a few of these should give them the attention recommended in the case of Stocks and Asters. Marigolds are now much grown for show purposes, and that is a reason why they are cultivated. It often happens that the first flowers thrown up from the centre of the plants come single. Let them be pinched out, for a good strain of Marigolds will produce fine double blossoms. Sprinklings overhead will be of great service to the plants in dry weather, as indeed it is to most plants in early summer.

Garden Operations.

PLANT HOUSES.

GREENHOUSE HARD-WOODED PLANTS.—Azaleas.—Most of the latest-flowered Azaleas will now be over, and, if not already done, should have their seed-pods removed. These should never be allowed to remain on the plants after the flowers fall, as they directly interfere with the formation of the young wood, for immediately fertilisation has taken place the seeds begin to form, which seriously taxes the energies of the plants if allowed to remain, even for a week or two. The plants should be closely examined, to see if they are free from thrips, especially if these little pests had possession of them last season, for in this case, unless effectual means have been taken to destroy the eggs deposited upon the leaves in the autumn, they will have come to life ere this, and if not killed will quickly spread over them, so as to

infest almost every leaf to their certain injury, so far as to preclude the possibility of their flowering in anything approaching the way they are capable of. It frequently happens that an attempt is made to keep thrips down by the use of the syringe alone; but, much as Azaleas like moisture when growing, they may be syringed to an extent that will rot their roots without keeping the pests sufficiently under. The majority of growers resort to fumigation to destroy these insects; and where the growth is of a hard stunted description little injury may follow, but where the plants are free and vigorous I never saw the thrips killed without the leaves suffering more or less, and although washing with tobacco-water in the manner I have before described entails more labour, still it is the best remedy. I consider it necessary from time to time to revert to the all-important subject of keeping Azaleas free from these diminutive yet highly injurious insects, for if in all other respects the cultivation is everything that it should be, if the leaves are allowed to get infested to any considerable extent with these or red-spider, it is impossible to get them to bloom satisfactorily; not only are the growing powers of the plants seriously impaired for the ensuing year, but the size and colour of the flowers is so much affected that in many instances, except with the most distinct kinds, they are scarcely recognisable when placed beside those produced by thoroughly clean grown plants. Where Azaleas have the year previous been affected by red-spider this is almost certain to infest them again, and should be diligently sought for, or it will do serious harm before it is detected; neither can it well be eradicated by syringing with water alone, on account of the density of the leaves, and the difficulty of getting to the plants all round. If about 2 oz. of Gishurst is added to the tobacco-water recommended for the destruction of the thrips, and the application is thorough so as to reach every part of the leaves, and allowed to dry on, and the usual syringing with water withheld for a few days, in all probability little inconvenience will be experienced through the season. Of all the greenhouse plants in cultivation there are none so manageable and that can be used in so many ways as Azaleas, both for cutting, for general decoration, or where required for exhibition. With a judicious selection, and a sufficient number, they can be had in bloom for the greater portion of the year.

HEATHS.—The April and May flowering Heaths will now have done blooming. Let the seed-vessels at once be picked off, or they, too, will be needlessly weakened in forming seeds. I am by no means an advocate for potting these plants in the hot summer weather, having repeatedly proved it to be much better done either early in spring—before the hot, parching weather comes on—or deferred to the cooler days of autumn; still, in cases where young, vigorous-growing specimens show unmistakeable signs of suffering if not allowed more room, it will in some cases be advisable to at once shift them, but when these plants are potted at this season it is necessary to make some provision for them in respect to the atmosphere of the house or pit in which they are stood for a few weeks, until the roots have had time to move. If a low lean-to pit can be made available it will be much better than a lofty light house, as the atmosphere in the former can be kept much more close without the temperature ranging so high as in the case of a house where there is much glass exposed to the full action of the sun. Shading must be resorted to, and all the air given should be by tilting the lights at the back; in this way there will be no direct current of air through them. See that the balls in all cases are well moistened before removing them from the pots they occupy; if any doubts as to this exist, give enough water to make sure of its permeating the whole; this is even more necessary than early in the season. Epacrises that were cut back some time ago after flowering, and have since broken freely, should, where required have larger pots, treating them afterwards similarly to the Heaths. *T. Baines.*

ORCHIDS.—The sphagnum moss in which such things as Aerides, Vandas, Saccolabiums, &c., were potted in the early spring, providing it was used in a fresh state, will now be green and growing. This is a condition that should always be kept in view, for although in itself it may be considered only of secondary importance, it will nevertheless be found that where the moss lives and thrives the soil must of necessity be sweeter and fresher, and therefore in a better condition for the roots to grow and spread in than where the moss, which at the time of using may have been in a perfectly satisfactory state, has been permitted to gradually pass from this condition to one of deadness, and therefore of decay. When moss turns sour, and becomes infested with fungus—whether the white, spreading, thread-like form, which is the one usually to contend with, or the black, hairy, and in some cases silky form, which spreads more quickly, is far more destructive, and is much more difficult to get rid of—it is then harmful to the plants, and annoying and also disgusting to the grower. If any plant should be in the state described, let not a day be lost in taking it out of the pot, or basket, cut away all parts that may have become decayed, and with clean warm water wash every part, being very particular where the divisions of the roots occur, and also where the roots start away from the stem. The pot and crocks should be broken up and thrown clean away, so that there may not be the means of spreading the fungus to anything else; then with a clean pot and fresh material pot the plant carefully, and for a few days give but a small quantity of water, that all inducements to another evil in the shape of rot may be prevented, and thus a fresh start will be given with every prospect of ultimate success. Time was when in many an establishment the moss was steeped in scalding water before it was used, the idea being that a number of insects and eggs would almost be sure to be in the moss, and the sudden immersion would inflict upon them certain death, and, therefore, the soil would be less likely to harbour vermin of any sort. The death of the insects would be pretty sure, but it is very doubtful whether plants potted in such a compost would be freer from insects than those where fresh-gathered moss is used. At the same time it must be obvious to most that the insects that are so destructive are already in the houses, and are not, as a rule, brought in by the soil that has been used. The ill effects of woodlice, slugs, and cockroaches are too well known to require any special mention; each and all must be got rid of, the two first by careful inspection, pieces of Potato laid on the plants, and regularly looked at; whilst for the latter there is nothing, as far as my experience goes, like the poison known as "magic paste." This should be laid on pieces of glass, or on any part of the stages, or the rim of the pots; and since the vermin are sure to be attracted by its bright, shiny appearance by night, however small a quantity is eaten the result is certain death. The surface of the pots of the East India plants may be made gay with several small growing stove plants that will add considerably to the beauty and interest of the plants. Bulbs of Dendrobiums may be pegged down, and by being continually moist will soon throw out young roots, and in a short space of time the dormant eyes will, in many cases, burst into new growth, which shoots, by the end of the season, will have formed nice plump little bulbs. These should remain on the pots till the usual potting time in early spring, when they may, if it is desirable, be taken off and placed in pots or baskets according to their size or number. The small-leaved Begonia Thwaitesii in its different varieties, the compact, close growing Selaginellas, Droseras, whether rotundifolia, capensis, or longifolia, should be made use of and planted on the surface of the soil, the variety of foliage and interesting objects adding much to the beauty and interest of the collection, and taking away some of the hard, monotonous appearance a stage of plants is likely to have, the more especially if the leaves are but poorly represented at the lower part of the plants. *W. Swan, Fallowfield.*

FRUIT HOUSES.

VINES.—With a continuance of the present dry weather Vine borders outside, which have been efficiently drained, should be examined, and, if necessary, well watered. There is no doubt that in many cases serious evils result from the want of timely attention, as the roots, not finding the requisite amount of moisture near the surface, are forced downwards to obtain this necessary of existence. Borders, therefore, which from the porosity of the soil or drainage are liable to dry quickly should be lightly mulched during the whole of the summer, and water applied liberally when necessary. Where heavy crops of fruit are grown a stimulant should also be occasionally given in the shape of liquid manure. Guano, if pure, is (next to the drainings from the farmyard) the best, and may be used dry, but is more advantageous if dissolved in the water a few hours before using—about 3 oz. to a gallon of water for each square yard of border, afterwards washing in with treble the quantity of clear water. Of course it will be understood this only applies to borders in which the roots are under control within a given space, and not to old Vines, whose roots may for years have been spreading unrestrained and unaided. Continue the routine of operations given in previous Calendars. Give air liberally in all favourable weather, opening and closing early. Fires may now generally be dispensed with, unless just to warm the pipes or flues where Grapes are ripening, when a little heat put on in the evening will admit of a more free circulation of air being kept on during the night. Vines from which the fruit has been cut may be well syringed daily, and every precaution taken to keep the foliage in a healthy condition, so as thoroughly to mature the wood. The house should be kept open night and day, as otherwise a close and moist atmosphere may induce the buds to break prematurely. Where it is desirable to introduce other kinds of Grapes in established houses without the necessity of planting, this may now be done by inarching. For this purpose select young healthy plants of the present year's growth and of the kinds desired. Place the pots in position so that the young rod can be easily brought in contact with a suitable shoot on the permanent Vine, and as near the base as possible. Then with a sharp knife take off a very thin slice of the outer bark of both scion and stock where the junction is to be made, afterwards cutting a slice or tongue in the scion upwards and the stock downwards, and having carefully inserted one in the other, tie firmly with bass or rofia. Tie up the leading shoot of the scion so that it will get a due amount of light, and give frequent attention to watering the pot plant until the junction is effected, but do not cut away the plant until the winter pruning. Inarching should be done when the wood of stock and scion are in an equal state of maturity—that is, when moderately firm before the wood begins to harden or brown. It is best to work on a Vine of the same colour as the scion—a black Grape worked on a white one does not always colour well. *W. Cox.*

ORCHARD HOUSES.—As hot, dry, summer weather has now set in the watering of the trees in pots must not be neglected, as well as the syringings once or twice a day, according to the state of the weather. The trees in the earliest forced house, if the fruit is all gathered, may now be set out-of-doors in some warm, well-sheltered corner, where they will require less water and ripen and harden their wood better than in the house. They should be placed on ashes or some hard gravel walk, to prevent worms from entering the pots. The trees in the unheated houses will now be growing vigorously and swelling their fruit; and any thinning done must only be partial, leaving the final thinning until the stoning period is over. Keep pinching in the strong and ill-regulated shoots, so as to form in the Peach and Nectarine trees as symmetrical a pyramid or bush shape as possible. When Strawberries are grown on the shelves they are often attacked with mildew and red-spider, and ought to be removed out of the house as soon as the fruit is gathered. If taken out of the pots and carefully planted out in rows in the open border, there is no better mode of cultivation of the Strawberry to produce a fine crop for a year or two afterwards. In planting them out they often suffer from the soil not being pressed hard against the balls, so that, when watered, it does not enter them, to keep the foliage from flagging until they begin to make roots in the old soil. In planting them out, therefore, the soil should be firmly rammed round the balls, leaving a rim of the old soil round them to keep the water where it is most wanted. *William Tillery.*

HARDY FRUIT GARDEN.

From the great scarcity of rain for some time it will be necessary to look over newly planted fruit trees and give them a liberal application of water; look also to the mulching, and renew it necessary, as it should be of sufficient thickness to prevent evaporation. The weather too has been very favourable to insect development, and calls for a corresponding amount of care in keeping it under. We should always remember that upon the free and healthy development of the growth at this season the chances of next year's crop will depend; every effort therefore must be used to keep it all clean by constant and powerful syringing. Cherries are particularly liable to have the young tips of the shoots covered with black-fly; as soon as this is perceived the shoots should all be pinched back to the healthy leaves, but leaders and shoots requiring to be nailed in on the walls must be left as long as the growth will allow, with the exception of very gross shoots, which may either be entirely removed or very severely pinched back. In regulating Apricots lay in a sufficient supply of wood to keep the trees well furnished, and pinch back all the rest, so as to retain a fair supply of foliage all over the trees. As a rule it will be found that trees with a good supply of leaves all over will produce finer fruit than where defoliation is too severely carried out; towards the ripening period, however, the fruit may be gradually more exposed to the sun by the removal of some of the leaves which shade it. The principal attention required by Peaches and Nectarines will be constant syringing, nailing in the young growth for future crops, and timely removal of all superfluous growth. Pyramid, espalier, and cordon-trained trees must have immediate attention paid to the pinching back of all the young growth, since the longer this is delayed the less chance will there be of the roots being so much influenced by checking the growth as to induce the formation of fruit-buds. In pinching back bush-formed fruit trees always remember to keep the centre well opened out. It is a good plan at this season to go over the Raspberry plantation and cut out all weakly shoots in the rows, and pull up all suckers which intrude on the space between the rows. Fig trees will now require attention in stopping to about four joints, all suckers should be removed, and if likely to be dry at the roots a good supply of water will very much assist the swelling of the fruit. *John Cox, Kelloe.*

THE

Gardeners' Chronicle.

SATURDAY, JUNE 17, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	June 19	Coventry and Warwickshire Floral and Horticultural Society's Exhibition.
TUESDAY,	June 20	Sale of the late Mr. H. Smithes' Collection of Orchids, at Stevens' Rooms (and following day).
		Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M.
WEDNESDAY,	June 21	Royal Botanic Society's Summer Show.
		Fareham and South Hants Horticultural Society's Show.
		Spalding Horticultural Society's Show (two days).
FRIDAY,	June 23	— Exeter Rose Show.
SATURDAY,	June 24	— Reigate Rose Show.

THE question as to whether PLANTS GROW most by DAY or by NIGHT is one which has come to the surface once more in connection with the Exhibition of Scientific Instruments at South Kensington. In that collection are shown various forms of apparatus for measuring and recording the rate of growth in plants, and of these a description has already been given in our columns. The matter is one which concerns practical gardeners quite as much as it does physiologists, for upon its proper solution depends the proper regulation of the heat and moisture of forcing and other houses by night and by day respectively, and the amount of water to be given or withheld in different cases. We need, therefore, make no apologies for again adverting to the subject. The problem is a very complex one, and not so easily resolved as might at first be imagined. It would be easy, any gardener might think, to ascertain whether growth is greatest by day or by night, but in the first place it is necessary to determine whether what is considered to be growth is really such—that is, increase in new matter, or whether it is merely extension of already formed substance—mere stretching of previously formed tissue without addition of weight.

In the next place, supposing growth in the sense just explained to be unquestionable, what does that growth depend on? Is it due to the action of light, of heat, of moisture, or of all three combined? Or, on the other hand, is growth checked or arrested by any or all of the conditions just mentioned? A little consideration of the complexity of the problem thus offered for our investigation will show how difficult so seemingly easy a problem is of determination. And this is further borne out by the conflicting statements that have been made by various good observers from time to time. It is fair to add, however, that the majority of these observations were made in a more or less rough and imperfect manner, before the invention of apparatus of precision such as are now in use, especially in Germany.

Without going into detail, which would be out of place here, we may briefly class the results of recorded observations under two heads, according as they support the notion that plant growth is greatest by day or by night. That plant growth was greatest by day was asserted in the case of Fourcroya gigantea by VENTENAT, in 1793; by MEYER in 1828, in the case of Amaryllis Belladonna, and in the leaves of Wheat, Barley, and Oats; by HARTING in the case of the Hop; by MARTINS in Agave americana. In some experiments made at Chiswick, and recorded in LINDLEY'S *Theory of Horticulture*, it was found that the plants under examination grew as fast by night as by day in a stove, where a high night temperature was maintained, but when placed in the open air diurnal growth was more than double that by night. RAUWENHOFF'S observations gave the result that the greatest mean growth is greater in twelve hours of the day than in the same number of hours of the night.

On the other hand, increased growth by night, as compared with that by day, was noted by MULDER in 1829, in the case of Urania speciosa. MARTINS found the growth of the inflorescence of Dasylirion glaucum greatest by night, the reverse of what he had observed in the case of Agave americana. DUCHARTRE, from whose paper in the Journal of the Central Horticultural Society of France we extract some of these details, observed six plants thrice a day—at 6 A.M., noon, and at 6 P.M.—noting also the temperature in the shade, and he found in all six cases that the night growth was most considerable.

We might cite many more observations, and in particular the numerous observations made in India by WALLICH and others on the growth of the Bamboo; but it is not necessary for our present purpose to do so. The reader desirous of consulting more fully what has been written on the subject will find a list of memoirs on the subject in BROWN'S *Manual of Botany*—a list that might be considerably extended.

We have said sufficient to show that the time has not yet come for any absolute statement to be made on the subject. Such being the case it is natural to find physiologists like SACHS endeavouring to simplify the problem by eliminating, so far as possible, varying conditions, or reducing them to uniformity. SACHS, indeed, says that "from the extreme changeableness of the weather the plant will sometimes grow more quickly by day, sometimes by night;" and this is exactly what we found in the case of the inflorescence of Tritoma last autumn. To overcome this obstacle, SACHS has grown plants in a uniform temperature, and with the amount of moisture and of light the plant received regulated. The leaves of Ferns and of Dicotyledons, say SACHS, soon cease growing in the dark; and these observations show clearly enough that different cells and organs are differently affected by light as respects their growth. This conclusion is borne out by Mr. BENNETT'S observations on the growth of Hyacinths and Vallisneria. Indeed, in the case of the inflorescence of Agave and of Dasylirion exactly opposite results were, as we have said, obtained by MARTINS, a very competent observer. The general result of SACH'S own experiments tends to show that the more constant the temperature, darkness, and moisture, the more uniform the growth. This is, of course, just what might have been expected.

Increase of temperature, continues the same eminent observer, other conditions being equal, promotes growth, lowering of temperature induces a decline. If the temperature varies slightly, while the light changes normally from morning till noon, and then declines to evening till darkness is reached, then, says SACHS (and this is most important from a gardening point of view), then the greatest amount of growth is always from evening till sunrise. The greatest amount of growth under such circumstances is registered about sunrise, the least about sunset.

So stands the case at present, so far as the physiology of the matter is concerned. We are far, however, from thinking that the last word has been said, or that Professor SACH'S conclusions are to be considered absolute. That the plant by the aid of sunlight feeds by day is undisputed, but the result of that food in the shape of growth and increased weight may not be obvious till night. Again, just as the greatest amount of growth is in spring, and the "ripening of the wood" or the consolidation of the tissues is greatest in autumn, so it may be that while actual growth is greatest in the darker half of the twenty-four hours, when the temperature is also lower, consolidation may be more active in the lighter, hotter hours of the day, when evaporation of superfluous moisture is also greatest. Again, although we may see a Potato sprouting in a dark cellar, and sending out an elongated and attenuated sprout, we can hardly look upon that as growth. It is extension merely; the weight of the whole plant is not increased thereby. It will probably, even, be diminished by the evaporation of watery vapour. LINDLEY (*Theory of Horticulture*) has this pertinent remark:—"Plants will, no doubt, lengthen very fast at night in a damp heat, but what is at this time produced seems to be a mere extension of the tissue formed during the day. Plants become 'drawn;' the same quantity only of material is extended to a greater length, as in the elongation of a wire." LINDLEY, therefore, favours the notion that no growth, in the proper sense of the term, takes place at night. But this statement is, as it seems to us, too absolute in its way, and inconsistent with facts observed in the lower Algæ and other plants.

A final solution of the question, making clear what is the precise effect, one way or the other, of a certain amount of light, heat, and moisture separately and in combination, on each organ of the plant in its growth, is a desideratum which we may hope and expect the instruments of precision will go far to supply; but the results so obtained must always be controlled by observations on the living plant as a whole and in a more natural condition than in the laboratory of the physiologist. None have so many opportunities of observing the phenomena of growth and what promotes, what retards them, as the gardener—to none are the results more vitally important.

—— WE again take the opportunity of bringing under the notice of our readers the fact that the thirty-third anniversary dinner of the GARDENERS' ROYAL BENEVOLENT INSTITUTION takes place on the 30th inst., at the Albion Tavern, Aldersgate Street. The chair will be taken by Dr. HOGG, who has opened a subscription list, which Messrs. SUTTON & SONS have headed with a donation of £50. We need scarcely add, as we have done before, that contributions to the dinner in the shape of flowers and fruit will be very acceptable.

—— We learn from a recently received despatch from Her Majesty's Charge d'Affaires at Lisbon that the fields near Elvas, and the land on the right bank of the Guadiana, were invaded, about May 18, by large numbers of locusts from Spain, where also they are said to have been causing great damage. The Superintendent of Cattle at Portalegre, who was sent to Elvas to devise the means of opposing this invasion, reports that he found that the locusts were all of the same species—that they had come from the banks of the Guadiana in a direction from east to west. Great numbers have been destroyed by the peasants, by the pigs, and by the birds. The area the locusts occupy in that district is not less than 15 kilometres (from 7 to 8 miles) in length, by 3 (nearly 2 miles) in width; and the value of the crops they have destroyed is considerable. The *Diario de Noticias* of May 30 reports that between the 26th and 27th inst. 1097 kilogrammes (about a ton) of these locusts were brought in by the peasants to the authorities, who paid 40 reis (2*d.*) per each kilogramme (about 2½ lb.).

—— Dr. HOGG has published in a greatly improved form his NEW CLASSIFICATION OF APPLES (*Journal of Horticulture* Office, 171, Fleet Street). In its present form it will be much more readily available for use than before, and its merits can be more satisfactorily tested when the proper time comes round again for so doing.

—— We learn from Messrs. OTTOLANDER & SON, Boskoop, Holland, that the new TOUGHENED GLASS for horticultural purposes may be obtained from Messrs. J. VAN ZANTEN & Co., at the Hague. The Messrs. OTTOLANDER state that they intend to use it in future, as, though it is dearer now than the ordinary glass, it is cheaper in the end.

—— We are informed that at the meeting of the HORTICULTURAL CLUB on Wednesday last, the following gentlemen were admitted members:—Messrs.

Fig. 143.—Bomarea Caederi.

Charles P. Wheatshire, Arthur Francis Dickson, William E. Rendle, Nicholas Voice, and John Cranston. Other names were submitted for election, and several additions to the library, both by gift and purchase, were announced.

—— We have received from the New Plant and Bulb Company, Colchester, cut flowers of several very handsome LILIES, which well deserve to become popular. First amongst them is L. Krameri roseum, the large funnel-shaped flowers of which are delicately stained with rose. L. Szovitzianum, with its clear yellow lightly dotted flowers, is also very beautiful, and seems to have the vigour requisite for a border flower. L. callosum is a charming little plant with reflexed vermilion flowers, about half as large as those of the similarly formed L. carniolicum, in which the colour is more orange-tinted. Finally, L. pulchellum, with erect vase-shaped flowers, deep scarlet spotted near the base, and slender in habit, is very distinct and attractive. With these came flowers of the lovely Calochortus venustus, one of the most lovely of Liliaceous plants.

—— Messrs. JOHN WATERER & SONS' EXHIBITION OF RHODODENDRONS at Manley Hall, Manchester, which is now open to the public, occupies a tent 130 feet long by 70 feet wide, and is covered by a gable-ended roof in three compartments. The plants are arranged in formal beds, on the ground level, without undulations of surface.

—— We are glad to learn from the secretary to the MANCHESTER ROYAL BOTANICAL AND HORTICULTURAL SOCIETY that the show held by the Society during Whit-week, in its ornamental garden at Stretford, has, despite some bad weather, and much competition for the suffrages of the sight-sceing public, proved again to be a success. The Society is gradually relieving itself of that depressing incubus—debt; and with very little further effort will, there is reason to believe, find itself free.

—— The memorial to the late Mr. JOHN STANDISH, for which a subscription was opened some months since, has taken the form of a portrait, which is now completed, and has been suspended in the meeting-room of the Royal Horticultural Society at South Kensington, in company with those of Mr. DIX, Mr. RIVERS, and Mr. VEITCH, all earnest workers in the same field with himself. The portrait—a recognisable likeness—faces that of Mr. VEITCH.

—— The CRYSTAL PALACE ROSE SHOW, announced to be held on the 16th and 17th inst., was postponed early in the week, owing to the lateness of the season.

—— There is now flowering for the first time in England, in the garden of J. T. PEACOCK, Esq., Sudbury House, Hammersmith, a fine plant of what is known as YUCCA CALIFORNICA, a plant the botanical status of which is not quite settled. We shall shortly introduce a figure of this specimen, and hope to be favoured with Mr. BAKER'S description of the plant. The flowers are star-shaped, cream-coloured, in a closely set panicle of some 8 feet or more in height, the leaves being gracefully arched and about 2 feet long. The plant was introduced from California in 1860.

—— In some experiments recently made by M. CORENWINDER, and recorded in the *Comptes Rendus*, that physiologist concludes that plants have not only the power of acquiring CARBON by the absorption of carbonic acid gas by their LEAFY SURFACES, but that they have also the power of assimilating it from the carbonic acid which circulates in their tissues; thus confirming an experiment of DE SAUSSURE'S, who having placed a leaf-bearing branch in a glass globe from which carbonic acid was excluded, found that the contained air was nevertheless rich in oxygen gas, when exposed to the light.

—— One of the most interesting exhibits at the recent Manchester show, and to which we but briefly adverted at p. 766 was a GROUP OF SARRACENIAS from the garden of J. FILDES, Esq., of Chorlton-cum-Hardy. They were small plants, but remarkably well coloured, and had the appearance of having been well cared for. The group consisted of Sarracenia psittacina, of a bright veiny red, and quite covering with its pitchers the top of the pot and soil in which it was growing; S. variolaris, with about twelve pitchers; S. flava maxima, with seven pitchers, remarkable for their large red-veined lid; and a new variety of S. flava, imported with it, but much superior to maxima—the pitchers being larger, more freely veined with red, and having a broader and rounder lid, the tubular portion also being more conspicuously veined; the plant of this fine variety bore three ample pitchers. The collection also contained a small but healthy plant of Darlingtonia californica.

—— The beds of hybrid AZALEAS in the pleasure grounds at Kew are now in full beauty, and, with their background of rich fine foliage, are very lovely.

—— We failed last week to note, in our report of the Royal Horticultural Society's exhibition at South Kensington, the presence of a number of examples of the fascinating little IONOPSIDIUM ACAULE, which were sent up from the Society's garden at Chiswick. The plant is such a little gem in its way that we wonder at its limited cultivation. It seeds freely, and if sown in spring, and subsequently pricked out into small 48-sized pots, and grown on in a cold frame, it will produce such fine tufts of delicate green leaves and clear lilac flowers as cannot fail to please. In a moist place on the rockery it will reproduce itself, and, indeed, will do well in any shady position.

—— The unusual lateness of the season has had a marked effect upon the hardy SPRING FLOWERS and flowering trees and shrubs in the London parks. Here we are, almost in the middle of June, and the May, or Hawthorn, of which each of the public parks contains such a fine variety, is only just going past its best. Right well the fragrant Hawthorns have flowered, notwithstanding the unfavourableness of the weather, and especially fine has been the display in Kensington Gardens. Another effect of the cold, dull, and ungenial weather has been the prolongation of the blooming season of the hardy spring flowers. A perambulation through BATTERSEA PARK a few days ago revealed the Violas, Aubrietias, Iberis, &c., in a full blaze of beauty, and we have no doubt the spring bedding near the west entrance is still bright and attractive. The long radiating beds near here, which in summer are always such a great source of attraction, are particularly gay just now with Violas, Pansies, and Aubrietias. The latter is used principally for the outer band, and the only variety grown is A. purpurea grandiflora, which is, perhaps, the finest and most useful of all spring bedding plants, its hardiness, neat habit, floriferousness, and soft colour, rendering it quite indispensable in every combination. Of the Violas, the Tory is a very bright blue, and well spoken of. A bed of this edged with V. lutea Grieveii was very showy. To the last named Mr. ROGER accords much praise, and it is doubtless the best sulphur-yellow that we have got; while amongst Pansies Dickson's Golden Gem proves here to be the best of all. The Cliveden Purple and the old Cliveden Blue each maintain their high reputation; and Blue King, which is a shade darker than the last named, is found also to possess the merit of standing bright sunshine well. In other parts of the park the summer bedding out is being pushed on vigorously now that the weather permits, but with something like a quarter of a million to put out, it is clear that this will not be finished just yet. The trees and shrubs in the belts have made a very poor growth so far, and present generally a very starved appearance, though here and there one comes upon a choice subject more happy than its fellows. One of these is that fine Lilac, Syringa Josikæa, whose foliage stands out so boldly and distinctly, and whose pale lilac flowers, if not so sweetly scented as those of the common variety, are at least as welcome in the shrubbery. The Horse Chestnuts have been flowering very well, but the standard Wistarias, which are generally such a bright feature when in flower, have suffered too much from the east winds to produce many blossoms this year. In the subtropical garden nothing is more striking at present than the lines or masses of Funckia subcordata, whose bluish glaucous green foliage, especially on undisturbed plants, is bold and handsome in the extreme. F. grandiflora, which has blossoms resembling the Eucharis, and comes into flower in the autumn, is highly appreciated here. Mr. ROGER has adopted the plan of planting them like Irises in clumps on the grass with very happy results, they show up so much better. Alpine Point has been greatly improved by the removal of such of the dwarf plants planted on it as had overgrown their position; and near here the Cow Parsnip, Heracleum giganteum, well asserts its claim to be considered the finest of water-side plants. On the rockwork a pretty bit of colour is furnished by the sweet, rose-coloured flowers of the old Cheddar Pink, Dianthus cæsius—a rock plant *par excellence*, which should be much more grown than it is.

—— We are sorry to learn, by telegram addressed to a private friend, of the death of Mr. MCIVOR, at Ootacamund. To the labours of this gentlemen the successful culture of the Cinchonas on a large scale in the Neilgherry Hills is mainly due.

—— In one of the stove-houses at Kew may now be seen in a fruiting state PSYCHOTRIA ULIGINOSA. It should be looked for by gardeners, by reason of its bright red berries, of the size of a small hazel nut.

—— LEONARDSLEE, near Horsham, in the county of Sussex, the seat of W. E. HUBBARD, Esq., is famed in autumn and winter for the fine Apples which it sends to the London and other exhibitions. The place is at all times famed for the beauty of its situation, the views of water and woodland from the garden front being particularly good. The pleasure grounds are somewhat extensive, and interesting from the number of fine specimens of the best varieties of Conifers which are found doing remarkably well in a stiff yellow loam on chalk. There is also here a charming American garden, which has been made on one side of a long thinly-wooded slope which leads down to a sheet of water. Here, almost on the rock, the Rhododendron thrives amazingly, and the show of bloom at the present time is one of great beauty; the scene altogether is charming. The Rhododendrons are much later this season than usual, and many varieties are over; but the finer hybrids, the grand scarlets and glowing crimsons, contrast most strikingly with the sombre green of their own foliage, and the varying tints of the many other choice trees and shrubs which the American garden contains. The few warm days we have had lately have done wonders in improving the appearance of vegetation generally, and many choice things have rapidly come into bloom. Several fine specimens of Paulownia imperialis are in bloom, including one which is 40 feet high and 60 feet in diameter. There is also a fine show of flowers on many handsome Sweet Bays, and some large plants of Azalea indica in the open air are splendidly bloomed. The kitchen-garden is situate some little distance from the mansion, and here are the plant and fruit houses. Peach trees under glass are carrying a splendid crop, and look well, while outside the trees are blighting very much. A house of Grapes also looks well, and so do the plant and Cucumber houses generally. The kitchen garden contains some fine specimens of old, well thinned Apple trees in the bush form, from which Mr. SYDNEY FORD, who most worthily presides over the garden establishment, obtains many of his choicest samples, and which this season give great promise of abundance. Pears show a fair crop, but Plums on bushes are a scarce crop and much blighted. The famed Apple orchards, which cover altogether an area of about 100 acres, are situate a mile or two away from the gardens. In spring, when the trees are in flower, the sunny slopes which the orchards occupy are a glorious sight, and again in autumn the fruit-laden trees are objects most pleasing to contemplate. The orchards seem originally to have been planted principally with cider fruits, but for some years past a process of weeding out has been going on, and many are the trees which have been cut down and grafted with the finer market varieties. How long these orchards have been planted we do not know, but we believe that the Rev. G. W. ST. JOHN (a descendant of the BEAUCLERC family, who formerly owned the property), whose death was announced in our last issue, assisted in the work.

—— We learn that, while in some parts of the Bavarian Palatinate the OIDIUM has reappeared amongst the Grape Vines, no single case has yet been noticed of the PHYLLOXERA.

New Garden Plants.

BOMAREA CARDERI, *sp. nov.**

All the Bomareas known to us are well deserving cultivation from the beauty of their flowers, but the one above named, which was exhibited by Mr. Bull at the Royal Aquarium flower show, on May 30 and 31, may safely be pronounced the most beautiful of any yet introduced. A very good general idea of the plant may be obtained from Mr. Smith's drawing, p. 793; a technical description is given below. In this place we may describe it as a glabrous twining plant, with dark purple stems of the thickness of a swan-quill; the leaves are rather distant one from the other, petiolate, the petioles or leaf-stalks being about an inch in length, purplish at the base and sharply twisted, so that what was originally the lower or outer surface of the leaf assumes, in the adult stage, the position of the upper or inner surface. The stomata are all, or nearly all, on the lower surface, that is on the inverted upper surface away from the light. The twist in the stalk takes place some time after the formation of the leaf, so that in the unrolled bud the surfaces are in their normal position. The blade of the leaf measures about 7 inches by $2\frac{3}{4}$, it is dark green above, with a central prominent midrib, glaucescent below, with numerous closely-set nerves. The form is oblong lanceolate acuminate.

The inflorescence is pendulous and consists of a terminal umbellate cyme surrounded at the base by a series of crowded leaves, forming a quasi involucre. The peduncles are 4—6 in number, about 9—10 inches long, spreading widely, terete, simple, or forking beyond the middle, a small lanceolate leafy bract being situated at the bifurcation. At the end of each flower-stalk is a flower having much resemblance in size and shape to those of Lapageria rosea, but rather more contracted towards the mouth, and of a lighter rose-pink colour.

The flowers measure about $2\frac{1}{2}$ inches in length by $1\frac{1}{8}$ inch in breadth at the widest part; they are regularly bell-shaped, with six segments, the three outer rose-coloured, oblong obovate, rather obtuse, 3-nerved, and provided with a short projecting horn-like process near the apex on the outer surface, the three inner nearly equal in length, obovate-obtuse, crenulate, spotted with purplish brown spots, and raised on a long claw, the edges of which are rolled inwards, so as to form a furrow, which is filled with nectar-like juice. The stamens are six in number, included within the perianth, three long, three short, with straight filaments and oblong innate-versatile anthers of an olive colour, and bursting at the sides by a long chink. The style is rather shorter than the stamens, whitish, divided at the top into three short, linear, curved, stigmatic branches. The ovary is adherent or inferior, greenish, obpyramidal, three-sided, with projecting ribs. The fruit is at present unknown.

It is a native of the lower mountains of New Grenada, and will probably require greenhouse treatment, though several of its congeners prove hardy if protected in winter.

Beautiful as this plant is, it has several sisters which rival it, and which await introduction to our gardens, if it be not (as we suspect is) the case that some of them are already among Mr. Bull's treasures. Some of these are named and recorded, but others await registration and authentication on the part of the botanist.

The genus Bomarea—Kunth writes it (without justification so far as we see) Bomaria—was split off by Mirbel from Alstrœmeria, for reasons which some botanists consider insufficient. For horticultural purposes, however, there can be little doubt that it is better to consider the species of Bomarea as distinct from those of Alstrœmeria in their tuber-bearing roots (if that be a peculiarity of all the species), twining habit, regular flowers, and straight stamens.

Better characters for discrimination may be found in the inflorescence, which is long and loose in some species, dense in others, and few flowered in a third group. The form of the perianth and the relative length of the outer and inner segments respectively furnish good marks of discrimination, as do also the size of the flowers, and the pubescence, or absence of pubescence, in the foliage.

Considerable differences are also said to exist in the fruits of the two genera, but of this we have had but little opportunity of judging. The species of the genus were for the most part well defined by Dean Herbert in his work on Amaryllidaceæ (1837), p. 67. Kunth, in his *Enumeratio*, v. 788 (1850), followed Herbert closely. Since that time a few new species have been described, but no general revision of the genus has taken place.

The species best known in cultivation are B. Salsilla, edulis, chontalensis, Carderi (above described), Jacquiniana, acutifolia, simplex, hirtella, with flowers in which some shade of pink or red predominates; and B. ovata, B. multiflora, and B. Caldasiana, in which a yellow colour prevails.

B. edulis is so called because its roots produce tubers, or tuber-like bodies, which are eaten in the West Indies. *M. T. M.*

× CYPRIPEDIUM SUPERCILIARE, *n. hyb.**

This is intermediate between the parents, C. barbatum and superbiens, yet far more like the last. It has the more triangular upper sepals, the deflexed sepals, the lip of C. superbiens. The flower is, however, a good deal smaller, the warts and blotches of the petals cease a short distance before reaching the apex. The staminode, too, has fewer teeth than that of C. superbiens, and is less transversely dilated. It is decidedly an interesting connecting link. The flower is smaller than in C. superbiens; the leaves much like those of that species. I have to thank for it Messrs. Veitch, and guess it must be of Sedenian origin. *H. G. Rchb. f.*

STANHOPEA SHUTTLEWORTHII, *n. sp.*†

An interesting species, combining the colours of Stanhopea Wardii, Lodd., with the characters of S. insignis, Frost. The sepals, petals, and basilar part of lip are apricot-colour, with dark purplish blotches. The anterior part of the lip is whitish yellow. There are dark purplish spots on the anterior blade of the lip (epichile). Column whitish, with a green middle part, spotted with purple inside. The flowers are arranged in a lax hanging raceme. The bracts are not more than two-thirds the length of the stalked ovaries in the inferior flowers. The conical furrowed and wrinkled pseudobulbs are very large, just as they used to be found very often in S. Wardii. The shining, strong leaf is very broad. This plant was discovered in New Grenada by Mr. Shuttleworth, and is named in appreciation of his great energy, by the wish of his employer, Mr. W. Bull. *H. G. Rchb. f.*

× DENDROBIUM RHODOSTOMA, *n. hyb.*‡

This new hybrid, raised by Mr. Seden, was exhibited by Messrs. Veitch at the Brussels Centennial flower show the other day. It comes near a small Dendrobium sanguinolentum, having lent the beautiful purplish colour from D. Huttonii, one of the parents. The single developed flower was much like one of D. sanguinolentum, but the shorter sepals and petals, and a far narrower spur, were good features for immediate distinction. The lip has a much longer nail, with a longer retrorse cartilaginous tooth than even that of D. sanguinolentum, while the same ornament is very short in D. Huttonii. The column is exceedingly short, and has lobed membranous auricles, which are in neither of the parents. The colour of the flower is whitish, with the ends of all parts of the perigone of a rich purplish tint. *H. G. Rchb. f.*

HUERNIA HYSTRIX, *N. E. Br.*

I have lately received from Mr. J. E. Daniel, of Epsom, a flowering branch of the plant figured and described in the *Botanical Magazine*, t. 5751, as Stapelia hystrix, and find upon examination that it does not belong to the genus Stapelia, but is a veritable Huernia, and therefore has nothing to do with S. glandulifiora, Mass., with which it is compared in the *Botanical Magazine*, the latter plant being a true Stapelia, of the section Gonostemon. Huernia hystrix is remarkable, first, on account of the limb and throat of the corolla being covered with fleshy subulate processes, which would seem to be the homologues of the minute papillæ possessed by some of the other species belonging to this genus, on which are seated the clavate hairs that clothe the same parts of the flower; secondly, from the parts of the inner corona having their apices expanded into flattened oval, horizontal processes, somewhat resembling an inverted foot, instead of terminating in a subulate point, as in all the other species known to me. *N. E. Brown.*

THE ROCKWORK AT KEW.

THE rockwork at Kew is so pretty just now that a few notes on the choicer plants which contribute to the general effect cannot fail to be of interest. The Dodecatheons are noticeable at a glance, sending up many heads of dart-like flowers. The kinds that occur are D. elegans, D. integrifolium, and D. giganteum, giving different shades of colour. Primula japonica is extremely ornamental and evidently at home in this position; pot specimens, except of the best cultivation, are not to be compared with those grown out-of-doors. Jamesia americana is a desirable dwarf shrub from the Rocky Mountains, and one well adapted for planting in certain positions on rockeries. It has opposite ovate leaves, about 2 inches long, with terminal cymes of pure white flowers of ornamental proportions. It is considered a rare and local plant, and, though in cultivation for several years, was not figured till last January. Geranium Robertianum album worthily occupies a corner, forming a mass of delicate pale green foliage, and bearing a large number of pure white flowers. Erinus alpinus and Ethionema jucundum are extremely pretty; the latter resembles a diminutive Ethionema coridifolium. The true Cheiranthus Marshallii has been in splendid condition, and its fine colour is much admired. Lilium tenuifolium, as last year, is the first to bloom out-of-doors. It is said to be very easily grown from seeds, and from the beautiful colour it is worth growing in quantity. Lithospermum prostratum is covered with bloom, and is, of course, the finest dark blue of the present time. Senecio Fendleri, a new species, has been recently introduced from Northern Mexico, and, being much in the way of S. argenteus, requires a similar position. Of the many Violas, V. rothomagensis is one of the best. It has a neat and close habit, commences to flower early, and continues for a length of time. Silene quadrifida is one of the prettiest of the genus; it is very dwarf, and bears innumerable pure white flowers. Ramondia pyrenaica has become quite established, and is flowering well, though not so strongly as it has been known to do. Houstonia cœrulea is growing with remarkable strength; instead of the usual 2 or 3 inches, it has attained to more than twice that height. There are here some good specimens of Saxifraga Maweana, which perhaps bears larger flowers than any other cultivated species, so that it must be considered as essential in all collections. After a time the plants will dry away, leaving only the bulbils that have already formed in the axils of the leaves. This habit has not been expected by all, so that on some occasions it has been considered dead. A tuft of Phlox setacea var. violacea is very effective; it would evidently be worth taking in hand for spring gardening. From the number who have desired to obtain this, it cannot be very common. The fiery flowers of Delphinium nudicaule have a striking effect, and cannot easily be dispensed with. Of the Aubrietias A. Hendersoni is very fine, having large flowers, and dark in colour. Stachys corsica is usually dwarf, growing in a dense tuft no more than an inch high, but several plants have this year thrown out long stems like one of the creeping Veronicas. Meconopsis Wallichi, with one or two other allied plants, will probably require mention in our next notice, there being several flower-stems well advanced. The difficulty of growing Rheum nobile is at last likely to be overcome, and its full development seems now almost a certainty. There is here a healthy plant, but there are others still larger and more flourishing. Some are growing vigorously, and have leaves 7 inches long, by about 5 broad, a measurement sure to be exceeded within a few days.

* *Bomarea Carderi*, Mast. et Hort. Bull.—Glabra volubilis; foliis petiolatis, petiolo pollicari latiusculo complanato torto, lamina (circa 7 poll. × $2\frac{3}{4}$), oblongo-lanceolata acuminata, superne (torsione petioli), saturate viridia, nervoque medio prominente carinata, subtus glaucescentia nervoso-striata nervis approximatis; inflorescentia terminali, pendula pluriflora laxe umbellatim cymosa; pedunculis (circa 9—10 poll. long.), simplicibus v. dichotome ramosis; floribus $2\frac{1}{2}$ poll. long., regularibus, elongato-campanulatis versus apicem constrictis; perianthi segmentis externis oblongo-obovatis, roseis, trinervis subapice conniventibus dorso breviter cornutis; segmentis interioribus vix brevioribus obovatis cremilatis maculatis longiuscule unguiculatis, ungue nectarifluo. Hab. Nov. Granat. alt. 4500 ped. ubi legit cl. Carder cujus studio in hort. Bull pulcherrima hæcce planta est introducta ibique mense Junii floruit. *M. T. M.*

* *Cypripedium superciliare*, n. hyb.—Foliis lato-ligulatis acutis bene tessellatis; pedunculis unifloris dense pilosulis, bractea brevissima triangula ancipiti ovario ter breviori; sepalo dorsali ovali triangulo, sepalo inferiori ovali acuto labellum longe non æquante; tepalis ligulatis acutis ciliatis ultra medium verrucosis, deorsum versis; labelli lacinis inflexis verrucosis; sacco obtuso, limbo libere retuso utrinque in cornu obtusum triangulum excurrente; staminodio transverso antice utrinque angulo externo acuto; medio retuso cum apiculo in sinu; postice semi-rotundo medio exciso.—Cypripedium superbiens × barbatum. *H. G. Rchb. f.*

† *Stanhopea Shuttleworthii*, n. sp.—Pseudobulbis magnis conicis sulcatis monophyllis; folio a petiolari basi late oblongo acuto; racemo pendulo laxifloro; bracteis oblongo-lanceolatis acutis ovarii duas tertias in floribus infimis æquantibus; hypochilio sessili semigloboso antrorsum angustato; limbi superiori profunde et argute angulato infracto, a basi apicem versus bicarinato; angulis capitis rectangulis; canali clauso, postice aperto, cornubus complanatis subrectis; epichilio transverse triangulo; antice utrinque juxta apicem sinuato; columnæ alis semioblongis usque ultra dimidium inferiorem ab apice, alulis minutissimis acutangulis. Colores Stanhopeæ Wardii, Lodd. Ex Nova Granata attulit dom. Shuttleworth, in hortum Bullianum. *H. G. Rchb. f.*

‡ *Dendrobium rhodostoma*, n. hyb.—Caulibus gracilentibus; foliis oblongo-acuminatis distichis, inflorescentia lateralis unifiora (certe etiam pluriflora); sepalis tepalisque oblongo ellipticis acutis; sepalis lateralibus in perulam cylindraceam obtusam extensis; labello bene unguiculato lineari-lanceo apice dilatato subquadrato subbilobato ac denticulato dente cartilagineo retrorso in ungue; columna brevissima.—D. Huttoni × sanguinolentum. *H. G. Rchb. f.*

Home Correspondence.

Effects of the Winter of 1875-6.—Last year I sent you a list of plants that had survived or perished in the winter of 1874-5; I now send you a similar list, showing the effects of last winter. The following, I fear, are dead:—

Quercus glaber	Onosma stellata
Ardisia japonica	Begonia Veitchii
Yucca Whipplei	Salvia Pitcheri
Convolvulus siculus	Asclepias tuberosa
Liatris tenuifolia	Amphicome Emodi
,, gracilis	Iris Redouteana
,, cylindracea	Hypericum Coris
Ullucus tuberosus	Crinum americanum
Asparagus verticillatus	Medicago marina
Aristolochia fimbriata	Leucocrinum montanum
Fuchsia radicans	Tweedia lucida.

It may be worth observing with respect to these plants, that when a plant survives the winter there is a fair presumption that it is hardy. If it dies, however, it is not certainly tender, as a plant may be killed by many agents besides cold, such as old age, disease, wrong situation, &c. The following plants have lived through the winter without any protection, except a bell-glass over Nertera, which I think did as much harm as good, as it encouraged the growth of moss:—

Bouvardia triphylla	Niphobolus lingua
Habranthus pratensis	Hyacinthus candicans
Atraphaxis spinosa	Desmodium penduliflorum
Nertera depressa	Crinum Moorei
Asparagus racemosus	Lagerstroemia indica
,, pumilus	Canna achiras
,, horridus	Fuchsia Dominiana
,, dahuricus	,, simplicaules
Pennisetum longistylum	Senecio pulcher
Johrenia fungosa	Bambusa Simoni
Eryngium platyphyllum	Solanum glaucophyllum
,, Aquifolium	Oxybaphas baselloides
,, bromeliæfolium	Atropa origanifolia
,, ebracteatum	Sida pulchella
Poinciana Gillesii	Hypericum patulum
Aristolochia sempervirens	Horkelia californica
,, pubescens	Dorycnium italicum
Gordonia pubescens	Tradescantia erecta
Stauntonia hexaphylla	Dianthus arboreus
Pancratium maritimum	Clematis Henryi
Iris tectorum	Inula limonifolia
Mandragora autumnalis	Cocculus carolinianus
Hedychium Gardnerianum	Baptistia perfoliata
Sparaxis pulcherrima	Bongardia Rauwolfi
Moræa sinensis	Agave utahensis
Cooperia Drummondii	Capparis spinosa
Cypripedium arietinum	Passiflora lutea
Homeria lineata	Citrus trifoliata
Oxalis Smithii	Budleia Lindleyana
,, vespertilionis	Vitis arborea
Abutilon vexillarium	Pistachia vera
Thea viridis	Isomeris arborea
Xanthoceras sorbifolia	Schranckia uncinata
Woodwardia radicans	Gymnosthrix latifolia

I am aware that many of these plants have been before proved to be hardy, but not, as far as I know, in these parts; and before you can say decidedly that a plant is hardy, you want reports from as many different districts as possible. *Henry N. Ellacombe, Bitton Vicarage, Gloucestershire.*

Notes on Plant Names.—Your correspondent on this subject, at p. 733, in speaking of Danewort, clearly refers to Ægopodium Podagraria, and not to Sambucus Ebulus. Every intelligent Scot knows, or at least ought to know, that Ground Elder, Bishopweed, or Goutweed, is one of the greatest pests that he can possibly possess in his "kale-yaird." Danewort is rare in Scotland, but the other weed is by far too common where it is not wanted. *J. Sadler, Royal Botanic Garden, Edinburgh, June 6.*

Antediluvian Bogs and Coal Strata.—Many of the fossil plants embedded in the lower coal seams are quite distinct from those in the upper ones—instance, Stigmaria ficoides, a kind of trunkless tree, whose arms or branches crept along the ground—while others are clearly identical with existing types or families. But, what is very remarkable, many that are called "coal plants" are tropical ones, mingled together with hardy Pines, Firs, and Araucarias; and, what is still more so, nearly the same kinds of plants prevail in all coal formations throughout the whole earth, and even under the sea. From this it is fair to surmise that at the far back period referred to, the temperature of our globe or earth was nearly universal. But against this it may be urged, how could tender nd hardy plants thrive together? I reply, that though there were vast extents of hot swamps in the plains yet there may have been mountains clad with Pines, Firs, and Araucarias, which are very inflammable. Although I have mentioned the Stigmaria as a coal plant, yet, if my memory is correct, huge specimens of it have been found in the upper sandstone, near Edinburgh, and the same of Araucarias and others. However, the large fossil trunks of those lying horizontally under the shale, or just above coal seams, show clearly, by their hollow trunks filled with petrified sand and mud refuse, that they were drifted down rivers into water troughs below. The fact that such trees are resinous, resisting decay in water better than most other kinds of plants, except Palms and Ferns, may account for their fossil remains being so perfect after the enormous pressure came upon them in bogs. Some consider that was effected by volcanic action in connection with earthquakes, yet the watercourses seem not to have been affected by the eruptions, at least fresh bogs were formed on the sites of the ones which formed the upper coal beds, though there may have been thousands of years between each formation. But it seems doubtful if they were engulphed, and covered up with clay and ironstone, or if such deposits were formed afterwards by mineral agencies; likewise how such masses of vegetable substances became charred—whether from subterranean fire, or this from above, or spontaneous combustion. The two first are tenable, because the immense heat must have had to ascend through all the previous strata, and also the mass of earthy substances between them; and if the heat descended the same must be repeated on the top of each formation. If so, how come fossil plants in the roofs of coal-pits to be more perfect than those below? The last seems the most probable; nay, one has only to observe a haystack got up in bad condition—the inside is charred black, while the outside is dank and wet. Although this seems so unlike geology, yet it may somewhat account for the formation or charring of vegetable substances into coal; likewise for the impressions of plants being so perfect in the clay and shale, which must have happened when both were wet and pliable. Besides, those acquainted with Ferns know that the least gaseous vapour crimps their tender leaves, which must have happened to them from heat by either way; whereas their impressions are as truly represented as if they were fresh from the hand of an artist. Instance Sphenopteris affinis and many others. Now, if my views on this part of the subject are correct the bogs seem to have been submerged and gradually covered with deposits under water, which pressed them down, and thus formed basins, to begin the same again, with, perhaps, a fresh creation of other kinds of plants, though there may have been thousands of years between their formations, as noted before. But, any way, the seams of coal vary from a few inches deep to 8 and 15 feet, and in some instances to "20 feet." I give the last in inverted commas, because a Jarrow man, who is well acquainted with coal-pits, told me that he never saw or heard of such a seam of coal in Northumberland. But whether small or great, they all originated in bogs. In geological language, what I have spoken of is called the carboniferous period, when coals were formed on land, or rather under fresh water, while at the same time secondary rocks were formed under the sea. This is most clearly indicated by the fossil remains of sea plants and fishes which abound in them. Those of coal are trees, fresh-water plants, and animals, especially of the alligator family, which inhabit swamps. Some idea may be formed of the vast extent of the antediluvian lakes or morasses, with rivers flowing through them into the sea, by the extent of the Newcastle coal-fields, which are considered to "cover an area of about 200 square miles." But to illustrate them better I go to the moors or "broads" between Norwich and Yarmouth, into which several rivers flow, while the Yare passes through to the sea. The shallow water and mud are more or less submerged by the tides, and much refuse substances are deposited by the rivers. But such are insignificant when compared with the great deposits of vegetable bodies and earth refuse by the ancient rivers surrounded with such luxuriant vegetation, the effects of moist and high temperature. Besides, some of the ancient shallow lakes were intersected with primary rocks, which formed vast hollow troughs that held the deposits until the swamps were submerged. I mentioned the rocks in particular, because they now exist in some coal-pits, and are great obstacles to the miners. Some consider that such granite dykes were heaved up through the coal strata by volcanic action, still it seems more probable they were serrated peaks of primary rocks before their bases were covered in the way spoken of, though they may have been shaken or broken afterwards by earthquakes. However, such dykes are apt to mislead explorers after coal, because when they come to the granite they consider it is fruitless to go further, whereas if they had tried again only a few yards off they might have been successful. But as both earth and sea have not only changed places, but have also gone through various revolutions since the coal measures were formed, this may account for that valuable mineral being found sometimes near the surface of the earth, while other strata of it may yet underlie those of the greatest known depth. But wherever coals are found their qualities may differ in accordance with the original inflammable matter of the vegetable substances which formed them, and also that of the inflammable mineral ingredients infused through the whole mass of strata when under fermentation, and which petrified them into coal. As I have hinted, this was not effected by strong or violent heat, because the ore which formed ironstone in the coal-fields seems to have been soft and pliable, otherwise the shells embedded in ironstone must have crumbled into lime or dust, whereas they are often seen in hard ironstone, as if they had been recently stuck into soft cold clay. *J. Wighton, Cossey Park.*

The Pansy Disease.—Whether the shanking off suddenly, to which the Pansy is liable during the summer months, merits the designation of a disease or not, certainly it is a frightful cause of death in this beautiful hardy flower, and so far seems to defy the curative efforts of those who largely cultivate them. Probably it is more immediately confined to the warmer South, as the evil is not made manifest until after we have had several hot, dry days; but when once a Pansy is seen to droop it is as good as gone. Nothing can save it, and even the cuttings—if taken off—refuse to live. In the South the Pansy has nothing to fear from frost, but much from heat and drought; it likes a deep, cool, sandy soil, moderately enriched with rotten manure, kept well watered, and nicely mulched with cocoa-fibre refuse or spent tan. It might well be imagined that under such conditions as these the Pansy would not be affected by heat, but probably that is its chief foe, as even thus cared for the plants will die off here and there all over the bed, until finally perhaps not more than one half are left. The cause of this decimation is a difficult problem to solve. It does not arise from insect attacks, as I have several times washed the roots of diseased plants perfectly clean, and found no trace of their having been eaten. Neither is any fungus visible, but all through the roots and in the collar of the plant is visible a dark hue indicative of decay, and this, too, whilst the top is yet green. It was once suggested that it arose from the effects of frost, but plants that have not been exposed to frost have suffered worst; indeed, plants put out late in the spring seem to be more affected than those that have been exposed in the open ground all the winter. Out of so many Pansy growers who are readers of the *Gardeners' Chronicle*, there must be not a few who have suffered from this shanking, and perhaps some of them may know of a remedy. Certainly any that could counteract the mischief would be accepted as a great boon. Growing continually in the same soil is not beneficial to the Pansy, but when this shanking is found badly in fresh soils, it is evident that exhausted soil is not the sole cause. One kind of experience I have had that is worthy of note is this, that old plants left in the beds all the winter are scarcely affected through the next summer, and I have now large plants growing quite luxuriantly where they were planted a year since, in soil that is now baked as hard as a rock. Obviously it may be said that, if that is your experience, why not plant always in the autumn? Very good advice, no doubt, but not always easy to follow, especially in the case of sorts that are being propagated for trade purposes; but those who are purchasing Pansies next autumn would do well to take this hint, and plant in early, as it might possibly prove a remedy for a serious evil. I purpose next autumn to plant a few of each of the many sorts we have here, by way of experiment, just to see how they will stand through the ensuing summer; and if I find that it is successful, I shall adopt it more largely in the future. I have just now a dense piece of Pansy Blue King that has been growing in a hard, dry piece of ground for the past eighteen months, giving a wondrous mass of flower, whilst recently put-out plants close by are more than one-half dead. I trust this note will evoke an expression of opinion on this subject from some old Pansy growers, whose experience may be both useful and instructive. *A.*

Sweet Chestnut.—I am particularly desirous of knowing the time when the sweet Chestnut (Castanea vesca) blooms in various parts of Britain, and should be glad to know also of the time of flowering of the American Chestnut. Will some of your correspondents oblige me by noting the dates. *A. Gr.* [Near London, we observed one tree just coming into flower on June 12. EDS.]

Paulownia imperialis.—We have a tree planted in these gardens by the late Lord Dinorben soon after its introduction, which has only flowered once until this year, and then it was covered over to protect it from the spring frosts. It now bears hundreds of its sweet-scented Lilac flowers. The height of the tree is 30 feet; circumference (18 inches from the ground), 5 feet 6 inches. *D. Dacres Hughes, Rinmel Gardens, Abergele.*

Beans and the Rooks.—I have enclosed some small plants of dwarf Beans which I picked up from amongst a quantity that lie now strewed over the ground of my general crop, and which the rooks have pulled up. I do not know how other growers get on with them this season, but mine are very bad. I sowed about 4 gallons, and I have now about two-fifths of a crop; about one part out of five have rotted in the ground, and one part of five as soon as they had just started into growth. The grub or some enemy under the soil has eaten a hole right through them, thus causing them to dry up; and the rooks have pulled up about one part of five, and they lie on the ground in the same condition as those I have enclosed, and about

two parts out of five are going on to all appearance at present all right, I find nothing at the roots to account for the rooks pulling them up. *C. Osman, South Metropolitan District Schools, Sutton.* [The grubs, no doubt. Eds.]

Bearing Reins to Horses in Mowing Machines.—I have read, thought, and written a good deal on this subject, and have come to the conclusion that it is nothing short of cruelty to use the bearing-rein. We all know that very great improvements have been made within the last dozen years in our mowing machines, but seeing that mowing with them is done in the middle of the day, and often under a scorching sun, it surely becomes us to make it as easy as we can for the faithful brute who trudges backward and forward hour after hour, anxious only to do our bidding. Surely the work is hard and arduous enough without the head being retained by the bearing-rein in a perfectly unnatural position, and I may state on the authority of the leading veterinary surgeon of this neighbourhood that it often produces the disease known as "roaring." I admired very much the fine show of fruit last autumn at Edinburgh, and I also admired their humanity to horses, for not a single instance did I see of the stupid bearing-rein in all the city; and surely, after the example set last week by the Four-in-Hand Coaching Club, when a score of men guided their teams through London without it, no one can now say it is indispensable. I have abandoned its use here in the gardens, and for the sake of humanity and common sense say, Go thou and do likewise. *J. Rust, Eridge Castle, Tunbridge Wells.*

The Litter of Woods.—The improving article under the above heading in last week's *Gardeners' Chronicle* is most suggestive to cultivators. The leaves of trees and plants in general are Nature's fertilisers. The action of animals is fitful, erratic, but the fall of leaves and fading of stems are universal. Wherever a plant or shrub or tree raises its head above the earth, the time arrives in its life or history when it as surely gives something back to enrich, and in the long run it gives more than it has taken It is in this way that the bald earth becomes clothed with soil, and enriched with higher beauty. Each plant treated the earth with generosity, and left a residuum of wealth as its legacy at death; it also enriched the soil with all its old clothing, and every useless appendage. In this way soils were more and are still enriched. The process is a slow and sure one if not interrupted nor arrested. But throughout the dressed part of gardens and on grass lands, all these natural sources of enrichment are carefully removed. Shrubs and trees are expected to do their best in growth and appearance without this ameliorating or enriching addition, and help of falling leaves or decomposing litter. In all thick masses of trees or shrubs all such litter should not only be left but added to. But in both processes some care must be exercised, for one of the most striking features of Nature's method of manuring is the thinness of the spread. If leaves, grass, &c., are thrown in among shrubs or trees in thick masses one of two things often happens: the mass heats or burns rather than feeds the roots, or the decomposition of such masses in one spot forms a manure too rank for the roots to feed upon, and is, in fact, injurious. As the spreading and slow decomposition is Nature's method of making and enriching the soil, there can be no doubt that it is the best. The leaves of different trees are also endowed with extremely varied powers of durability. Even among Firs, what a difference in the staying powers of the Larch and the Scotch Fir. Almost equal differences prevail among other trees. Take the Sycamore and the Oak as representing the two extremes of perishability and durability; it must also be granted that each tree is most suitably enriched by its own litter. The times and seasons of root growth and feeding are no doubt correlated to the season of leaf or litter decomposition. The litter also varies much in composition; each tree secretes special matters from the soil, and also returns its own individual quota to its enrichment and the sustenance and further growth of the plants. Possibly a key to the entire theory of planting and manuring might be found in the diversity of constituents found in the litter of different plants, and the different times at which these constituents become available for food. These two considerations might also throw considerable light on the diseases of plants, and the evils or otherwise of mixed plantations. If it is true—and it is to a large extent—that one man's meat is another man's poison, may it not be even more true that the residuum of one tree may bring disease or death to another? May it not be possible that Oak, Ash, or Birch leaves, on Larch roots, may bring on or aggravate the disease that is threatening to clear this useful tree out of large districts of the country? And the same causes may follow from the littering the roots of other trees with foreign and, it may be, most injurious matter. Has any one, for instance, tried to guage the effect of the tannin of Oak leaves on the growth or health of the resinous Scotch Fir? The subject is one well worthy of careful consideration. It is quite possible we may have mixed our trees and shrubs for landscape effects so as to be destructive to their growth, and to undermine their health. It is well worthy of consideration whether more growth would not be made to better purpose were trees and shrubs more generally grouped in such masses as to allow each to be manured by its own litter, and the ground beneath them enriched by their decomposed leaves. And plants so placed as to be almost of necessity dependent upon such aids to growth, should be annually top-dressed with some moderately rich compost. No one who has not tried the effect of such annual dressings on grass lawns can have any idea of their stimulating effect. They perform the twofold function of natural litter or leaves—weaken or destroy the grass immediately over the roots, as well as supply the roots with new matter in an immediately available state. The first is, perhaps, almost as important as the second. Pretty, very pretty to see a fine crop of grass on our healthy greensward, sweeping right up to the boles of isolated trees. Yes, very; but grass is an exhausting crop, and being constantly mown it returns nothing to the soil. The grass preys upon the roots, and drains the earth dry of nutriment. Whip it up every year and it can do but little mischief. This is full one-half the benefit of top-dressing isolated trees on lawns. It so cripples the grass that it does the roots little harm, and then the annual dressing compensates them for the loss of the litter, which is very considerable, as is so well shown in the able article, pp. 754, 755. It is downright cruelty to plants to deprive them of one of their most important natural supplies of food, and give them nothing instead, and the starved looks and slow growth of so many isolated trees are the natural products of such thoughtless folly. *D. T. Fish.*

The Onion Fly.—Every year as regularly as the summer comes round we receive specimens of the mischievous handiwork of the larva of the Onion-fly, which is a dipterous insect, known to entomologists

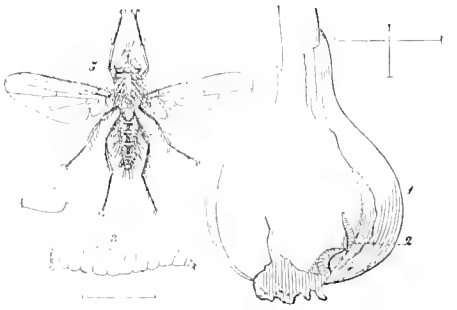


Fig. 144.—Anthomya ceparum.

under the name of Anthomya ceparum. The pest was figured and described in these columns by Mr. Curtis so far back as 1841, but it does not seem to be generally known, though so easy of identification, and we need not therefore make any excuse for reproducing an illustration (fig. 144), which shows the maggot (3), which is yellowish white in colour, with a pointed head and blunt tail at the base of the bulb, which position it has gained by eating its way between the leaves, which it penetrates at the ground line. It is this process that causes the destruction of the bulb, and it is the slimy matter deposited by them that eventually causes the Onion to become putrid and offensive. Mr. Curtis recommends as a remedy that the affected plants, the outer leaves of which become yellow, should be carefully removed, and strong brine or lime-water be poured into the holes. The process may be rendered more effective and easy by sprinkling powdered charcoal or coal-dust around the young plants, leaving here and there one unprotected, which will then become the resort of the flies, and these affected bulbs may be removed at pleasure. Eds.

Taxodium distichum.—Enclosed is a sprig of a variety of this Conifer, which, as you will see, is not deciduous, but, on the contrary, the tree is clothed with foliage all through the winter, and remains green and healthy until young leaves are formed again. I have noticed this circumstance for many years in this tree. Is it the result of grafting the deciduous kind on an evergreen variety? I have thought so, but have no evidence to help me to the conclusion. We have the deciduous kind, the leaves of which turn brown, and fall off early in the autumn if frost prevail. This may be another variety with which I was before unacquainted. Please say. *Henry Mills, Enys.* [The specimen received represents what in Britain is best known as Taxodium mexicanum (Carrière). It has other names, however, one or other of which are older than the above, but taking into consideration its very close relationship to T. distichum—being, perhaps, only a narrow evergreen-leaved variety of it—the provincial or geographical name is probably the best. Eds.]

Strawberries.—Mr. W. Hinds (see p. 632) cannot only have Strawberries from March to November, but from March to January, and perhaps there are few better varieties than the Vicomtesse Héricart de Thury for that purpose. I may, however, mention others, as I sometimes have large crops in September and October. Black Prince will produce a tolerable crop of fine-looking and good-flavoured fruit if the autumn is sunny, and May Queen I have had at the end of December. Patrick's Seedling, although at its ordinary season so soft and spongy as to be quite light, is in September quite another fruit, in texture especially. It is then close and buttery, and I should think double the weight. This begins to ripen in August, and continues through a good part of September. I have another variety that I had many years ago from the late Mr. Nicholson, of Eaglescliffe, but I have lost the name; it is a round mulberry-coloured fruit, with the seeds deeply imbedded; it succeeds Patrick's Seedling by beginning to ripen about a fortnight after, and continuing about a month later. The Vicomtesse begins to ripen about the same time, and continues to fruit much longer under the same treatment, but the fruit is much smaller. Patrick's Seedling and this mulberry-coloured one were the two varieties I sent such fine fruit of to the Queen to Balmoral some years ago at the end (last week) of September, and which Her Majesty was pleased to term "a dish of fine Strawberries." The only other good autumn and winter Strawberry I know is Dr. Roden's Duke of Edinburgh. But none of mine are from forced plants; they are from plants that bloom out in the ordinary beds, but, of course, get a rest after they have bloomed by withholding water and keeping rain from them, so that they become gradually quite dry, and cease growing for some two or three weeks. The flowers and fruit should, after they become withered, be removed. I have thought of several things that might be done to encourage autumn and winter culture of Strawberries. One was to offer, myself, prizes through the Royal Horticultural Society; another was to suggest to that or some other great society to offer prizes themselves. But the former I could not well do, as some £50 or more would be needed to act as anything like a stimulus, and this to be repeated for several seasons; and I could not persuade myself that any society would feel sufficiently interested in it to admit it into their lists of prizes. I can, however, assure your readers that it is worth a trial. The fruit will be found very superior in texture and flavour to those produced in the early spring months. But there is, perhaps, a greater difficulty in having the fruit at its best on any given day than there is in forced Strawberries, and no doubt those who attempt autumn and winter culture will have failures before they succeed; but success is as certain as in forced Strawberries. I am even persuaded that Strawberries might be had every month the year through by those who have glass structures of various temperatures. I myself have had quite a profusion of bloom, besides a quantity of buds, not open, late in November, which, with proper attention, might produce ripe fruit in January and February; but of course there would not be the flavour in these, as I know those in November and December are deficient in flavour, and in colour too, if the weather is dull. I hope I may be able to give my attention to fruit culture again some day. I do not mean the mere growing of fruit—this I do now, but not in the way I did some years ago. I then had about 120 or 130 varieties of Strawberries, and by minute observation I found that some ninety or 100 of these had some peculiar feature in them as to texture, colour, flavour, earliness, lateness, hardiness, fertility, or the like, to recommend them. So with Currants, Gooseberries, Raspberries, Pears, Apples, Plums, Cherries, Figs, &c.; and as I generally got these upon their first introduction so I had them correct to name. I had nearly 300 varieties of Gooseberries, and my experience with these was much the same as with Strawberries; nearly twenty varieties of red Currants, which I found most distinct—for example, La Versailles and the Cherry I had as distinct as any two varieties could be in red Currants. With me the Cherry was very short, very with large berry, and a poor bearer; but La Versailles was a very long bunch, and most prolific, the best red Currant I had for a crop. But through the destruction of my garden all these fine things are gone. As I have just said, I hope to return to it again, for my great delight has always been in fruit culture. When I was a boy and went to school, I delighted in planting stocks and "working" them, and I remember most distinctly a sort of freak of mine when about ten or twelve years old. It was to plant a Plum stock in leaf-mould to see what the result would be, and I remember, too, it did not turn out to my expectation, especially in producing wood; but the leaves were two or three times as large as those in

the ordinary soil, very much darker in colour, and very glossy: and then in the autumn, boy-like, I must take it up to see what the roots were like, and this was the greatest surprise, for not a root had gone beyond the leaf-mould, but in it such a crowded mass as I had never before seen—and this one incident has been of great use to me, even up to now. When I used to practise "tree-lifting" I found similar results: a good compost or manure added freely to the soil in which the trees were put back produced but little wood comparatively, but the wood that was produced very "short-jointed," and very stout leaves too, very large and dark, and flower-buds in abundance; but this too is discontinued of necessity, not of choice. Yet when one spends large sums of money, and the best part of one's life in these things, and then finds one's-self dispossessed of all through the not being more cautious in making a contract, it is very dispiriting. I have many trees now—some thousands, but huddled together in some 4 acres of ground, that they do no real good. The greater number were put in merely to keep them alive. The remainder of my ground, some 10 acres or so, is not suitable for trees, and is therefore used for other purposes, which takes me away from that which in early life I so delighted in, for in my apprenticeship, Pines, Grapes, Cucumbers, &c., indeed anything that required more than ordinary attention, interested me greatly. I have wandered quite away from autumn and winter Strawberry culture, but hope I may hear of many more such persons as Mr. Hinds "bent" on trying, and in a few years Strawberries will be no rarity in autumn and winter. *George Lee, Clevedon.*

Peach Blister.—Some time ago the Rev. Mr. Radclyffe—in a note most complimentary to myself and my late brother, Robert Fish—announced that he could cure or prevent Peach blister. As the subject is one of immense importance it would be interesting to learn through your columns the *modus operandi*, and whether the remedy is akin to that adverted to by a writer in the *Villa Gardener*. I may state that that writer is one of our best practical gardeners—who has tested his wash for years alike in the North and South, and never known it to fail. I also wish to say something on the subject, but should like our reverend genial friend, who is an authority on Peach culture, to lead off. As far as my observations have extended blister is not very prevalent this year, and the crop of Peaches in the open air are far better than those of Apricots. Accepting Mr. Smith's theory of the nature of Peach blister, it would seem to be possible to prevent or destroy it by suitable washes or outward applications. *D. T. Fish.*

Imported Dendrobiums.—Attention has been directed by Mr. Swan and others to the Dendrobiums sold at Stevens' rooms in April, 1875, all agreeing as to the extraordinary strength and vigour of the varieties then disposed of. It is satisfactory to the cultivators that they are likely to maintain under cultivation the vigour undoubtedly possessed by them in their native habitat. The plants of D. Wardianum purchased by us are rapidly growing in the East India-house; one bulb has already attained the length of 3 feet 4 inches, and proportionately stout, measuring 2 inches in circumference and 15 inches from point to point of the leaves in its widest part—several other bulbs measuring upwards of 2 feet. It is growing in a 9-inch pot, and requires a greater quantity of water at the root than other varieties growing by its side. It is benefited by syringing it overhead once or twice a day in bright weather. It flowered with us in March, the flowers being large and of good substance, in every respect satisfactory. D. crassinode and primulinum, purchased at the same time, are growing with a vigour seldom possessed by these varieties. Judging from the examples which have come under my notice, I am of opinion that they are constitutionally stronger than the older plants in cultivation. The drooping plant of Wardianum here is not likely to make bulbs more than half the length of those more recently imported. *James Huntley, Poulet Lodge, Twickenham.*

Notices of Books.

Over the Sea and Far Away; *being a Narrative of Wanderings Round the World.* By T. W. Hinchliff. Longmans.

There are very few books, we take it, that are read from beginning to end, or, to put it in other words, very few readers, now-a-days, when so much has to be done, and so many varied occupations more or less conflicting occur to prevent, who have the power, even if they have the inclination, to read a book through. In the case of the book before us, we may say with truth that we have read it from title-page to colophon. Much of it deals with countries and scenes with which reiterated descriptions and some knowledge of their natural products have rendered more or less familiar to the reader endowed with natural history taste. Nevertheless, Mr. Hinchliff writes with such freshness and such genuine appreciation of natural scenery, and of the varied faunas and floras, that even his account of old and well-known marvels of Nature—such, for instance, as the account of the big trees—by no means creates an impression of *crambe bis cocta*. On the contrary we are glad to have the impressions of so observant and experienced a traveller. Mr. Hinchliff has been previously known to us as an alpine explorer, but in the present volume he gives us a narrative of his journeyings to Brazil, the Straits of Magellan, the coast of Chili, Peru, and Central America to San Francisco; thence, after a short sojourn, the author crossed the Pacific to Japan and China; on the homeward route Hong Kong, Singapore, and Ceylon were visited. Everywhere the author shows himself an intelligent and quick-sighted observer. He tells us little that is absolutely new, nor could he be expected to do so, traversing as he did the beaten highways of the world, but his descriptions are always interesting, and in many cases have a special interest for gardeners, on which account we propose to lay Mr. Hinchliff's book under contribution, and make a beginning by citing the following descriptions of a Fern hunt in the neighbourhood of Rio de Janeiro, and of the inexhaustible floral wealth of the Brazilian forest:—

"Sometimes it was a new species of Trichomanes that had chosen to climb 20 or 30 feet up the trunk of a tree in the dark, damp shade, or along the face of a huge rock, where its fronds extended right and left across the dark brown surface, and stretched upwards to meet the rosy blossoms of a Cactus, which peeped down over its head from a somewhat sunnier position. Sometimes it was a new Acrostichum, the fronds of which were almost as dark and shining as a branch of Portugal Laurel; and then, again, upon another tree stem, might be found—rarest of the rare, and loveliest of the lovely—the pendent fronds of Asplenium mucronatum. This exquisite plant fixes its slender root in the bark of a tree, whence droops a cluster of narrow, pale green fronds, tapering through a length of from 2 to 4 feet, beautifully indented, and so light and delicate in structure that when held by the root and waved in the air they seem to float as if they were strips of gauze. Another remarkable Fern is the Trichomanes Prieurii, which was also very rare, but generally to be found in a dark and moist wood, near a place called the Presidencia. A fine frond of it is about 15 inches long, and very finely divided. In grows in such dark places that it cannot be appreciated till brought out into full daylight; but its colour then appears as something truly marvellous. The green is that of the deepest emerald, but it has a metallic lustre which seems scarcely 'canny' in a vegetable, though its beauty is exquisite. Its beauty is also, unhappily, evanescent. The lustre departs from it immediately, like the hues of a captured mackerel, and all the care in the world will hardly suffice to carry it home without shrivelling up in the vasculum. Though dried in the most painstaking fashion, every frond turns perfectly black, and looks as if it were made of fine black lace.

"In these scrambles and tusslings in the forests it was often difficult, and sometimes impossible, to avoid a tumble among the trailing plants, which were generally ready to trip up our feet; and we used to present a very shabby appearance when, dishevelled, covered with moss, and bathed in perspiration, we emerged upon the paths of daylight, and had the intense pleasure of sitting down to compare discoveries under the soothing influence of the pipe of tranquillity. But I must not let this hobby run away with me any further—it would fill a book by itself. My excuse for saying thus much must be that there are now so many thousands of people who delight in similar pursuits in Europe that I was anxious to give them a hint of what an infinitely grander field awaits them if they like to go to the Brazilian hills, where, without any difficulty, and with luxurious quarters to live in, they may ramble and botanise to their heart's content, till they come home hungry to dinner. They will find the coverts full of floral game from one end of the year to the other, and a three months' holiday from England will give them six or seven weeks for the *chasse*."

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"A French botanist at Rio once told me that it would take a fortnight to properly botanise one of the huge trees which from time to time fall without the aid of fire. For, in truth, each of them is not only a tree, but a garden; the whole stem is clothed with other plants and flowers, and so is each wide-spreading bough. In this way a vast variety of Orchids and Ferns, huge Arums, with shield-like leaves, large enough to cover a man, brilliant red and yellow Bromelias and Tillandsias, epiphytes and parasites of all descriptions, rope-plants, creepers, trailers, climbers, mosses, all live together like a happy family, far beyond the reach of man. So luxuriant is the vegetation that every seed appears to grow wherever it is deposited, and I have even seen a species of tall white Amaryllis in full blossom growing on the boughs of a Jiquitiba, nearly 100 feet above the ground. Such are the beauties which are doomed to crackle in wholesale conflagration to make way for the coffee-planter."

It is only necessary further to add that the book is well got up, and illustrated with a number of beautifully executed woodcuts.

—— Among the publications on our table are *Reflections and Maxims on the Conduct of Human Life*, by William Penn (Groombridge)—a collection of moral sayings which may have furnished a hint to Mr. Martin Tupper. An extract or two will suffice to show the nature of the book, which will be novel to many. "There are some men like dictionaries, to be looked into on occasion; but who have no connection, and are little entertaining." "Less judgment than wit is more sail than ballast." "Where judgment has wit to express it, there is the best orator."

—— To young men entering on a business career the perusal of a work entitled *Business*, by James Platt (Simpkin & Co.), may be recommended as inculcating sound wholesome notions of morality, together with much shrewd, practical advice. Would that business men—all men—could be brought to feel that there is no necessity for untruthful or knavish dealing. "No one is a penny the better for these crooked ways." The titles of the author's chapters will sufficiently indicate the nature of his work—Business, Health, Education, Industry, Perseverance, Arrangement, Punctuality, Calculation, Prudence, Tact, Truthfulness, Integrity, Money. Some readers might be repelled by such a list, but the subject-matter is pleasantly treated by one who has evidently had much experience of life, and does not merely preach.

—— Among new editions we have a second edition of *A Plain Guide to Good Gardening, &c.*, by Samuel Wood (Lockwood & Co.), which may be recommended to young gardeners, cottagers, and specially to amateurs, for the plain, simple, and trustworthy information it gives on common matters too often neglected.

—— Of Mr. W. Paul's *Villa Gardening* we have a third edition, entirely revised and re-edited (Warne & Co). This is intended for a superior class of gardeners than the preceding. Its tone is higher; it is suggestive rather than exhaustive; it is intended for the intelligent gardener who, knowing his alphabet, as it were, needs not so much an elementary grammar as a book of hints and suggestions. More than this we need not say of a book in its third edition, the work of so thoughtful and skilful a practitioner. We have read it with pleasure; and the only criticism we feel disposed to make is as regards the illustrations, which are by no means worthy of the text, and in which all sense of proportion and consistency is lost.

—— A standard French book on the culture of fruit trees is M. Du Breuil's *Principes Généraux d'Arboriculture*, of which the seventh edition is before us (Williams & Norgate). There is an English translation of this work, but we counsel every one who reads French with sufficient facility to peruse the original in preference to the translation.

—— Mr. Mechi's *How to Farm Profitably* (Routledge & Sons) is a reprint of many of the pithy, argumentative writings of this well-known and highly-respected agricultural writer. Whatever we may think of some of his notions, there can be but one opinion as to his thorough honesty of purpose, and of the great good that he has effected by his "sayings and doings."

—— The June number of the *Gardener* contains more articles, long and short, than we can enumerate; that on the Pine and Grape trade is worthy the attention of all gardeners who send their produce to Covent Garden and other markets. The difference between the prices paid by the dealer to the pro-

ducer, and charged by the former to the consumer, are often out of all proportion. The result is that fruit and vegetables for the masses are at this season almost impossible luxuries, and this in spite of the large importations from the Continent and elsewhere.

Natural History.

LANDRAIL (CREX PRATENSIS).—No sound is more familiar or well known in spring in the northern and midland counties than the call of the corn-crake, landrail, or daker-hen, and yet we seem to know but little of its habits—very few of our popular books on natural history mention it. This may arise partly from its shy, retiring ways; it is a bird often heard but seldom seen. Although I have lived in the country all my life, and heard many hundreds of them continually crying "crex-crex," yet I have been privileged to see very few, and to observe only one or two individuals. It is true I have chased many in our rich grass or Clover fields; sometimes it would shout as if in defiance close to my feet, then, when engaged searching the spot, it would cry "crake-crake" quite in a far-off part of the meadow, as if mockingly; so that after carefully searching for an hour or more I have given up the pursuit in despair. "Do you ever find a landrail's nest?" said I to a ploughboy the other day. "What is that?" "Why a corn-crake?" Again I asked. "No, master; did you ever find one?" he finally replied. Partridges, larks, peewits, &c., are found in abundance; but it is indeed seldom a landrail's nest is discovered. The nest is almost always among growing herbage—grass, Clover, or corn—is composed simply of dry grasses, generally placed in a bare patch, where it scoops out the earth or sand. Seldom more than ten eggs are found in the nest; eight is the most frequent number. The eggs are whitish in ground, suffused with a reddish tinge, and spotted and speckled with brownish red and purplish grey.

From its peculiar habit of running beneath the grass and eluding the eye, it has been difficult to observe minutely; from this cause may have arisen the mistaken idea, as fully believed by olden British naturalists, that it made its peculiar cry, "crex-crex," by rubbing together the wings, not uttering it with its mouth. But this is an erroneous notion. During the last week, as I was proceeding leisurely along one of our pretty lanes, I was suddenly startled by hearing one just behind the hedge; fortunately, a couple of yards from where I stood, I came to the gate without making the least noise. I got on one of the bars, and stood quite still. I had not to wait more than a minute before the timid landrail popped out its head above the young Clover, and commenced to cry most vigorously "crex" or "crake-crake." I need scarcely say it uttered the sound only with its mouth. Its attitude when taking any observation of the surrounding neighbourhood is very interesting. It stands with its head and body erect, and the neck so outstretched that if the bird was hung up by its head it could not be more elongated. It also appears to assume this position when shouting to its mate. I have observed that after pairing they are engaged several days before finally selecting the spot for their nest. Jesse seems to have fallen into a strange error when he states they lay from fifteen to twenty eggs, though when he states that it puts on the semblance of death when in danger he is perfectly correct, for I one day was witness to a similar occurrence. As I was going through a meadow, in which grew a crop of Clover and Rye-grass, I observed a small Skye terrier which accompanied me on the occasion make a sudden spring. Hastening to the place I met the dog, carrying in its mouth a corn-crake, which he had unexpectedly surprised on its nest. At once, without hesitation, he left the bird at my feet; I picked it up, supposing it was dead, for it had every appearance of being so. Not caring to carry it home, I threw it on the ground a little distance away, when, judge my surprise; it as quickly sprang on its feet, and was out of sight almost in an instant. I thought it would not forsake the nest, for I know no bird more affectionate and solicitous for the welfare of its young, or any that sit more closely on the nest; in this instance, however, I was disappointed, nor did I ever hear their agreeable evening song in the neighbourhood afterwards—they must have quitted the meadow without losing much time. Another nest I found in a singular place: they selected a hollow amongst the roots, and beneath the trunk of a large Horse Chestnut, growing on the border of an orchard. The nest was hollowed out in the sand, and lined with a few dried grasses; but it was so snug, and out of sight, that they succeeded in leading away their brood in safety.

Its annual migration still puzzles many naturalists; how, and when it migrates, is to some persons very mysterious, for it does not seem to be adapted for flying long distances. Its wings are short, and placed so forward, according to the Selborne historian, "so out of the centre of gravity, that it flies in a very heavy and embarrassed manner with its legs hung down." It certainly depends more upon its swiftness in running than flying for its safety when danger is nigh. Like the cuckoo it startles us by its sudden though clear ringing call-note early in May, and it as suddenly disappears.

Our tenant-farmers ought to feel proud and gladly to welcome this yearly visitor; indeed, I feel grieved and sorry when I hear of any being destroyed. No greater friend enters our corn fields or pasture lands, for it must destroy an immense quantity of snails. It does not, as we frequently hear it asserted, feed upon seeds; no doubt a few seeds may occasionally be detected in its crop, but is not this as often the case with the thrush? If it was a vegetable feeder we should find small stones or gravel in the gizzard; I confess I never saw such. Watch its motions: to do this stand quite motionless on the fence, in a few minutes you will observe the grass waving in its track. It would be difficult to convince an individual not accustomed to country life but that it was some small rabbit or leveret running along the furrows—it resembles one when running to and fro more than anything to which I can compare it. Presently it will approach where you stand, quite fearlessly, and pushing its head amongst the grass, pick its dainty morsel of snails here and there, at the same moment eating them with an evident relish. I have thus watched them before sundown when out for an evening's stroll on more than one occasion, and I feel satisfied that they live upon snails and worms almost exclusively at this season of the year; doubtless they also occasionally pick a few tender blades of grass, but their principal meal is snails.

Another characteristic must not be overlooked—the corn-crake is a jealous fellow. Woe be to the poor partridge if it ventures near its sacred precincts; it will bravely declare war, and fight courageously for its supposed right of tenure. I have noticed the fact of its most cautiously surveying the whole of the neighbourhood, for it will for several days prior to selecting its nesting site go over the ground inch by inch in a radius probably of fully 10 acres. If on this survey it should happen to find any other feathered occupant of the soil, the next evening will witness a moonlight flit, and Mr. and Mrs. Landrail will take their departure to another meadow, where they can reign supreme. Is not this a wise provision of Nature?—on the one hand to rid the land of many injurious pests, on the other that sufficient food be always within reach for their brood. *R.*

WASPS AND HORNETS (p. 757).—In reference to Mr. Grieve's observation on the very interesting subject of the comparative number of wasps appearing in different springs, I can say that here (that is, near Isleworth, W.), they have been, judging from personal observation, about an average number—rather over than under. Hornets I have seen none of, the comparatively small quantity of woods, and of decayed trees allowed to stand in the fields, not being favourable to their presence. During the winter a single queen wasp appeared occasionally in the house (possibly the identical insect reappearing), but in some degree interesting as showing a state of weather occasionally rousing from hybernation.

Having for some special reasons during a long course of years collected or attended to the appearance of queens in the spring, a large number passed through my hands, but they were for separate minute examination, in which old specimens laid by, or collections crushed in a letter, or kept a few days, would have been noticed at once; and the numbers brought in under these circumstances coincided both much more nearly with Mr. Grieve's account of what has been brought him this year, and with what I noticed myself, than with the enormous quantities we read of as occasionally brought.

The numbers of queens in the spring relatively to the numbers of nests and state of weather in the previous autumn and winter, and of nests in the coming season relatively to the quantity of queens now observed (for we may presume a larger or smaller quantity remaining unhurt, according to the larger or smaller noticed, unless under special circumstances of destruction), is a matter interesting in many ways besides its obvious economical utility; and it would be very interesting to many if some one having opportunity would take it up, and, to begin with, have an examination of the wasps brought in for payment made by some competent observer.

If caught on the place there is no reason they should not be daily brought in, and, under these circumstances, would be distinguishable at a glance from old specimens. The fresh bright colours, the freshness of the internal contents, and also the absence of any putrid smell and the very large size, would be characteristics that would guide those not used to attending to insects; and for the wasp season a few notes, as of the spring appearance of queens, and the numbers and species of the nests, accompanied by a few observations such as would be easily taken of the size of the nest (which varies much in different years), and also the weather accompanying. These notes continued over a few years would probably give us a deal of information that might be turned to valuable account. *O.*

—— I fancy my friend Mr. Peter Grieve is congratulating himself rather too soon on the scarcity of these pests this season (see p. 757). Perhaps they are only late, like our Roses and a good many other things. In seasons like the present, the season of paying for queen wasps, where it is adopted, might well be extended for another month. It is doubtful if there will be many young wasps this year until July. Besides, at this season the wasps mostly hie off into the woods; they feed on the blossoms of Sycamore and Limes, and seldom visit the garden much after the budding of the Gooseberries, of which they seem very fond, until some ripe fruits bring them back again. I hope Mr. Grieve is right, and that wasps and hornets will continue scarce; but we must not holloa till we are out of the wood, and we are by no means out yet in regard to these troublesome pests. The comparatively waspless May is readily accounted for by the lateness of the season, and is well matched by what threatens to be almost a Roseless June, unless in the warmer localities. The wind has again got round to the north as I write (June 10), and the air has all the freshness of March rather than of Midsummer. *D. T. F.*

Reports of Societies.

Liverpool Horticultural: *June* 5.—The committee of this Society, anxious, no doubt, to contribute its quota to the Whitsuntide attractions, and also to swell the funds of its exchequer—a very vital point in the affairs of the Society at present—held a show in St. George's Hall on Whit-Monday, the 5th inst., which must be said to have been a success, allowing for the very poor patronage which the Society receives from the gentry in the neighbourhood. British gardeners, like British sailors, will fight for honour, even where the prizes to be gained are not deeply gilded with that yellow tinge which is supposed to be indicative of the standard coin of the realm, yet are ever ready to enter into friendly competition with one another under circumstances when it dare not be said that they are prompted by monetary considerations—a fact, I think, which speaks strongly in our favour, and one which ought to encourage a spirit of imitation amongst those who can afford to show their appreciation of our efforts in a practical form.

It has not hitherto been a rule with the Horticultural Society of Liverpool to hold a show on Whit-Monday, but it is to be hoped that the success on this occasion will be a sufficient inducement to the Society to hold the show annually. Fruit growers were not invited to exhibit, according to the schedule issued by the Society, so that plant growers had it all their own way—a fact to be deplored in a neighbourhood where fruit-growing will hold its own against any part of England. The premier prize for plants (stove and greenhouse) was very rightly awarded to Mr. Blomily, gr. to Henry Crossfield, Esq., who is now the rising and most successful plant grower in this locality. The most noticeable objects in this collection were Oncidium flexuosum, beautifully flowered Croton pictus, rather deficient in colour, but otherwise a well-grown plant; a noble sample of Ficus Parcellii, richly coloured; Erica Cavendishiana, and Aphelexis humilis, both well bloomed, and an exceedingly fine plant of Cycas revoluta. The same exhibitor was placed 1st in the class for six stove or greenhouse plants, and to my

mind the plants in this class were more praiseworthy, in point of cultivation, than those that gained first honours in the class for ten. The Cocos Weddelliana is a wonderfully grown plant for the time it has been in Mr. Blomiley's hands, and is a masterpiece of skilful cultivation. A finely-bloomed Eucharis amazonica relieves the monotony of so much green, and is always refreshing to the eye, alike at midsummer or Christmas. Ixora coccinea was literally hanging with blooms, which in a week or so will be a grand sight. Epacris Eclipse was a fairly-grown plant, and so was a nicely-trained plant of Stephanotis floribunda.

Mr. Whitfield, gr. to J. T. Cross, Esq., had some well-bloomed Cattleyas, which were past their best, but one plant was exceptionally fine, and quite an acquisition to the show.

The show upon the whole was rather overdone with green. Ferns and Palms predominated at a time of year when one would expect a gorgeous display of flowers. Fuchsias and Pelargoniums helped in a great measure to enliven the scene, but late in the evening the latter showed unmistakable signs of being tortured by a warm, overheated atmosphere.

The Ferns were well done: a plant of Pteris scaberula, from Mr. Anderson, gr. to Lieut.-Colonel Clay, was the most meritorious object in the show.

Amongst cut flowers the Roses shown by Mr. McInnes, of Heath Bank, Wallasey, were a source of delight to many of the visitors. I was pleased to see the Roses were considered worthy of the prominent position allotted to them, occupying as they did one end of the centre table in the hall, and backed up by a magnificent collection of new and rare plants from Messrs Kerr & Sons, of the Aigburth Nurseries. It will be seen that the visitors had every opportunity of admiring a stand of flowers, the equal of which is seldom seen in Lancashire thus early in the season.

In addition to the collection of plants sent by Messrs. Kerr were a beautiful lot of table and other useful plants sent by Messrs. J. Davies & Co., Wavertree.

I must not forget to mention that Mr. Jameson, gr. to the Earl of Crawford, Haigh Hall, Wigan, showed two bunches of Lady Downe's Grape, cut from the Vines last February, as plump and fresh as any I have ever seen at Christmas. It is a pity that such examples of high cultivation should pass by without due recognition of their merits. The representatives of our local press are not posted up in matters horticultural, and, if they do make an attempt at description, they generally turn the object to be described wrong end upwards for their readers. The bloom upon these Grapes was so deep and striking that every practical eye was at once attracted by it. I have no doubt it would be interesting to many of your readers, as it would be to me, to hear from Mr. Jameson what time in the autumn these Grapes were ripe, and how he managed to keep them in such a state of preservation. *W. Hinds, Otterspool, Liverpool.*

Hereford Horticultural Exhibition: *June* 5.—This show was held in a marquee of about 125 feet in length by 60 feet in width. The peculiarity of the show was the absence of any prize competition. In order to obviate the objections so often made against the system of exhibiting plants in competition for money prizes, sums of money are given in proportion to the importance and value of the plants exhibited, as gratuities to exhibitors' gardeners, and also to enable them to pay the expenses of transit. The tent was divided into three rows of staging, the line to the north-east being occupied by stove and greenhouse plants, that on the south-west being reserved for an exquisite and varied assortment of Rhododendrons, Azaleas, Japanese Conifers, interspersed with tasteful mosaics formed by rock plants; and the centre stage, which was in three tiers, gave a very imposing aspect to the show by the assemblage of rich flowering plants on the lower steps, above which were choice Tree Ferns, and towering over all a row of Conifers. Near one entrance was a well constructed rockery by Messrs. Cranston & Mayos, and at the opposite end of the enclosure were some stately plants indigenous to Australia and New Zealand. This firm occupied nearly one-third of the space. The manner in which the different plants and flowers had been worked into a compact and beautiful design made that part of the tent a gay parterre. Some idea of it may be formed when we say that the plot of ground was divided into panels, the partitioning posts being hidden by Thuja Lobbii. The panels were filled up with Rhododendrons and hardy Azaleas, with mosaic work of rock plants, surrounded by Conifers backed with Thuja, and Aralia Sieboldii. At the angle near the doorway was the rustic rockwork, 14 feet in height and 6 feet in width, which was made by the same firm. It mainly consisted of wood and virgin cork, filled with plants of various descriptions. Mr. Tugwell, of Crowe Hall, Bath, sent a collection of Heaths and Clematis, which were well grown. Mr. Arkwright sent a box of Tea-scented and Noisette Roses, a selection of various sorts of Rhododendrons in bloom, also Draceenas, Ferns, &c. Messrs. Dennis & Co., Chelmsford, had on view a neat conservatory constructed of wood, with octagonal ends, each window-panel being made to act, if required, as a door, there being effective ventilation in the roof; and a range of early and late vineries, with a plant-house in the centre. The conservatory was occupied by a collection of greenhouse plants, which had been supplied by Mr. Grove, of Hereford. Messrs. Boulton & Paul, of Norwich, showed a tenant's portable span-roof greenhouse, which does not require any brickwork; and also a lean-to plant-house easily fixed, &c.

Blackburn Horticultural: *June* 5, 6, *and* 7.—Horticultural exhibitions, like everything else of a kindred character, can only be fully successful when attended by the people in numbers; for however liberally supported by those who with laudable zeal endeavour to benefit those around them through diffusing a taste for the pursuit, unless the masses can be induced to visit these displays they ultimately fail. To this the promoters and managers of the numerous societies that exist all over the manufacturing districts of Lancashire and Yorkshire are fully alive, hence, as far as possible, they hold their shows at a holiday time, when they expect, and not in vain, that at that time the displays will be sufficiently attractive to draw large numbers from amusements of a more exciting nature. For this reason the Blackburn Society annually decide to hold their exhibition in Whit-week, although its clashing with the great gathering at Manchester has the effect of preventing some exhibitors from showing who otherwise would in all probability put in an appearance, and which would impart more interest to the exhibition by making the competition keener. As it is, the principal prizes are taken by a few individuals, who possess extensive collections of fine plants. The show as before was held in the cricket ground opposite the park—a suitable and convenient spot.

In the principal class of ten stove and greenhouse flowering and foliage plants there was a very close competition between J. Thompson, Esq., and R. B. Dodgson, Esq., who were 1st and 2d in the order their names are placed, both showing fine plants. In the winning lot was a good Azalea optima, Clerodendron Balfourianum, a grand Anthurium Scherzerianum, and equally good foliage plants. Mr. Dodgson's group contained the glowing Azalea Duc de Nassau, well done, and an excellent Cycas revoluta. Mr. Walton, nurseryman, Edge End, was 3d, with a very nice collection.

Mr. Dodson was the only exhibitor for Mr. Bull's cups for twelve new plants, showing a nice dozen.

The prizes offered by Mr. B. S. Williams for twelve miscellaneous plants in 10-inch pots, were taken by Mr. Dodgson and Mr. J. Thompson.

For six stove and greenhouse plants in a keen competition Mr. J. Thompson was 1st, Mr. Dodgson 2d; in the winning group was an Anthurium with remarkably large flowers, in the 2d prize lot was one of the best bloomed examples of Franciscea calycina we have ever seen. For four stove and greenhouse plants the places were reversed—Mr. Dodgson being 1st, and Mr. Thompson 2d.

For six Orchids Mr. Dodgson took 1st, 2d, and 3d prizes, with good plants well flowered. The best amongst these were two examples of the rare and splendid Aerides crassifolium—one of these we suppose to be the best specimen in the kingdom of this the finest Aerides known; on the single spike, some 2 feet in length, were twenty of its large beautifully coloured flowers. Other examples of successful Orchid growing were a good plant of Cattleya Warneri, the scarce and difficult-to-flower Cyrtopodium punctatum, Vanda suavis, V. tricolor, and Oncidium serratum.

For four Orchids Mr. Dodgson was also 1st, Mr. J. Thompson 2d. In the classes for six Azaleas, four ditto, and a single specimen, Mr. J. Thompson was 1st in all.

For six ornamental foliage plants Mr. Dodgson was 1st; in his group was a remarkable plant of Draceena Shepherdi, at least 8 feet high, clothed with healthy foliage. Mr. J. Thompson was 2d. For eight foliage plants in 8 inch pots, Mr. Dodgson was likewise 1st.

In the classes for hardy Ferns, W. Wilkinson, Esq., was 1st for both eight and four, and Mr. Dodgson 2d in both.

Zonal Pelargoniums were nicely shown, Mr. Thompson being 1st: his best were Mrs. W. Paul and Jean Sisley; J. Brown, Esq., who was 2d, had amongst others Richard Headly and Mrs. Turner. Tricolors were not large but well clothed with finely-coloured leaves. W. F. Calvert, Esq., W. Thompson, Esq., and J. Brown, Esq. took the prizes in the order in which their names stand. For six Bronze Pelargoniums Mr. Brown was 1st, and Mr. Calvert 2d.

For three Lilies A. J. Jackson, Esq., was 1st. Mr. C. Rylance, of Ormskirk, had a special prize of £10 for twelve Pelargoniums, which were equal to anything shown, large, and covered with a profusion of finely-developed flowers, good in foliage and possessing the advantage of being sufficiently but not over-tied in the too flat, objectionable shape so often met with in exhibition examples of these plants. The most effective were Fairest of the Fair, Rob Roy, Favourite, Prince of Pelargoniums, Una, Digby Grand, Sunshine, Warrior, and Exhibitor. All these were remarkably well done.

Mr. B. S. Williams, Holloway, and Messrs. Rollisson, Tooting, each exhibited a large, varied, and interesting collection of new and rare plants; as also did the local nurserymen—Mr. Walton, Mr. S. Purkiss, and Mr. Bury—which added materially to the effect of the display. (*From a Correspondent.*)

Law Notes.

ACTION BY ARCHITECTS TO RECOVER COMMISSION FROM A TRADESMAN.—*Walker & Elsom v. Weeks.*—This was an action before Mr. Baron Huddleston, in the Exchequer Division, to recover £160, claimed as commission upon a certain building transaction.

Mr. Day, Q.C., in opening the case, stated that the Messrs. Walker & Elsom were architects, and had been engaged by a Mr. Higgs, a person of some notoriety a few years ago, in connection with the building of a palatial mansion and other structures in the neighbourhood of Twickenham. This Higgs was apparently but a clerk in an office in the City, but managed to amass a large amount of wealth, and to live in rather a princely style. In 1868 Mr. Higgs, being desirous of adding some horticultural attractions to his residence on the banks of the Thames, the defendants, Messrs. Weeks, who are horticultural builders in Brompton and Chelsea, were applied to for the purpose of getting certain conservatories or other structures erected. Mr. Alfred Weeks, a supposed partner of the defendants' firm, in the course of the communication which took place between Mr. Elsom, one of the plaintiffs, and himself, upon the subject of the required additions, promised the plaintiffs 5 per cent. commission upon the transaction arising from this negotiation, and Mr. Elsom agreed to accept the same. This action was to recover £160, together with certain charges accruing on the delay that had occurred, amounted altogether to £250.

Mr. Elsom, the plaintiff, in his cross-examination, stated that he was not acquainted with the defendants before the present transaction. He had been acquainted with Mr. Higgs for some years, having been engaged with his partner as architect in the building of stables. He had an agreement with him, but not in writing, by which he was to receive 5 per cent. on the cost of the structure. He would not have made a claim against the defendants had not Mr. Alfred Weeks himself offered 5 per cent., saying it was the custom of the firm to make that allowance.

Mr. Torr: Then, in fact, you did nothing for this sum. You accepted it as a mere gratuity?

Witness: Yes; I submitted my drawings to the defendants. I had no authority at the time to employ the defendants specially.

Certain law points having been argued by the learned counsel on both sides, they ultimately agreed to submit the matter to the decision of the learned Judge.

Mr. Baron Huddleston stated that, as his opinion had been asked, and as he had an opportunity of speaking to the Lord Chief Baron (who was presiding in the next court), he had no hesitation in giving it, and that was, that there was no evidence to go to the jury in support of the plaintiff's claim, and therefore he should order a nonsuit. *Builder.*

A DISPUTED CONTRACT.—*Aldous* v. *Payne.*—In this case, heard in the Brompton County Court on the 24th ult., before Mr. Serjeant Wheeler, a claim was made for £21 for laying out grounds and garden.

Mr. Aldous, the plaintiff, said he was a florist and gardener at South Kensington, and last year he was engaged by the defendant to prepare plans and estimate for laying-out the grounds and gardens at Mornington House, North End, Fulham. He had to obtain assistance in the matter, and the plans and specifications were submitted to the defendant and approved of, but after the work was done defendant refused to pay, on the plea that it was not done according to order.

John Higham, ornamental gardener, having given evidence in support of the plaintiff's case,

Mrs. Payne, the defendant, said she instructed the plaintiff to lay out the garden after the pattern of Mr. Scott Russell's garden, but there was nothing said about "plans," because there was no necessity to prepare any.

After some further evidence had been given,

His Honour pointed out the difference between an estimate and a contract, and ultimately gave judgment for the plaintiff for £12. *Builder.*

Variorum.

IN the Himalayas trees grow up to a height of 11,800 feet, and there are often forests just below this line. In the Andes the growth of trees ends at 12,130 feet; in the Alps it ends on an average at 6400 feet; but it is stated that specimens of trees are found above 7000 feet. In the Himalayas there is no grass vegetation above 15,400 feet, but the pasture-grounds in Thibet are known to extend over an elevation of from 15,000 to 16,350 feet. *Statistical Reporter.*

A FLOWER SERMON was preached on the 4th inst., in connection with the Vineyard Children's Church, Richmond, Surrey, by Mr. Hicks. The children brought a large quantity of flowers, which lent a very attractive appearance to the British School-room, where the service was held. Mr. Hicks' sermon, founded on Solomon's Song, ii. 11, and following verses, consisted mainly of good advice given to the childen in enlarging on the following series of alliterative mottos :—

F airest flowers are	**F** rail.
L owly flowers are	**L** oveliest.
O nly open flowers are	**O** dorous.
W ild flowers are	**W** atched over.
E arly flowers are eagerly	**E** xpected.
R eal flowers have	**R** oots.
S weetest flowers are	**S** tricken.

At the close of the service the flowers were conveyed to the Richmond Infirmary and the workhouse, where they were received with evident pleasure by the inmates.

THE FORESTS OF MOLDAVIA AND WALLACHIA.—The following notes are gathered from a recent report on the resources of those Principalities. These forests, it is said, spread over 2,000,000 hectares, or about one-sixth of the whole extent of the Principalities themselves, and lie in the districts forming the spurs of the Carpathians. They would be of immense value were it not for the difficulties of transport in regions as yet unopened by roads. The forests abound in fine timber of every sort—Pine, Fir, Larch, Oak, Beech, Ash, Elm, Lime, Birch, Maple, and wild Cherry. The quality of the wood, well tried, and seasoned by the changes of temperature, is said to be hard and excellent. But in these inaccessible regions Nature is the only woodsman, and the mountain forests are in a great measure left to take care of themselves, while the districts bordering upon the plains have been ruthlessly and ignorantly disforested regardless of the age or size of the timber, and this wholesale spoliation continues. Last session, however, a tentative law was passed, by which the forests of the State were subjected to control and their cutting restricted and regulated according to the age and size of the timber; but the Chamber has not yet ventured to apply the law to private estates. The severe droughts and bad harvests, however, are attracting public attention to the disforestment of the country, and it is to be hoped that it may be arrested in time to prevent irreparable injury.

RESOURCES OF BAHIA.—An excellent report on the commercial resources of Bahia has been furnished to the Foreign Office. The vegetable wealth of Brazil is no less great than the mineral, and the majesty of her forests surpasses all conception. In the fields, on the highest mountains, amongst the rocks, and on the sandy coasts, vegetation shows itself vigorous and in almost uninterrupted growth. The Carnauba Palm (Copernicia cerifera) is described as one of the most useful trees in Brazil, growing without any culture abundantly in Ceara, Rio Grande do Norte, Bahia, &c. Perhaps in no country is a plant applied to so many and varied purposes. It resists the most prolonged drought, and permanently retains its green luxuriance. Its roots possess the same medicinal effects as the Sarsaparilla. "From the trunk are obtained strong fibres, which acquire the prettiest lustre, as well as corner-pieces of timber and excellent pallisades for enclosures." The Palmetto top, when young, serves as an appreciable and nutritious food, and therefrom also wine, vinegar, and a saccharine matter is extracted, as well as a kind of sago. This plant has often served, during the period of excessive droughts, as the means of support to the population of the two first-named provinces. From the wood and trunk of the tree musical instruments are made, as also tubes and pumps for water. The delicate fibrous or spongy portion of the petiole makes a good substitute for cork. The pulp of the fruit is of an agreeable taste, and the nut, oily and emulsive, is, after being roasted and reduced to powder, used as coffee by many persons in the interior. From the trunk of the tree a kind of flour similar to maizena is extracted, as well as a liquid resembling that from the Bahia Cocoa-nut. From the dried leaves mats, hats, baskets, and brooms are made, and of this material large quantities are exported to Europe, where it is employed in the manufacture of fine hats: the whole value of which exportation, and of such as is utilised by national industry, amounts now to about £117,500 per annum. Finally, from its leaves is produced the wax used in the manufacture of candles, and which has an extensive consumption in the northern provinces, especially at Ceara, where it has become an important branch of industry. The annual exportation of this wax is calculated at 871,400 kilos, exceeding in value £162,500. Of the crops classified under the head of agricultural products, that which has been most largely developed, and which furnishes the largest amount of public revenue is Coffee. It is the most important product whether as to quality (Mocha alone excepted), or as to quantity. At first no great care was bestowed on its cultivation or preparation, but during the last fifteen years it has been considerably improved through the introduction of machinery and of improved processes. The following account is given of the history and cultivation of Coffee in Brazil :—

"Originally from Arabia it was introduced into the French colony of Cayenne by La Motte Aigron in the year 1722. The Brazilian subject, Pulheta, while on a voyage to that colony, managed, not without much difficulty, to bring to the city of Belem (Para) a few of the seeds of this precious vegetable. In that province Coffee trees were multiplied through the care of Agostinho Domingos and others. A deserter, it is said, introduced the plant from Para into Maranham about 1770. The Judge Joao Gualberto Castello Branco, appointed Chancellor to the High Court of the Relacao at Rio de Janeiro, took with him with great care two small Coffee trees during the vice-royalty of the Marquis de Lavradio in the middle of the eighteenth century, when sugar and cereals constituted the great fountains of the wealth of the province of Rio de Janeiro, those two plants were by order of that notable statesman cultivated in a private garden in the neighbourhood of the convent of Adjuda, and in this manner those two small and humble plants did, in the course of one century, become the first and most important branch of the public wealth. The Coffee tree having rapidly multiplied, extended itself then over dozens of miles, was transplanted to Minas Geraes, and St. Paul's, Bahia, and Ceara.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, JUNE 14, 1876.

MONTH AND DAY.	BAROMETER.		TEMPERATURE OF THE AIR.					HYGROMETRICAL DEDUCTIONS FROM GLAISHER'S TABLES 5TH EDITION.		WIND.		RAINFALL.
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 66 Years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.		
June	In.	In.	°	°	°	°	°	°				In.
8	29.67	−0.13	64.0	45.6	18.4	53.5	−4.2	47.4	79	S.S.W. to S.W. to N.		0.00
9	29.62	−0.17	59.9	48.2	11.7	51.5	−6.4	48.5	89	NNW. to N.E.		0.06
10	29.97	+0.18	63.3	46.4	16.9	52.8	−5.3	45.2	76	N. to N.N.E.		0.00
11	29.95	+0.16	70.0	43.4	26.6	56.5	−1.8	45.8	67	NNW. to N.W.		0.00
12	29.84	+0.06	74.7	46.2	28.5	58.0	−0.5	53.8	86	WSW. to S.W.		0.00
13	29.84	+0.05	63.1	55.1	8.0	57.5	−1.2	50.8	78	N. to N.E.		0.04
14	29.85	+0.07	68.3	48.9	19.4	56.5	−2.4	47.8	72	S.S.W. to S.W.		0.00
Mean	29.82	+0.03	66.2	47.7	18.5	55.2	−3.1	48.5	78	variable		sum 0.10

June 8.—A fine, but very cloudy and dull day.
— 9.—Overcast, dull, and cold throughout. Thin rain in evening.
— 10.—Fine but cloudy, dull at intervals. Strong wind.
— 11.—A fine warm cloudless day.
— 12.—Fine warm day. Cloudy and gloomy. Slight fog in early morning.
— 13.—Overcast and dull throughout. Occasional rain after 3 P.M.
— 14.—A fine bright day, partially cloudy.

—— During the week ending Saturday, June 10, in the neighbourhood of London, the reading of the barometer at the level of the sea increased from 29.80 inches at the beginning of the week to 30 inches by the morning of the 4th, decreased to 29 86 inches by the morning of the 5th, increased to 30.04 inches by the morning of the 6th, decreased to 29 73 inches by the morning of the 9th, and increased to 30 23 inches by the end of the week. The mean reading for the week at sea level was 29 97 inches, being 0 12 inch below that of the preceding week, and 0.02 inch below the average.

The highest temperatures of the air observed by day ranged from 67½° on the 7th to 60° on the 9th, the mean value for the week being 63¾°. The lowest temperatures of the air observed by night varied from 45½° on the 8th to 51° on the 6th; the mean weekly value was 48½°. The mean daily range of temperature in the week was 15½°, the greatest range in the day was 18½° on the 8th, and the least 11¾° on the 9th. The mean daily temperatures of the air were as follows :—4th, 55°; 5th, 53°; 6th, 55°.9; 7th, 56°.6; 8th, 53°.5; 9th, 51°.5; 10th, 52°.8; and the departures in defect of their respective averages were :—2°.1, 4°.3, 1°.6, 1°, 4°.2, 6°.4, 5°.3. The mean temperature of the air for the week was 54°, being 3°.6 below the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 104° on the 7th, and 102° on the 10th, on the 9th it did not rise above 67½°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 37° on the 8th, and 36° on the 10th; the mean of the several low readings was 43¾°.

The direction of the wind was S.W., W.S.W., and N.N.E., and gentle in motion. The weather during the week was somewhat fine, though very cloudy and cold.

Rain fell on four days in the week; the amount collected was 0.13 inch.

In England the highest temperatures of the air observed by day were 70¼° at Cambridge and 69° at Manchester and Hull, at Liverpool 60¼° was the highest temperature; the mean value from all stations was 66¼°. The lowest temperature of the air observed by night was 39½° at Nottingham, at Brighton and Plymouth 47° was the lowest temperature; the general mean from all stations was 43½°. The range of temperature in the week was the greatest at Nottingham and Manchester, both 29°, and the least at Liverpool, 14½°; the mean range from all stations was 23°. The mean of the seven high day temperatures was the highest at Cambridge and Nottingham, both 66°, and the lowest at Liverpool, 58½°; the mean from all stations was 63°. The mean of the seven low night temperatures was the lowest at Eccles, 43½°, and the highest at Brighton, 50°; the general mean from all stations was 47¼°. The mean daily range of temperature in the week from all stations was 15¾°, the greatest daily range was 22° at Nottingham, and the least, 10½°, at Liverpool. The mean temperature of the air for the week was 53¼°, being 3¾° lower than the value for the corresponding week in 1875. The highest was 55°, at Cambridge, and the lowest 51°, at Eccles.

Rain fell on every day in the week at Plymouth, and on five days at most other stations. The amounts measured at the several stations varied from nine-tenths of an inch at Birmingham to one-tenth of an inch at about London; the average fall from all stations was three-tenths of an inch. The weather during the week was somewhat dull and cloudy, and still cold. A thunderstorm occurred at Bristol and Wolverhampton on the 9th inst.

In Scotland the highest temperatures of the air varied from 65° at Edinburgh and Dundee, to 61° at Glasgow; the mean from all stations was 63¼°. The lowest temperatures of the air ranged from 38° at Paisley, to 44° at Glasgow; the mean value from all stations was 41¼°. The mean range of temperature from all stations was 22°. The mean temperature of the air for the week was 51½°, being 2½° lower than the value for the corresponding week in 1875. The highest was 52¾°, at Edinburgh and Dundee, and the lowest 49¾°, at Greenock. Rain fell to the amount of 2 inches nearly at Paisley, and 1½ inch at Greenock; at Dundee and Aberdeen rather more than half an inch fell. The average fall over the country was 1 inch.

At Dublin the highest temperature was 66½°, the lowest 38¼°, the range 28¼°, the mean 52½°, and the fall of rain 0.72 inch.

JAMES GLAISHER.

Answers to Correspondents.

BOOKS: *A Belgian Subscriber.* Jacques & Hericq's *Manuel des Plantes*; Asa Gray's *Field, Forest, and Garden Botany of North America*, are more complete but not easier.

GOLDEN HORSE CHESTNUT: *J. G. & Co.* Judging from the leaves sent, this must be a fine thing, greatly superior to the ordinary gold-blotched Horse Chestnut.

GRAPE JUDGING AT MANCHESTER: *W. H.* Having seen the Grapes we are inclined to agree with the judges.

LAWN MOWERS: *A. S.* The words quoted in the advertisement you refer to appeared in our editorial columns in March, 1870, p. 311; since that time the mowers of all the makers have been more or less improved, but the one in question still maintains its good character as a hand machine.

NAMES OF PLANTS: *W. H. J.* Polypodium Robertianum. — *C. W.* The Fern-leaved Beech (Fagus heterophylla).—*J. R. H.* We cannot name the Fern without a frond.—*Subscriber, H.* 3. Mimulus glutinosus; 4. Hemerocallis flava; 5, Magnolia macrophylla. The Conifers next week.—*P. P.* Polystichum angulare.—*A Subscriber.* 1. Magnolia conspicua; 2, Weigela rosea; 3, Deutzia gracilis.—*P. H. G.* Lycaste tetragona, Lindl.—*W. C. Strieker.* 1, Den-

drobium moschatum, cupreum, calceolaria; 2, Dendrobium Pierardi; 3, Aerides suavissimum. You should have sent some flowers. The bidentate middle lacinia of the lip and the position of calli in the species are those of suavissimum; 4. Oxalis corniculata; 5, Centradenia inæquilateralis, more generally known as C. rosea.—*Roth.* Your plant is Orobus vernus.—*J. R. H.* Viburnum Lantana.—*E. S., Peckham.* 1, Hottonia palustris; 2, Lepidium campestre; 3, Poterium Sanguisorba; 4, Carex vulpina; 5, Senebiera Coronopus.—*W. Nelson.* 5 and 6 are both forms of Saxifraga hypnoides.—*J. E. G.* 3, Ilex Aquifolium platyphylla; 4, I. a. aurea.—*J. G. P.* Saxifraga cæspitosa var. hirta; Aster sp.—specimen insufficient; and Cerastium strictum.—*W. S.* 2, Æschynanthus sp. This may be something new, as we have no specimens of it, nor can we find any figure resembling it. Please favour us with another specimen, and if possible give details as to its origin; 4, Pyrus japonica var. alba.—*W.* Sempervivum grandiflorum.—*J. W. & Sons.* Andropogon pertusus.

ONIONS: *H. F. R., Brighton.* The swelling of the base of the leaves and stem of the young Onions is not caused by the attack of an insect. We will endeavour to give a better explanation in our next.

PEACH BLISTER: *G. M., Matching.* The leaves of your Peaches are affected by the disease known as the Peach blister; it is not the work of an insect. See p. 136 in our issue for July 31, 1875.

SCOTS FIR: *Roxburghshire.* This is the work of a species of Adelges; the young are just appearing. We should be much obliged by our correspondent favouring us with specimens when the insect is more advanced. We can offer no remedy, but shall be anxious to know the progress and result of the attack. *A. M.*

STRAWBERRIES: *Amateur.* Take your gardeners' advice and leave them alone.

SYMPHYTUM ASPERRIMUM: *C. R. F.* Propagate by division of the roots, or by seed if you can get it. It likes a good stiff soil, with a cool bottom, and will take care of itself when once planted.

THRIPS ON VINES: *M. N.* Paint the return-pipes with sulphur mixed thinly with milk and water. This is the only advice we can give you in the absence of particulars.

VINES: *W. P.* The leaves show an evident want of vigour, and we should think the spotting is due to the action of bright sunshine upon the leaves while they have been wet. If the other treatment has been equal no harm can have been done by syringing so late as eight in the morning, nor by firing since February.

WORKING HOURS: *Under Gardener.* The number of hours in a day or in a week that you have to work is a matter of arrangement between you and your master, but we quite agree with you that gardeners in many cases might with great advantage to both parties reduce the number of working hours on one day in a week, though it is a question whether Saturday would be the most convenient. You must not forget that gardening is totally different to all other occupations. Vegetation, unlike machinery, will not stand still. A labourer or a mechanic can put down his tools at any time and resume them when he chooses; a gardener cannot do this with his plants and his houses, and while such is the case we are afraid long hours will always be the rule.

COMMUNICATIONS RECEIVED.—J. F—L. H. G.—J. Q. (too late).—G. T. (thanks).—E. S. D.—W. H.—J. S.

DIED, on June 1st, at the Tansley Nurseries, near Matlock, JOSEPH SMITH, Sen., in his 82d year.

—— On the 13th inst., AGNES FANNY, fifth daughter of the late Mr. THOMAS OSBORN, of Fulham, in her 24th year.

—— At Pinefield Nurseries, Elgin, on the 13th inst., ROBERT MORRISON, nurseryman, aged 50 years.

Markets.

COVENT GARDEN, June 15.

There is no alteration to quote from last week. Business is steady, with a good supply. Outdoor Strawberries from the West of England have arrived, but in a very backward condition, as also a few Kent Cherries. *Jas. Webber, Wholesale Apple Market.*

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz.	4 0	..	Horse Radish, p. bun.	3 0	5 0
— Jerusalem, p. lb.	0 3	..	Leeks, per bunch	0 2	0 4
— Eng. Globe, doz.	6 0	..	Lettuces, per score	2 0	..
Asparagus (English), per bundle	2 0	10 0	Mint, green, bunch	0 4	..
Beans, French, p. 100	1 3	2 6	Mushrooms, per pott.	1 0	2 0
— Longpod, ½-sieve	6 0	..	Onions, young, bun.	0 4	0 6
Beet, per doz.	1 0	2 0	Parsley, per bunch	0 4	..
Cabbages, per doz.	1 0	2 0	Peas, green, per qt.	3 0	..
Carrots, per bunch	0 6	..	Potatos, new Jersey, per lb.	0 3	0 6
— new, do.	1 6	..	— Sweet, per lb.	0 6	..
Cauliflowers, spring, per dozen	4 0	9 0	Radishes, per bunch	0 1	0 3
Celery, per bundle	1 6	2 0	— Spanish, doz.	1 0	..
Chilis, green, doz.	1 6	..	Rhubarb, per bundle	0 6	1 0
Cucumbers, each	0 4	1 0	Shallots, per lb.	0 6	..
Endive, per doz.	1 0	2 0	Spinach, per bushel	2 0	..
— Batavian, p. doz.	2 0	3 0	Tomatas, per doz.	3 0	..
Herbs, per bunch	0 2	0 4	Turnips, new, bundle	0 9	1 0
			Veg. Marrows, each	1 0	..

Potatos (new).—Jersey Kidneys, 14*s.* to 18*s.*: Rounds, 12*s.* to 14*s.* Cherbourg Kidneys, 14*s.*: Rounds, 11*s.* to 12*s.* Penzance Kidneys, 16*s.* to 20*s.* per cwt.—Old: Rocks, 105*s.* to 110*s.*; Regents, 140*s.* to 180*s.*; Flukes, 130*s.* to 160*s.*; Victorias, 120*s.* to 160*s.* per ton. Stocks nearly exhausted.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, per ½-sieve	1 6	5 6	Melons, each	0 12	0
Apricots, per box	2 0	3 0	Nectarines	10 0	36 0
Cherries, per box	3 0	6 0	Oranges, per 100	6 0	12 0
Cobs and Filbts., lb.	0 9	1 0	Peaches, per doz.	10 0	36 0
Figs		10 0	20 0	Pears, per doz.	3 0	15 0
Gooseberries, gr., qt.	0 0	1 0	Pine-apples, p. lb.	3 0	10 0
Grapes, per lb.	3 0	12 0	Strawberries, per lb.	2 0	8 0
Lemons, per 100	6 0	10 0			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	4 0	12 0	Pelargoniums, zonal, 12 sprays	0 4	1 6
Azaleas, 12 sprays	0 6	2 0	Pinks, white, per doz. bunches	3 0	9 0
Carnations, 12 blooms	2 0	4 0	— coloured, 12 bun.	2 0	6 0
Cineraria, per bunch	1 0	2 0	Primula, dbl., p. bun.	1 0	1 6
Eucharis, per doz.	6 0	12 0	Rhododend., 12 bds.	1 6	6 0
Gardenia, per doz.	2 0	9 0	Roses, indoor, p. doz.	1 0	9 0
Heliotropes, 12 spr.	0 6	1 0	— outdoor, 12 bun.	6 0	12 0
Lily of Valley, 12 spr.	1 6	3 0	Spiræa, 12 sprays	1 0	4 0
Mignonette, 12 bun.	6 0	9 0	Stephanotis, 12 spr.	3 0	12 0
Nemophila, 12 bun.	1 6	4 0			
Pelargoniums, 12 spr.	0 6	2 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, per doz.	6 0	18 0	Lobelia, per dozen	4 0	12 0
Begonias, per doz.	6 0	12 0	Mignonette, do.	6 0	9 0
Bouvardias, do.	12 0	18 0	Myrtles, do.	3 0	9 0
Calceolaria, per doz.	9 0	24 0	Nasturtiums, dozen	4 0	9 0
— herbaceous, doz.	6 0	18 0	Palms in variety, each	3 6	21 0
Campanulas, p. doz.	12 0	18 0	Pelargoniums, scarlet, per doz.	3 0	9 0
Coleus, per dozen	4 0	9 0	— in variety, doz.	12 0	30 0
Cyperus, do.	6 0	12 0	Petunias, double, doz.	9 0	36 0
Dracæna terminalis	30 0	60 0	— single, per doz.	6 0	12 0
— viridis, per doz.	18 0	24 0	Roses, Fairy, do.	9 0	15 0
Ficus elastica	2 6	15 0	— various, do.	18 0	30 0
Fuchsia, per doz.	6 0	18 0	Spiræa, per doz.	9 0	24 0
Heaths, in var., doz.	12 0	30 0	— palmata, each	2 0	5 0
Hydrangea, per doz	12 0	18 0			

CORN.

Trade at Mark Lane on Monday was very quiet, and under the influence of warm, brilliant weather prices were hardly so firm. English Wheat was well held because of its scarcity, but there was a fair average supply of foreign Wheat, for which offers of less money were not in all cases refused. Grinding Barley was steady, while other descriptions were dull. Malt supported with difficulty its rates of the previous Monday. For Oats a moderate inquiry prevailed, and the better kinds were somewhat dearer. Maize, Beans, and Peas were quoted as before, the sale for each being very slow. Flour was dull, and the quotations drooped slightly.—On Wednesday the supply of English Wheat was very short; but this was partly compensated for by the liberal foreign imports, and holders of both descriptions found it somewhat difficult to maintain the prices of Monday. Barley had rather a hardening tendency, and Oats were quite as dear. Beans, Peas, and flour, however, were dull, with a tendency in buyers' favour. Maize was unaltered. Average prices of corn for the week ending June 10:—Wheat, 47*s.* 4*d.*; Barley, 32*s.* 10*d.*; Oats, 27*s.* 5*d.* For the corresponding week last year:—Wheat, 41*s.* 11*d.*; Barley, 34*s.* 11*d.*; Oats, 32*s.* 11*d.*

CATTLE.

At the Metropolitan Market on Monday there was a large supply both of English and foreign beasts, and the average quality was good. Trade was active, and late quotations were fully realised. There were a few more English sheep than on Monday se'nnight, and not quite so many foreign. There was a good demand, and in some instances higher prices were obtained. Trade was not quite so good for lambs, and choice calves were dear. Quotations:—Beasts, 4*s.* 8*d.* to 5*s.* 6*d.*, and 6*s.* to 6*s.* 4*d.*; calves, 4*s.* 8*d.* to 6*s.* 4*d.*; sheep, 5*s.* 8*d.* to 6*s.* 4*d.*, and 6*s.* 8*d.* to 7*s.* 4*d.*; lambs, 8*s.* to 8*s.* 8*d.*; pigs, 4*s.* 8*d.* to 6*s.*—Trade on Thursday was dull in the principal departments, with prices weaker. For beasts, with a dull sale, lower rates were accepted to close sales. The sheep market was adversely influenced by the reduced rates in the dead-meat market, and rather lower rates were current. Prime calves were easier in price; lambs were not so well supported in value; and pork remained nominally unaltered.

HAY.

Business at the Whitechapel market on Tuesday was steady, and prices were unaltered. The supply was moderate. Prime Clover, 100*s.* to 145*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 132*s.*; inferior, 55*s.* to 75*s.*; straw, 36*s.* to 46*s.* per load.—On Thursday there was a steady trade with fair supplies. Quotations:—Clover, best, 115*s.* to 145*s.*; inferior, 85*s.* to 95*s.*; hay, best, 112*s.* to 132*s.*; inferior, 55*s.* to 75*s.*; and straw, 35*s.* to 46*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 135*s.* to 147*s.*; inferior, 100*s.* to 120*s.*; superior Clover, 150*s.* to 160*s.*; inferior, 120*s.* to 134*s.*; and straw, 47*s.* to 50*s.* per load.

POTATOS.

The Borough and Spitalfields reports for Monday state that the supply of Potatos was very short, and for all kinds a steady trade was experienced at the following rates:—Kent Regents, 160*s.* to 200*s.* per ton; Essex ditto, 120*s.* to 150*s.*; Scotch ditto, 170*s.* to 200*s.*; rocks, 100*s.* to 120*s.*; flukes, 200*s.*; Victorias, 180*s.* to 210*s.*; kidneys, 140*s.* to 150*s.*

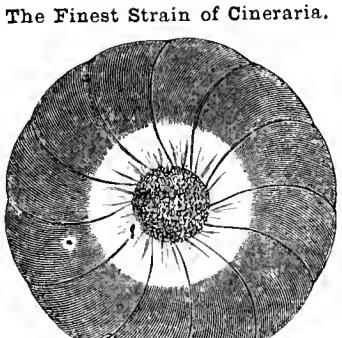
SUTTON'S

SUPERB STRAINS OF

FLORISTS' FLOWERS,

POST FREE.

The Finest Strain of Cineraria.



SUTTON'S SUPERB CINERARIA.

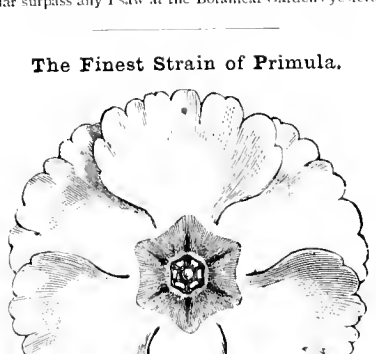
This will be found unequalled by any in cultivation, the seed having been saved from the finest named varieties only.

Price 2*s.* 6*d.* per packet, post-free.

From Mrs. A. ALLERTON, *Prittlewell, May* 8.

"Our Cinerarias this year (from your seed) are splendid; they far surpass any I saw at the Botanical Gardens yesterday."

The Finest Strain of Primula.



SUTTON'S SUPERB PRIMULA.

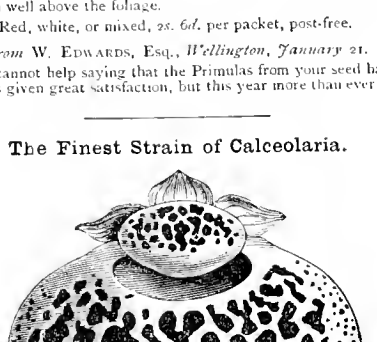
This choice stock has been carefully selected from the largest fringed flowers of good colour. Habit, robust; with bloom thrown well above the foliage.

Red, white, or mixed, 2*s.* 6*d.* per packet, post-free.

From W. EDWARDS, Esq., *Wellington, January* 21.

"I cannot help saying that the Primulas from your seed have always given great satisfaction, but this year more than ever."

The Finest Strain of Calceolaria.



SUTTON'S SUPERB CALCEOLARIA.

This splendid strain has been most carefully selected from the very finest collections in cultivation. The plants are compact in habit, with beautiful green foliage, and a profusion of bloom. The flowers are perfect in form and substance, and of every shade of colour.

Per packet, 2*s.* 6*d.*

From A. E. RUSSELL, Esq., *Dalnabreck, July* 10.

"My Calceolaria plants, from seed purchased of you last year, are particularly fine, of very compact habit, and beautiful in colour."

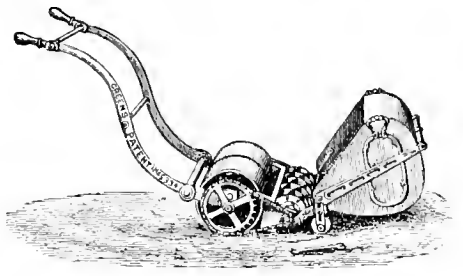
SUTTON & SONS,

THE QUEEN'S SEEDSMEN, READING.

GREEN'S PATENT "SILENS MESSOR,"

Or Noiseless Lawn-mowing, Rolling, and Collecting Machines for 1876.

The Winner of every Prize in all cases of Competition.



The superiority of these Machines over those of all other makers is universally acknowledged. They will Cut either long or short Grass, Bents, &c., wet or dry.

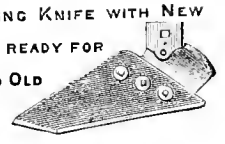
These advantages no other Lawn Mowers possess.

They are the simplest in construction, the easiest to work, the least liable to get out of order, make little noise when in use, and are the most durable Lawn Mowers extant.

Every Lawn Mower sent out is guaranteed to give entire satisfaction, otherwise it may be returned at once free of cost to the Purchaser.

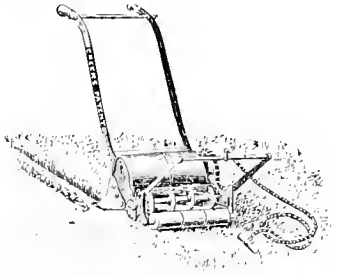
N.B.—Those who have Lawn Mowers to repair will do well to send them either to our Leeds or London Establishment, where they will have prompt attention, as an Efficient Staff of Workmen is kept at both places.

TURF CUTTING KNIFE WITH NEW DRUM FIXING READY FOR ATTACHING TO OLD MOWERS.



GREEN'S PATENT "MONARCH" LAWN MOWER

With Chain and Internal Gear combined.



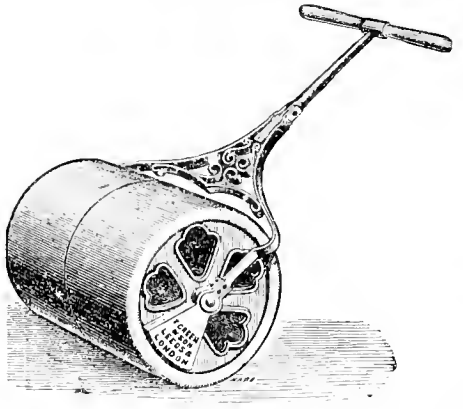
"MONARCH" MS. CHAIN OFF SET FOR CUTTING TURF.

Descriptive Illustrated Price List free on application.

GREEN'S PATENT ROLLERS

For Lawns, Drives, Bowling Greens, Cricket Fields, and Gravel Paths.

SUITABLE FOR HAND OR HORSE POWER.



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THOMAS GREEN & SON,

SMITHFIELD IRONWORKS, LEEDS:

And 54 and 55, BLACKFRIARS ROAD, LONDON, S.E.

MASON & HAMLIN: AMERICAN ORGANS.

The Excellence of these Instruments has been testified to by Ch. Gounod, Sir Julius Benedict, Dr. Stainer, E. J. Hopkins, Dr. E. F. Rimbault, Fredk. Archer, Chevalier Lemmens, Augustus L. Tamplin, and other eminent Professors of Music.

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BELGIAN GLASS for GREENHOUSES, &c.,

Can be obtained in all sizes and qualities, of

BETHAM & SON,

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B. & S. have always a large Stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., in 16-oz. and 21-oz.

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PATRONISED BY THE QUEEN,

H.R.H. THE PRINCE OF WALES,

The British, Indian and Colonial Governments, 8000 of the Nobility, Gentry, and Clergy, Railway and Canal Companies, Collieries, Iron-masters, &c., &c.,

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It is especially applicable to

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CAN BE LAID ON BY UNSKILLED LABOUR.

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2 cwt. free to all Stations.

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The Best, Cheapest, and Most Durable Paint for all kinds of Work, Internal and External, is

THE GRANITIC PAINT.—Its body is superior to Lead, its durability far greater, and it is more economical. Sold, ground in Oil, in ALL COLOURS, by the GRANITIC PAINT COMPANY, Removed to 45, Fish Street Hill, E.C.

Damp Walls Cured and Decay in Stone Prevented, at a Trifling Cost, by

THE SILICATE ZOPISSA COMPOSITION.—Manufactured in all Colours, or as a COLOURLESS LIQUID, by the SILICATE ZOPISSA COMPOSITION AND GRANITIC PAINT COMPANY, Removed to 45, Fish Street Hill, E.C.

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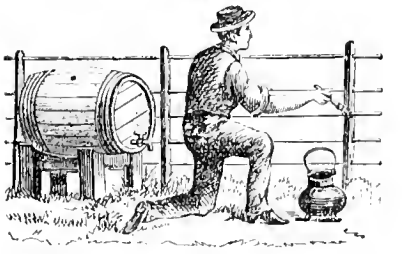

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Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

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Glangwilly, Llanpumpsaint, Carmarthen, Nov. 27, 1873.—"Mr. Lloyd Lloyd encloses cheque for £3 5*s.*, amount due to Messrs. HILL & SMITH, and he considers the Black Varnish one of the most useful things he ever possessed."

Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley; and 118, Queen Victoria Street, London, E.C., from whom only it can be obtained.

CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would specially draw attention to the fact that every cask of their Varnish is legibly marked with their name and address, without which none is genuine

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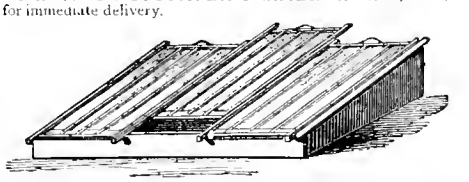
NEW PATENT GREENHOUSES.—Can be erected without the aid of either carpenter, glazier, painter, or bricklayer. New Lists, containing a number of Illustrations and Prices, free by post.

PATENT PLANT PRESERVERS.—Now ready, our new List of Prices, with full descriptions, clearly showing the uses to which these handy articles may be applied. Free by post.

MELON OR CUCUMBER FRAMES.—All sizes, ready for immediate delivery.



Height at back, 24 in.; at front, 13 in.; sides, 1¼ in. thick; lights, 2 in. thick. Made of best red deal, painted three coats; every pane of glass (21 oz.) is nailed as well as puttied in; each light has an iron strengthening rod and handle.

Cash prices, carriage paid to any station in England:—

	£	s.	d.		£	s.	d.
All 6 feet wide.				All 6 feet wide.			
4 ft. long, 1 light ..	1	17	6	16 ft. long, 4 lights ..	6	7	6
8 ft. „ 2 „ ..	3	5	0	20 ft. „ 5 „ ..	7	17	6
12 ft. „ 3 „ ..	4	17	6	24 ft. „ 6 „ ..	9	7	6

Illustrated Catalogue for 1876, containing upwards of sixty Engravings, with prices, of Conservatories, Greenhouses, Peach Houses, Forcing Houses, Pits, &c., free by post for 12 stamps.

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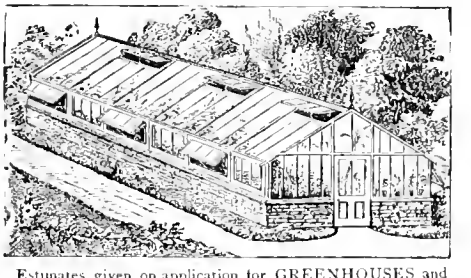
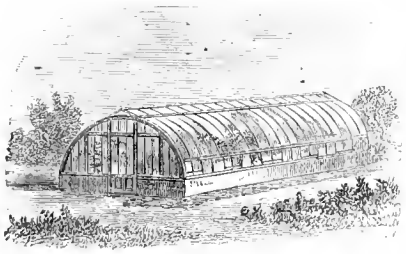
W. H. LASCELLES, HORTICULTURAL BUILDER, Finsbury Steam Joinery Works, 121, Bunhill Row, London, E.C.



Estimates given on application for GREENHOUSES and CONSERVATORIES of all kinds, and to any design.

GARDEN BOXES and LIGHTS.	Each	
	£	*s.*
Portable Box with One Light, 6 feet by 4 feet, glazed good 16-oz. sheet glass, painted four coats, and packed ready for use	3	5
Portable Box with Two Lights, as above, each light 6 feet by 4 feet	6	5

LIGHTS ONLY.		
3 feet by 4 feet Light, not painted nor glazed	3	6
Ditto glazed, good 16-oz. sheet glass, and painted 4 coats	10	0
6 feet by 4 feet, not painted nor glazed	6	0
Ditto glazed and painted four coats	16	0



LASCELLES' PATENT BENT WOOD CONSERVATORIES and GREENHOUSES.—All Gardeners know that Wood is better than Iron for Plant Growing, and by the above system a handsome curved house can be erected as cheaply as a plain straight one.

The curved house is more durable, stronger, lighter in construction, and no bent glass is required.

W. H. LASCELLES, 121, Bunhill Row, London, E.C., will supply Drawings and Estimates free of charge.

THE NEW

Awning Garden Seat,

With two revolving tables and shifting gear for curtains.

Also the NEW SELF-COILING HOSE REELS.

Of all Ironmongers, or of the Manufacturer, ALFRED WRINCH, Ipswich.

Metallic Hothouse Builder to Her Majesty.

HENRY HOPE (late Clark & Hope, formerly Clark).

HOTHOUSE BUILDER and HOT-WATER APPARATUS ENGINEER.

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BOOKS of DESIGNS, 5s. each.

☞ The Extensive Ranges of Metallic Hothouses in the Royal Gardens, Windsor and Osborne, were executed at this Establishment.

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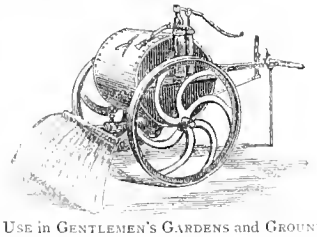

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The delivery valve can be worked at the outlet when filling a watering pot. It holds 35 gallons. The Spreader, for watering lawns, &c., can be removed at pleasure.

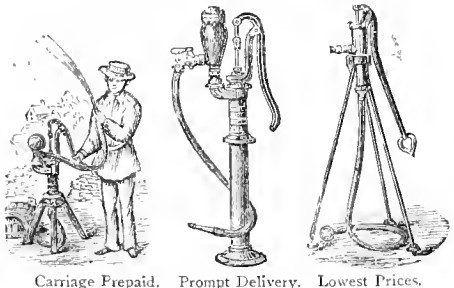
PRIZE WATER and LIQUID MANURE CARTS.

Prices and particulars on application at the London Road Ironworks, Chelmsford.

PUMPS—PUMPS—PUMPS.

For Baths, Cisterns, Kitchen, or Garden use.

GARDEN PUMPS, NON-FREEZING PUMPS, COTTAGE PUMPS, LIQUID MANURE PUMPS.



Carriage Prepaid. Prompt Delivery. Lowest Prices.

Catalogue on application.

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THE

New Patent Garden Pump.

Price 25s. complete

(Packed for Rail, 2s. extra).

This Pump is on an entirely new principle, and for ease of working and portability stands unrivalled.

Descriptive Catalogue gratis and post-free.

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THE THAMES BANK IRON COMPANY,

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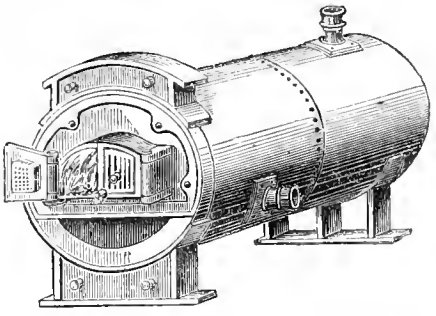
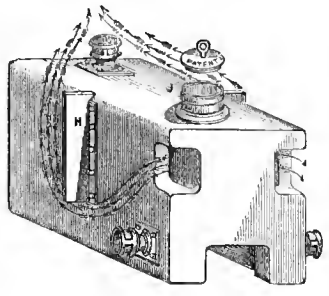
HOT-WATER BOILERS. PIPES, CONNECTIONS



("TRENTHAM IMPROVED" BOILER.



("CLIMAX" BOILER.)

NEW PATENT "CLIMAX" BOILER (1874). See p. 666, 1874, *Gardeners' Chronicle.*

"GOLD MEDAL" BOILER (Birmingham, 1872).

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☞ *The largest and most complete Stock in the Trade; upwards of Twenty Thousand Pounds' worth to choose from.*

"WITLEY COURT" BOILER (Silver Medal 1872).

"TRENTHAM IMPROVED" BOILER, with Waterway End and Smoke Consumer.

"TUBULAR," and every other Boiler of known merit or excellence.

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MILL'S PATENT AUXILIARY FUEL ECONOMISER,

Which can be attached to any ordinary Boiler. These Tubes are the greatest Economisers of Fuel and Preservatives of Boilers, Fire Bars, and Furnace Fronts ever yet introduced to the public.

HOT-WATER APPARATUS ERECTED COMPLETE.

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WILL BE HAPPY TO FURNISH

Plans and Estimates for the Erection and Heating complete of Conservatories and Hothouses of every description.

VERANDAHS, PAVILIONS, GLASS APPROACHES, &c.

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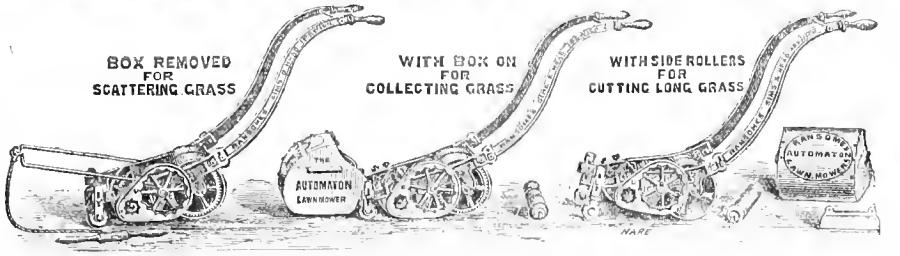
Every Article warranted CORPORATE OBTAIN MARK. Established 138 years.

Paxton Works Sheffield.

RANSOMES' AUTOMATON LAWN MOWERS.



THE BEST, SIMPLEST, AND MOST DURABLE MACHINES.

The "Automatons" are thoroughly strong, well-made Machines, easy to work, and cut the grass perfectly and leave no ribs. They collect the cut grass into a box in front of the Machine, or deliver it on the Lawn behind the Machine as required. They have adjustable handles to suit the height of any person, and are sent out with both front and side rollers, the former for use in general work, and the latter when cutting long grass, or when it is unnecessary to roll the grass in front of the cutters. These Machines have the best wheel gearing, combined steel and iron knives, an automatic silent action, instead of ratchets, and all the parts easily adjustable. Twelve thousand in use. **Sizes, 8 to 20 inches. Prices from 55s.**

RANSOME'S "LITTLE GEM" LAWN MOWERS,

For small gardens. These perfect "Little Gems" have a grass-collecting box, and the height of cut can be varied. They have an adjustable ledger blade, and the height of the handle can be adjusted to suit any person. The cutters can be reversed when blunt by driving the Machine in the opposite direction.

Prices, 6 in., 25s.; 8 in., 35s.

Free Delivery to all principal Railway Stations. Trial allowed.

RANSOMES, SIMS AND HEAD, ORWELL WORKS, IPSWICH.

BARNARD, BISHOP, & BARNARDS,

NORFOLK IRONWORKS, NORWICH.

GREATEST NOVELTY OF THE SEASON.

PATENT ROTARY PUMP.

Hitherto unsurpassed in action by any other Pump.

Throws a continuous stream from 40 to 50 feet.

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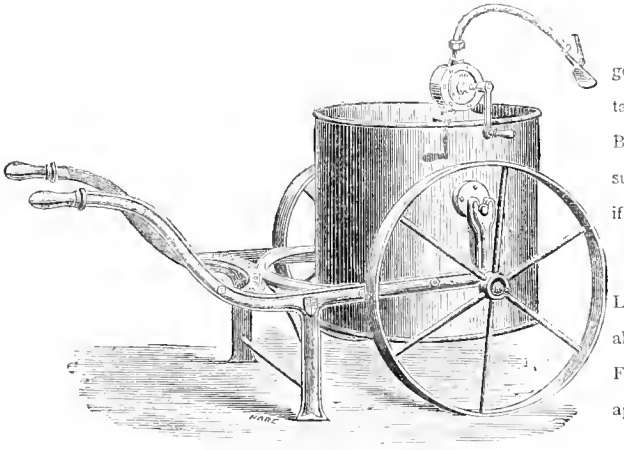

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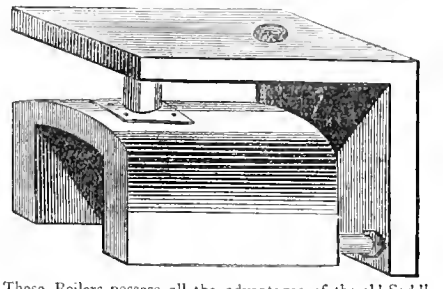

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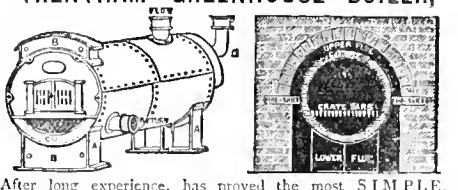

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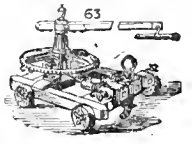

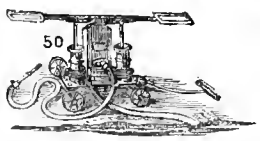

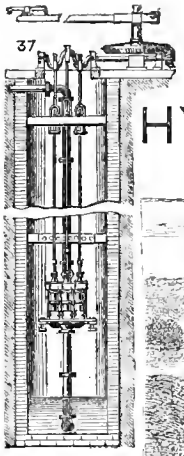

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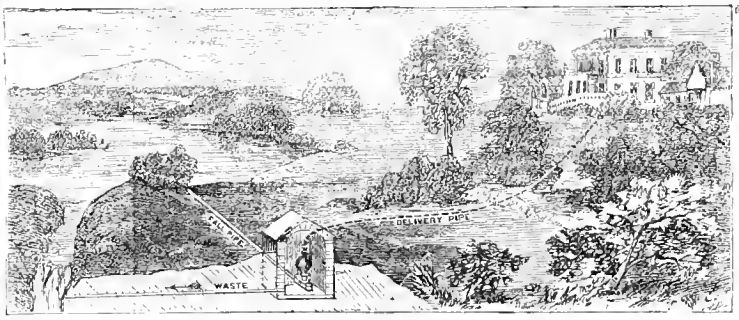

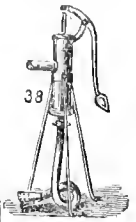

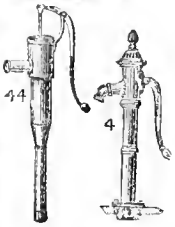

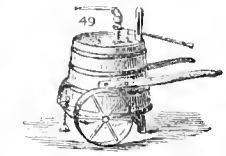

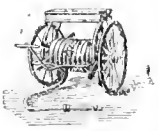
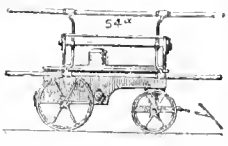

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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

No. 130.—Vol. V. { New Series. } SATURDAY, JUNE 24, 1876. { Registered at the General Post Office as a Newspaper. } Price 5d. Post Free, 5½d.

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CRYSTAL PALACE.—GREAT ANNUAL ROSE SHOW, FRIDAY, June 30, and SATURDAY, July 1. On Friday (by Special Desire), Comedy, "The Great Divorce Case." On Saturday, Fête of the German Gymnastic Society. Myers' Great Hippodrome on both days. Admission to Palace on Friday, 2s. 6d.; on Saturday, 1s.; or by Guinea Season Ticket on each day.

ALEXANDRA PALACE.—GREAT ROSE SHOW of the Season, FRIDAY and SATURDAY, July 7 and 8. LAST DAY of ENTRY, July 1. Schedules of Prizes and all particulars may be had on application to ALEX. McKENZIE, 1 and 2, Great Winchester Street Buildings, E.C., and at the Alexandra Palace, Muswell Hill, N.

COLCHESTER and EAST ESSEX HORTICULTURAL SOCIETY.—A two days' Show will be held at Lexden Park, Colchester, on JUNE 28 and 29, in connection with the Essex Agricultural Show. £200 will be offered for Plants, Roses, Orchids, &c., in classes for Amateurs and Growers. Entries to be sent in by the 21st. Two Military Bands will attend. Prize Lists, &c., may be obtained of Mr. WM. HARRISON, Sec. Colchester, and Birch Villa, near Colchester.

THE WISBECH GREAT ANNUAL ROSE SHOW and HORTICULTURAL EXHIBITION will be held in the Grounds of Colville House, on THURSDAY, June 29. All Exhibitors compete without entrance fees. Schedules of Prizes and all information on application to CHARLES PARKER, Hon. Sec. Wisbech.

WARWICKSHIRE HORTICULTURAL SOCIETY.—LEAMINGTON SHOW, JULY 4. LAST DAY for RECEIVING ENTRIES from intending Competitors is Wednesday, June 28. JOSIAH SOUTHORN, Secretary. 15, Upper Parade, Leamington.

THE OUNDLE EXHIBITION of FLOWERS, FRUITS, VEGETABLES, POULTRY, PIGEONS, RABBITS, and CATS will be held on WEDNESDAY, July 5. Prizes, £170, with Special Prizes for STOVE and GREENHOUSE PLANTS, FERNS, and ROSES. All Entries close June 28. Schedules, &c., of the Secretary, ALFRED KING, Oundle.

NOTTINGHAM and MIDLAND COUNTIES GRAND ROSE SHOW and HORTICULTURAL EXHIBITION (Open to all England) will be held at the Arboretum, Nottingham, on THURSDAY, FRIDAY, SATURDAY, and MONDAY, July 6, 7, 8, and 10. The Mayor of Nottingham President. Prize List amounting to upwards of £600. Space will be allotted for the Exhibition of Horticultural Implements and Garden Furniture. Medals and Certificates of Merit awarded.
Schedules are now ready, and may with particulars be obtained on application to ALFRED KIRK. Municipal Offices, Nottingham.

THE WELLINGBOROUGH GREAT FLOWER SHOW will take place on FRIDAY and SATURDAY, July 7 and 8, in Mr. J. H. Banks' Fields.—£25 offered as Prizes for Cut Roses (open to all England); £50 offered as Prizes for Greenhouse Plants and Exotic Ferns (open to all England); Classes for Fruit and Vegetables (open); also a Gentlemen's Gardeners' Class; Ladies' Bouquet Class.
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To the Trade.

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CATALOGUES.—His Excellency Pierre Wolkenstein will feel greatly obliged if Nurserymen and Seedsmen will kindly send him their Catalogues. They should be forwarded (by post) to S. E. PIERRE WOLKENSTEIN, Secrétaire de la Société Impériale d'Horticulture de Russie, St. Petersburg.

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PRIMULA FIMBRIATA flore plena.—Double white and various other shades of colour. A few hundreds of good plants in 48's are offered cheap at per 100, to the Trade.—J. JACKSON, Nursery, Kidderminster.

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CHARLES TURNER'S DESCRIPTIVE LIST of PLANTS for the Season, including several new varieties now offered for the first time, is ready, and may be had on application. The Royal Nurseries, Slough.

Cinerarias.

MESSRS. JOHN STANDISH AND CO.'S strain of Cinerarias is now acknowledged to be the finest in the Kingdom. Carefully saved Seed may now be had post-free at 1s. 6d. and 2s. 6d. per packet. Wholesale price to the Trade on application. Royal Nurseries, Ascot, Berks.

CENTAUREA CANDIDISSIMA, in single pots, nice plants, 20s. per 100, package included. Not less than 25 at the above price. Half to quarter specimens. KALOSANTHES COCCINEA, well set for flower, 3s. 6d., 5s., to 7s. 6d. each. JOHN HOUSE, Eastgate Nurseries, Peterborough.

LUCOMBE, PINCE AND CO.'S new CLEMATIS DEVONIENSIS. This is a most beautiful and distinct variety, obtained by crossing C. Jackmanni and C. lanuginosa. The flower is the brightest and most delicate azure, unusually large and well formed, robust in habit, perfectly hardy, and a very free bloomer. Will be sent out the first week in July. Price 21s. each. Terms to the Trade on application. Exeter Nursery, Exeter.

SALES BY AUCTION.

Choice Imported Orchids from Brazil.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, June 26, at half-past 12 o'Clock precisely, a splendid importation of choice ORCHIDS from Brazil, just to hand, in the finest possible condition, by the R.M.S.S. *Douro*, consisting of grand masses of Oncidium Marshallianum, grand masses of Oncidium crispum Lælia cinnabarina, unusually fine Cattleya marginata Pineli, very fine, with green healthy leaves, some masses of unusual size; Miltonias in quantity, Cattleya crispa, Zygopetalum maxillare, Ionopsis pani ulata; also a small importation from Burmah, consisting of Dendrobiums, Vandas, Aerides in good condition; also established healthy plants of Phalænopsis amabilis, P. Schilleriana, P. Luddemanniana, P. grandiflora, a strong established plant of the extremely rare and beautiful Phalænopsis casta and P. leucorrhoda, &c.

On view the morning of Sale, and Catalogues had.

Oehids, Stove and Greenhouse Plants, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, June 27, at half-past 12 o'Clock precisely, a small collection of ORCHIDS and SPECIMEN STOVE and GREENHOUSE PLANTS from the North of England; 32 nice plants of Verschaffeltia splendida, and 14 Yucca aloifolia; 40 cases of Imported Orchids from Ecuador; several small collections of Established Orchids; China Tiles for Flower-boxes, &c.

On view the morning of Sale, and Catalogues had.

Imported and Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, June 28, at half-past 12 o'Clock precisely, a COLLECTION of ORCHIDS from Belgium, for Sale without Reserve; 50 cases of Imported Orchids, in fine condition; an Importation of Selenipedium species, and other Orchids from Mr. Wallis; and a small collection of Established Orchids, &c.

On view the morning of Sale, and Catalogues had.

Important Sale of Orchids

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, July 3, at half-past 12 o'Clock precisely, Established, semi-Established, and fresh Imported ORCHIDS from Brazil, many of them being very fine specimens, and all in the best possible condition, consisting of:—

Lælia purpurata	Cattleya Leopoldii	Fine.
,, elegans	,, amethystina	
,, præstans	Oncidium Marshallianum	
Cattleya labiata	,, concolor	
,, Schilleriana (very rare)	,, sarcodes	
,, marginata	,, crispum	

On view the morning of Sale, and Catalogues had.

Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, July 7, a small Collection of ESTABLISHED ORHIDS, embracing many choice and rare kinds.—On view the morning of Sale, and Catalogues had.

Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, July 7, at half-past 12 o'Clock precisely, an Importation of CATTLEYA SUPERBA, just received *ex* s.s. *Blenheim*. The plants of this, one of the most beautiful of the known Cattleyas, are in the best possible condition, many of them unusually fine masses; the growths plump and with fresh leaves on them, such as are seldom seen on newly imported plants. At the same time will be sold an Importation, *ex* s.s. *Chyebassa*, of DENDROBIUM M'CARTHIÆ, many of the plants remarkably fine, and in the best possible condition.

On view the morning of Sale, and Catalogues had.

Northampton Park Nursery, Douglas Road, North Islington, opposite Canonbury Railway Station, North London Railway. By order of the Executors.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises as above, on MONDAY and TUESDAY, June 26 and 27, at 11 for 12 o'Clock precisely each day, by order of the Executors of the late Mr. John Boff, in consequence of the Land being required by the North London Railway Company, about 30,000 BEDDING PLANTS, consisting of the usual Miscellaneous Assortment. Also the Valuable Collection of about 1500 Choice ORCHIDS, consisting of Phalænopsis, Vandas, Aerides, Saccolabiums, Odontoglossums, Dendrobiums, Cypripediums, Cattleyas, Lælias, Oncidiums, Lycastes, Pleiones (large specimens) &c.

N.B. The Greenhouses, Piping, Horses, Vans, Trade Utensils, &c., will be Sold in the month of August. Due notice of the Sale will be given.

May be viewed the Saturday prior to the Sale. Catalogues had on the Premises, and of the Auctioneers and Valuers, 98, Gracechurch Street, E.C., and Leytonstone, E.

To Horticulturists, Amateurs, and Others.

TO BE SOLD, in a charming neighbourhood, within 8 miles of Portsmouth, a very pretty VILLA RESIDENCE, standing in pleasing grounds, tastefully Laid Out, with large of quantity Glass in Vineries, Orchard House, &c., and about 7 Acres of Planted Ground, filled with choice and selected Pyramidal specimens of Apples, Pears, Plums, Damsons, Filberts, &c., all now in bearing condition, and from which any one may obtain a very handsome income. For particulars apply to Messrs. KING AND KING, Agents, Portsmouth.

TO BE SOLD, about 16,000 feet of GLASS, specially erected for Grape Growing for Market purposes, built regardless of cost and upon the most approved principles. The heating is most efficient, and the working details throughout perfect. The Houses are stocked with young Vines in grand condition and just coming into fruit.

TO BE LET, upon long Lease, about 4 acres of rich GROUND which is attached, and within 4 miles of Covent Garden, situate south. Apply to

Mr. RANSLEY TANTON, Horticultural Valuer: Office, 17A, High Street, Borough, London, S.E.

NURSERY and SEED BUSINESS for Immediate DISPOSAL in the North of England, and where a large trade has been done for many years. The present proprietor retiring. This is a first-rate opportunity for one or two persons of moderate capital, who have a good knowledge of the Trade. For further information apply to Messrs. POOLEY AND CO., 23, Bush Lane, Cannon Street, London, E.C.

RICHMOND HORTICULTURAL SOCIETY.

President: H.S.H. the Duke of TECK, G.C.B.

Under the Royal and Distinguished Patronage of—

H.R.H. the Duchess of CAMBRIDGE,

H.R.H. the Princess MARY OF CAMBRIDGE, Duchess of TECK.

H.R.H. the Duc D'AUMALE, &c.

The SECOND EXHIBITION of PLANTS, FLOWERS, FRUIT, VEGETABLES, and DINNER-TABLE DECORATIONS, will be held in the Old Deer Park, Richmond Green (by the kind permission of Mr. Fuller), on THURSDAY, June 29, 1876. Schedules may be obtained of the Hon. Secretary.

ALBERT CHANCELLOR, Hon. Sec.

1, King Street, Richmond, S.W.

SANDOWN PARK CLUB.

GRAND FLOWER and FRUIT SHOW.

A GRAND FLOWER and FRUIT SHOW, under distinguished Patronage, will be held in Sandown Park, Esher, Surrey, on FRIDAY and SATURDAY, July 7 and 8, when upwards of £350 will be given in Prizes. Schedules are now ready, and may be had on application to

JOHN WILLS, Royal Exotic Nursery, Onslow Crescent, South Kensington, S.W.

J. WHITTAKER BUSHE, General Manager.

SHROPSHIRE HORTICULTURAL SOCIETY.—The ANNUAL EXHIBITION will be held in The Quarry, Shrewsbury, on WEDNESDAY and THURSDAY, August 16 and 17. PRIZES amounting to about £230, including for 12 Stove and Greenhouse Plants, £15, £10, and £8. Schedules and all particulars from the Hon. Secs., Messrs. ADNITT AND NAUNTON, Shrewsbury.

WEST of ENGLAND ROSE SHOW.

THURSDAY, JULY 13, 1876.

TO AMATEURS.

A Handsome SILVER CUP, value 15 Guineas, will be offered by Messrs. CRANSTON AND MAYOS (in addition to the Society's Prize of £5), for the best 36 varieties of CUT ROSES.

Schedules with particulars on application.

CRANSTON'S NURSERIES, KING'S ACRE, NEAR HEREFORD.

ROBSON TESTIMONIAL.

Mr. JOHN ROBSON being about to leave Linton Park through ill health, it is thought by some of his Friends to be a good opportunity for presenting him with some token of the esteem in which he is held in this county.

Subscriptions will be received by

THOS. PHILPOTT, Linton.	P. GODDARD, Hunton Court.
W. SKINNER, Boughton.	C. WILLIAMS, Cranbrook.
S. SKINNER, Leeds.	W. POTTEN, Sissinghurst.
E. SKINNER, Loddington.	W. BRADLEY, H. A. Brassey, Esq.
G. ALLEFREE, Loose.	J. HADLOW, Chart.
BUNYARD & SON, Maidstone.	T. SKINNER, Sir E. Fulmer.
T. FROST, Maidstone.	T. RECORD, Vinters Park.

E. SKINNER, Hon. Sec., Loddington Farm, Maidstone.

WEBB'S NEW GIANT POLYANTHUS, Florist Flower, and GIANT COWSLIP SEEDS; also Plants of all the varieties, with Double PRIMROSES of different colours: AURICULAS, both Single and Double: with every sort of Early Spring Flowers. LIST on application.

Mr. WEBB, Calcot, Reading.

WEBB'S PRIZE COB FILBERTS, and other PRIZE COB NUTS and FILBERTS. LISTS of these varieties from Mr. WEBB, Calcot, Reading.

New Zealand Native Shrub and Tree Seed.

GEORGE PURDIE AND CO. have always on hand an assortment of the above, carefully selected. Three and Five Guinea Collections, including the leading AUSTRALIAN GUMS and WATTLES, post-free to all parts of the World. All Orders must be accompanied by a remittance.

GEORGE PURDIE AND CO., Seed Merchants, &c., Timaru, Canterbury, New Zealand.

Cabbage Plants—Cabbage Plants.

MESSRS. W. VIRGO AND SON can now supply in any quantities the following sorts—viz, Early Battersea, Pullen's Nonpareil, and Enfield Market, at 3s. 6d. per 1000; Robinson's Drumhead, at 3s. per 1000; and Red Pickling, at 5s. per 1000. All good strong healthy plants, and delivered on Rail. Post-office Order must accompany all orders from unknown Correspondents.

Wonersh Nursery, Guildford, Surrey.

SPECIMEN CONIFERS, EVERGREENS, FRUIT TREES, STANDARD ROSES, &c (30 acres).—Gentlemen who intend planting in the autumn are invited to the Eltham Nurseries during the summer months; they can then have an opportunity of selecting from the various foliages, also from many thousands of Standard Roses. The orders can be executed when required

JAMES W. TODMAN, Eltham Nurseries, S.E., 1 mile from Eltham Station, Loop Line, 2 miles from Blackheath, North Kent Line.

Surplus Stock.—Special Offer.

WILLIAM BADMAN offers as follows:—

4000 VESUVIUS, very strong bushy plants, 16s. per 100, 2s. 6d. per dozen.
4000 CRYSTAL PALACE GEM, 15s. per 100, 2s. per dozen.
5000 VERBENAS, Purple, White, Scarlet, 10s. per 100, 1s. 6d. per dozen. [per doz.
5000 ALTERNANTHERA AMŒNA, 10s. per 100, 1s. 6d.

Cemetery Nursery, Gravesend.

A. M. C. JONGKINDT CONINCK begs to offer:—

CROCUSES, DUC VAN THOLL TULIPS, LILIES, &c., at the lowest prices.

CRYPTOMERIA JAPONICA, strong 1-yr. seedlings, 20s. per 1000.

Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

E. G. HENDERSON AND SON.

SEEDS—EXTRA QUALITY.

PRIMULA SINENSIS FIMBRIATA, 2s. 6d. and 5s. per packet.
,, FLORE PLENA, 2s. 6d. and 5s. per packet.
CINERARIA and CALCEOLARIA, 2s. 6d. and 5s. per packet.
CYCLAMEN PERSICUM, choice quality, 1s. and 2s. 6d. per packet.
,, ,, double-flowered, 2s. 6d. and 5s. per packet
Wellington Nursery, St. John's Wood, N.W.

NEW and SELECT PLANTS, Post-free.—The following selections are very select and superb in each class; the Plants are well established, from single pots, and so packed as to ensure safe transit by post:—

FUCHSIAS, 12 new varieties of 1875, selected from the best, 4s.
,, 12 select varieties of 1874, very fine, 3s.
,, 12 varieties, best selected, of previous years, 2s.
HELIOTROPIUMS, 12 new and select varieties, fragrant, 2s. 6d.
GERANIUMS, Double, 12 new and select varieties, including George Sand, the largest and best double white, 6s.
,, 12 select varieties of Zonals, 3s.
,, 12 new varieties of Zonals of 1874, fine, 4s.
,, 12 new varieties of Zonals, selected from Pearson's, Bull's, Postans', Denny's, and Smith's, new varieties of 1875, very superb, 9s.
,, Golden Bicolor, 12 select varieties, fine, 4s.
,, Double, 12 new varieties of 1875, including Emily Laxton and the new striped variety, 9s.
VERBENAS, 12 very select varieties, show, fine, 2s.
LANTANAS, 12 very select varieties, free blooming, 2s. 6d.
PHLOXES, 12 superb varieties, hardy perennial, fine, 3s.
PENTSTEMONS, 12 very select varieties, extra fine, 4s.
LOBELIAS, 12 fine dwarf, in six fine varieties, 2s.
MIMULUS, Henderson's new large-flowered, 12 superb varieties, 6s.
FERNS, Greenhouse, 12 select varieties, very fine, 6s
GREENHOUSE PLANTS, 12 fine varieties, very select, 6s.
STOVE PLANTS, 12 select varieties, extra fine 9s.
TREE CARNATIONS, 12 fine varieties, winter blooming, 6s.
VICTORIA DAISIES, new, 12 superb varieties of 1875, fine, 6s.
,, 6 first varieties, 2s.
PELARGONIUMS, 6 new varieties, perpetual blooming, 4s.
,, Zonal, 6 fine varieties, new, striped, fine, 4s.
HERBACEOUS LOBELIA, 6 select varieties, tall, hardy, 3s.
HERBACEOUS MIMULUS, 6 select varieties, tall, hardy, 2s.
POMPON and JAPANESE CHRYSANTHEMUMS, 12 select varieties, large flowered, 2s. 6d.
COLEUS, 12 select new varieties of 1875, fine, 3s.
,, 12 very select varieties, older, superb, 2s.
PELARGONIUMS, Cape, 12 fine varieties, sweet-scented, 4s.
IVY-LEAF GERANIUMS, 12 fine varieties, including the new double variety, König Albert, 5s.
BOUVARDIAS, 12 fine varieties, winter blooming, 6s.
SEDUMS, Rock Plants, 12 select varieties, hardy, 2s. 6d.
SAXIFRAGES, Rock Plants, 12 select varieties, hardy, 2s. 6d.
PELARGONIUMS, Fancy and French, 12 select varieties, show, 6s.
AGERATUM, Duchess of Edinburgh, the best dwarf blue bedder yet produced, 12 new, 3s.

All the above sent post-free, in good plants, from

B. W. KNIGHT, Florist, Battle, Sussex.

ORCHIDS.

SPECIAL OFFER.

R. BULLEN, in consequence of the large importations of Orchids constantly arriving from his Collector, begs to offer the following varieties, either established, semi-established, or fresh imported, in large or small quantities, at greatly reduced prices. Inspection solicited.

CATTLEYA AMETHYSTINA,
,, BICOLOR,
,, BULBOSA,
,, CANDIDA,
,, LEOPOLDII,
,, LABIATA,
,, MARGINATA,
,, SCHILLERIANA,
COMPARETTIA FALCATA,
HOULLETIA BROCKLEHURSTIANA,
IONOPSIS PANICULATA,
LÆLIA CINNABARINA,
,, ELEGANS,
,, PERRINII,
,, PRÆSTANS,
,, PURPURATA,
MILTONIAS, several varieties,
ONCIDIUM CRISPUM,
,, CONCOLOR,
,, FORBESII,
,, PHYMATOCHILUM,
,, MARSHALLIANUM (true),
,, SARCODES (true),
SCUTICARIA HADWENII,
SOPHRONITES GRANDIFLORA,
,, COCCINEA,
ZYGOPETALUM MAXILLARIA,

And many other varieties.

Buyers will be liberally treated with.

Prices on application to

R. BULLEN,

WOODLANDS NURSERY, HITHER GREEN, LEWISHAM, S.E.

ROYAL BOTANIC SOCIETY,

REGENT'S PARK, N.W.

SECOND SUMMER EXHIBITION, JUNE 21, 1876.

AWARDS OF THE JUDGES.

12 STOVE and GREENHOUSE PLANTS. (Open.
1st, Mr. J. Ward, Gr. to F. G. Wilkin, Esq., Leyton.
2d, Mr. D. Donald, Gr. to J. G. Barclay, Esq., Leyton.
3d, Mr. G. Toms, Gr. to H. Wetenhall, Esq, Seven Sisters Road, N.

6 STOVE and GREENHOUSE PLANTS. (Amateurs.)
1st, Mr. J Ward, Gr. to F. G. Wilkin, Esq.
2d, Mr. G. Wheeler, Gr. to Sir F. H. Goldsmid, Bart., Regent's Park, N.W.
3d, Mr. G. Toms, Gr. to H. Wetenhall, Esq.

6 STOVE and GREENHOUSE PLANTS, in 12-inch Pots. (Nurserymen.)
1st, Mr. B. S. Williams, Holloway, N.
2d, Messrs. Jackson & Son, Kingston, W.

12 STOVE and GREENHOUSE PLANTS, in 12-inch Pots (Open.)
1st, Messrs. Jackson & Son. | 2d, Mr. G. Wheeler.

12 EXOTIC ORCHIDS. (Amateurs.)
1st, Mr. Denning, Gr. to Lord Londesborough.
2d, Mr. J. Ward, Leyton.
3d, Mr. C. J. Salter, Gr. to W. Cobb, Esq, The Elms, Sydenham, S.E.
4th, Mr. H. Heims, Gr. to F. A. Philbrick, Esq., Q.C.

12 EXOTIC ORCHIDS. (Nurserymen.)
1st, Mr. B. S. Williams. | 2d, Messrs. Jackson & Son.

6 EXOTIC ORCHIDS. (Nurserymen.)
1st, Mr. B. S. Williams. | 2d, Mr. William Bull.

6 EXOTIC ORCHIDS. (Amateurs.)
1st, Mr. James Douglas, Gr., Loxford Hall, Ilford.
2d, Mr. James Ward.
3d, Mr. H. Heims, Gr. to F. A. Philbrick, Esq.

9 SHOW PELARGONIUMS. (Open.)
1st, Mr. J. Ward, Leyton. | 2d, Mr. Chas. Turner, Slough.
3d, Messrs. Dobson & Son, Isleworth, W.

6 PELARGONIUMS. (Amateurs.
1st, Mr. George King, Gr. to R. Few, Esq, Wolsey Grange, Esher.
2d, Mr. J. James, Gr. to W. F. Watson, Esq., Isleworth, W.

6 FANCY PELARGONIUMS. (Amateurs.)
1st, Mr. Geo. King, Gr. to R. Few, Esq., Esher.
2d, Mr J. James, Gr. to W. F. Watson, Esq, Redlees, Isleworth, W.
3d, Mr. James Weir, Gr. to Mrs. Hodgson, Hampstead, N.W.

6 FANCY PELARGONIUMS. (Nurserymen.)
2d, Mr. Charles Turner, Slough.
3d, Messrs. Dobson & Son.

9 ERICACEOUS PLANTS. (Open.)
1st, Mr. J. Ward, Gr. to F. G. Wilkins, Esq., Leyton.
2d, Messrs. Jackson, Nurserymen, Kingston.
3d, Mr. G. Wheeler, Gr. to Sir F. H. Goldsmid, Bart.

6 CAPE HEATHS. (Amateurs.)
1st, Mr. J. Ward, Gr. to F. G. Wilkins, Esq., Leyton.
2d, Mr. G. Wheeler, Gr. to Sir F. H. Goldsmid, Bart.

6 CAPE HEATHS. (Nurserymen.)
1st, Messrs. Jackson, Nurserymen, Kingston.
2d, Mr. B. S. Williams, Holloway, N.

6 OLD-FASHIONED PLANTS in FLOWER. (Open.)
1st, Mr. W. P. Roberts, Gr. to W. Terry, Esq, Fulham, S.W.

12 DRACÆNAS and CORDYLINES. (Open.
1st, Mr. William Bull.

6 PALMS.
1st, Mr. B. S. Williams.
2d, Mr. J. H. Ley, Croydon.
3d, Mr. Richard Butler, Gr. to H. H. Gibb, Esq.
4th, Mr. G. Wheeler.

6 STOVE and GREENHOUSE FERNS. (Amateurs.)
1st, Mr. D. Donald, Gr. to J. G. Barclay, Esq.
2d, Mr. G. Wheeler.

6 STOVE and GREENHOUSE FERNS. (Nurserymen.)
1st, Mr. B. S. Williams.

6 FINE-FOLIAGE PLANTS. (Amateurs.)
1st, Mr. D. Donald.
2d, Mr. F. Hill, Gr. to H. Taylor, Esq, Avenue Road.
3d, Mr. George King, Gr. to R. Few, Esq., Esher.
4th, Mr. Richard Butler, Gr. to H. H. Gibb, Esq.

6 FINE-FOLIAGE PLANTS. (Nurserymen.)
1st, Mr. B. S. Williams.
2d, Mr. J. H. Ley, Croydon.

6 SCARLET or ZONAL PELARGONIUMS. (Amateurs.)
1st, Mr. George King.
3d, Mr. J. Catlin, Gr. to Mrs. Lermitte, Finchley, N.
Equal 3d, Mr. J. Weir, Gr. to Mrs. Hodgson, Hampstead, N.W.

6 SCARLET or ZONAL PELARGONIUMS. (Nurserymen.)
3d, Mr. Williams, Meadmore Nurseries, Romford, Essex.

ROSES, 48 Varieties. (Open.)
1st, Messrs. Paul & Son, Cheshunt, N.
2d, Mr. Charles Turner, Slough.

ROSES, 24 Varieties. (Amateurs.)
1st, Mr. John Hollingswood, Turkey Mills, Maidstone.
2d, Mr. J. Chard, Gr., Clarendon Park, Salisbury.

ROSES, 24 Varieties. (Nurserymen.)
1st, Messrs. Paul & Son, Cheshunt, N.
2d, Mr. Charles Turner, Slough.

ROSES, 24 Trusses. (Open.)
1st, Mr. Charles Turner.
2d, Messrs. Paul & Son, Cheshunt, N.
3d, Mr. J. Chard, Gr., Clarendon Park, Salisbury.

ROSES, 24 Trusses. (Open.)
2d, Mr. J. Chard, Gr., Clarendon Park, Salisbury.

ROSES, 12 Trusses, Yellow
1st, Mr. Charles Turner. | 3d, Mr. J. Bolton.
2d, Mr. J. Chard.

ROSES, 12 Trusses, Red.
1st, Mr. Charles Turner.

ROSES, 12 Trusses, White.
1st, Mr. Charles Turner. | Equal 3d, Mr. J. Chard.
3d, Mr. J. Bolton.

ROSES, 1 Basket.
1st, Mr. C. Turner. | 2d, Mr. J. Chard.

ROSES, 1 Basket, all Colours.
1st, Messrs. Paul & Son, Cheshunt, N.
2d, Mr. William Soder, Gr. to O. Hanbury Esq.
3d, Mr. J. Chard, Gr., Clarendon Park, Salisbury.

24 Spikes of IRIS, 12 Varieties.
1st, Mr. R. Parker, Tooting, S.W.
2d, Messrs. Hooper & Co., Covent Garden, W.C.
Equal 2d, Mr. J. Chard.

PYRETHRUMS, 24 Trusses.
1st, Mr. R. Parker, Tooting, S.W.
3d, Mr. G. Wheeler.

HARDY HERBACEOUS FLOWERS.
1st, Mr. R. Parker, Tooting, S.W.
2d, Mr. W. P. Roberts, Gr., Peterborough House, Fulham, S.W.
3d, Mr. G. Wheeler.

STOVE and GREENHOUSE PLANTS, 24 Trusses.
1st, Mr. J. Bolton, Gr. to W. Spottiswoode, Esq., Coombe Bank, Sevenoaks.
2d, Mr. Geo. Wheeler.

2 PINE-APPLES. (Queen.)
1st, Mr. G. Ward, Gr. to T. N. Miller, Esq., Bishop's Stortford.
2d, Mr. J. Harris, Gr. to Mrs. J. H. Vivian, Singleton, Swansea.
3d, Mr. T. W. Bond, The Beeches, Weybridge, Surrey.

1 PINE-APPLE (Queen.)
1st, Mr. G. Ward, Bishop's Stortford.
2d, Mr. Miles, Gr. to Lord Carington.
3d, Mr. J. Harris.

1 PINE-APPLE. (Any variety.)
1st, Mr. H. Ward, Gr. to Earl Radnor.

2 MELONS. (1 Green, 1 Scarlet.)
1st, Mr. Wildsmith, Gr. to Viscount Eversley, Heckfield.
2d, Mr. H. Ward.

GRAPES, 1 Basket (Black.)
1st, Mr. J. Akehurst, Gr. to S. Copestake, Esq., The Grove, Highgate, N.
2d, Mr. P. E. Kay. | 3d, Mr. James Douglas.

GRAPES, 1 Basket (White.)
1st, Mr. Grimmett, Gr. to J. Wilmot, Esq., Pine House, Isleworth, W.
2d, Mr. James Douglas. | 3d, Mr. P. E. Kay.

GRAPES, 3 Bunches (Black Hamburgh.)
1st, Mr. J. Akehurst.
2d, Mr. W. Nash, Gr. to the Duke of Beaufort.
3d, Mr. James Douglas.

GRAPES, 3 Bunches (Black), any other kind
1st, Mr. Grimmett. | 2d, Mr. J. Douglas.

GRAPES, 3 Bunches MUSCAT of ALEXANDRIA.
1st, Mr. W. Robins, Gr. to E. Dyke Lee, Esq, Hartwell House, Aylesbury.
2d, Mr. Grimmett. | 3d, Mr. James Douglas.

GRAPES, 3 Bunches White, any other variety
1st, Mr. James Douglas.
2d, Mr. Robert Sowerby, Gr., Sherborne Castle
3d, Mr. George Sage, Gr. to Earl Brownlow, Ashridge

PEACHES, 2 Dishes (distinct)
1st, Mr. George Sage.
2d, Mr. J. Shrimpton, Gr. to Lady Rothschild, Tring.

NECTARINES, 2 Dishes (distinct).
1st, Mr. J. Woodbridge, Gr., Sion House, Brentford, W.
2d, Mr. A. Grant, Gr. to J. B. Clegg, Esq, Withington Hall, Chelford.
3d, Mr. Miles, Gr. to Lord Carington.

CHERRIES, 2 Dishes (Black)
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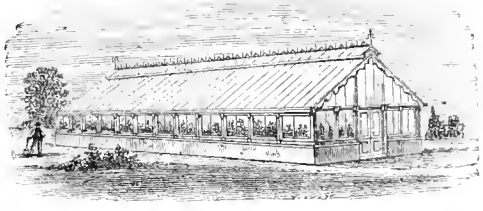

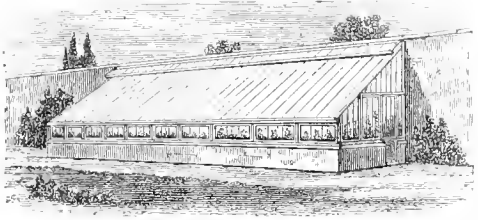

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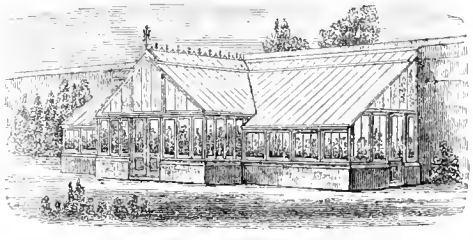

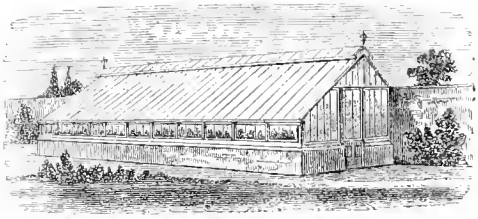

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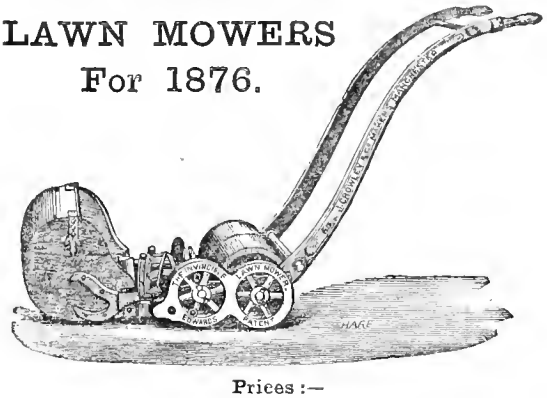

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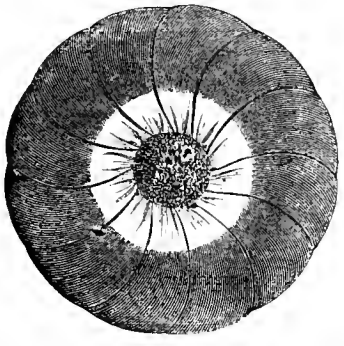

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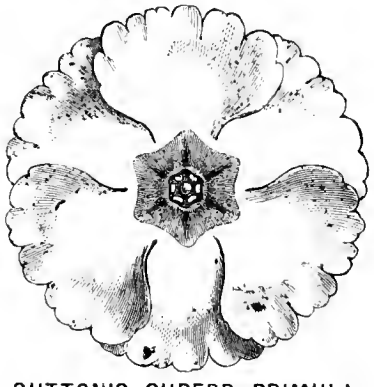

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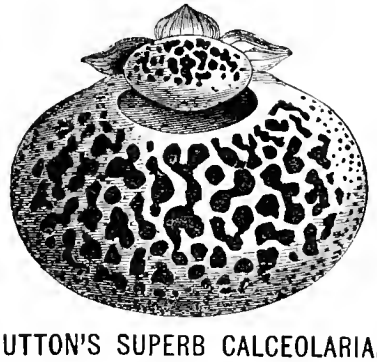

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CATALOGUE No. 169, P.P., appears end of next month, and will contain Azalea indica, mollis, and pontica; Camellias, Greenhouse and Hardy Rhododendrons, Magnolias, &c.

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MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, June 26, at half-past 12 o'Clock precisely, a splendid importation of choice ORCHIDS, from Brazil, just to hand, in the finest possible condition, by R.M.S.S. *Douro*, consisting of grand masses of Oncidium Marshallianum, grand masses of Oncidium crispum, Lælia cinnabarina, unusually fine Cattleya marginata Pineli, very fine, with green healthy leaves, some masses of unusual size; Miltonias in quantity, Cattleya crispa, Zygopetalum maxillare, Ionopsis paniculata; also a small importation from Burmah, consisting of Dendrobiums, Vandas, Aerides, in good condition. Also established healthy plants of Phalænopsis amabilis, P. Schilleriana, P. Luddemanniana, P. grandiflora; a strong established plant of the extremely rare and beautiful Phalænopsis casta and P. leuchorrhoda, &c.

On view the morning of Sale, and Catalogues had.

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CATTLEYA SUPERBA.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, July 7, an importation of CATTLEYA SUPERBA, just received, *ex* s.s. *Blenheim*. The plants of this, one of the most beautiful of the known Cattleyas, are in the best possible condition, many of them unusually fine masses, the growths plump and with fresh leaves on them, such as are seldom seen on newly imported plants.

At the same time will be sold an importation, *ex* s.s. *Chyebassa*, of DENDROBIUM MCCARTHIÆ, many of the plants remarkably fine, and in the best possible condition.

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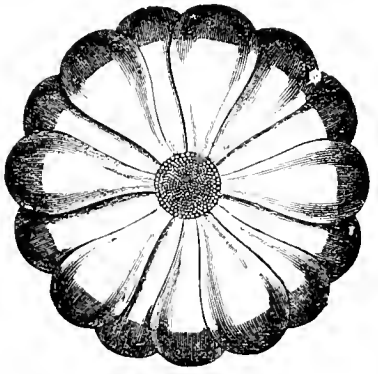

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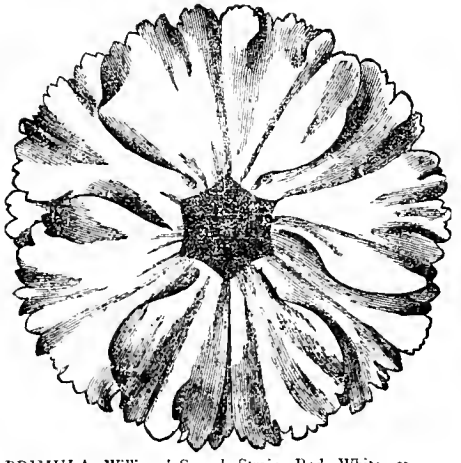

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Mr. WILLIAM BULL having received a large importation of this beautiful Orchid from his Collector in the United States of Colombia, can offer nice plants at

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NEW PLANTS for 1876.

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ACALYPHA TORTA,
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BRUGMANSIA COCCINEA,
COPROSMA BAUERIANA PICTURATA,
CRINUM ORNATUM RUBRO-VITTATUM,
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„ LANCEOLA,
DRACÆNA COCCINEA,
„ REX,
„ VIRGINALIS,
ERANTHEMUM TRICOLOR,
GEONOMA CARDERI,
GRIFFINIA ORNATA,
HIBISCUS (ROSA-SINENSIS) BRILLIANTISSIMA
IXORA REGINA,
MACROPIPER EXCELSUM AUREO-PICTUM,
PHYLLANTHUS ATRO-PURPUREUS,
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Establishment for New and Rare Plants,
KING'S ROAD, CHELSEA, LONDON, S.W.

SATURDAY, JUNE 24, 1876.

THE "NUTS" OF THE OLD TESTAMENT.

TWICE in the Authorised Version of the Old Testament mention is made of "Nuts." As by Nuts in our own vernacular, when a differential adjective or the name of a country is not prefixed, we understand always the produce of the Corylus Avellana, it may be interesting to see what very different things are intended in the two Scriptural references.

In the Authorised Version of the "Song of Solomon," the great naturalist to whom the authorship of this curious poem is very generally ascribed says: "I went down into the garden of Nuts." This garden would seem to have been one of the many of the same kind mentioned in the Book of Ecclesiastes, also ascribed to Solomon, though not proved to have come from his pen, when he informs us that "I made me gardens and orchards, and I planted trees in them of all kinds of fruits" (ii. 5). The word employed in the Song is *egôz*. In meaning it seems to have denoted, primarily, a Nut of any description whatever, provided that the sense was qualified by some prefix or adjunct, thus anticipating the subsequent use of their *κάρυον* and *nux* by the Greeks and Romans. When used alone, on the other hand, there can be little doubt that it denoted the Walnut—the Nut *par excellence*. The Walnut being a native of Persia, the importation of it into Palestine took place probably at a very early period. A tree so remarkable alike for excellent produce, scent of foliage, and handsome appearance could not possibly escape the notice of the early cultivators of plants, or be left to exist exclusively in its native country. Solomon's great love of commercial enterprise would be sufficient to account for the introduction of it, at all events, into the royal gardens at Jerusalem. How far, in primeval times, the geographical range extended eastwards is not known. At the present day this admirable tree occurs in an apparently indigenous state everywhere, from Persia to the Himalayas, abounding especially in Cashmere. It is found also in Asia Minor and in Greece, looking in both countries like a native. Introduced into Britain, most probably by the Romans, so completely has it now made itself at home with us that one might almost be tempted sometimes to think it aboriginal. In the time of Josephus it grew in profusion round the Lake of Gennesareth.

The stature attained by the Walnut is 60 to 80 feet. The great, pinnate leaves are unique in their delightfully aromatic odour. The flowers which accompany the opening foliage are distinctly male and female, the stamens being produced in massive and pendulous green catkins, which soon drop off, and then turn black; while the females, which are the incipient Walnuts, grow in twos and threes at the extremities of shoots of the same year, and are remarkable for their large green stigmas. The ripe Nut is so different from all other fruits that in the botanical classification of seed-pods it stands as a type by itself, distinguished by the name of the *tryma*—a term applied, it would seem, by reason of the curious hollows in the kernel.

Although *κάρυον*, with the Greeks, sufficed to distinguish this incomparable Nut, it was also

called *κάρυον βασιλικὸν*, the royal or kingly Nut, and *κάρυον Περσικὸν*, or the Persian. Linnæus showed his good taste in preserving the former epithet in his Juglans regia. Juglans, the old Roman name, is said to be a contraction of Jovis glans, or Jupiter's Nut, these two words representing the Greek *Διός βαλανος*, through that curious permutation of sounds, and thence of alphabetical characters, illustrated in Diespiter and Jupiter, and in the change by the old Italian rustics of Diana into Jana.* But the true *Διος βάλανος* was most probably the Chestnut. Some think that Juglans is a contraction of *juncta glans*, the name referring to the conjunction of the two equal concavities which form the shell, a structure not existing in any other species of nut with which the ancients were acquainted.

Very few allusions to the Walnut occur in classical literature. Ovid includes Walnuts in the dessert laid out by Baucis. The same poet has left us an elegant little poem, *Nux Elegia*, "The Plaint of the Walnut-tree," in which he represents it as protesting against men's unkindness, being pelted with stones, and beaten with sticks, in return for the munificence with which it bestows its milk-white produce. Virgil seems to refer to the Walnut when enumerating the signs given by Nature to the former:—

> Contemplator item, cum se nux plurima silvis
> Induet in florem, et ramos curvabit olentes.

"Observe also when the *nux* shall clothe itself abundantly with blossoms in the woods, and bend its scented boughs. If the rising fruit exceed the leaves in number, in like quantity will follow the harvest; but if the shady boughs are luxuriant with leaves, the stalks shall be fertile only in chaff." (*Georgic*, i., 186, 187.) In the 8th eclogue there is an indubitable allusion, "*sparge marite nuces*," it having been a custom at the time of marriages among the ancient Romans, when the bride was being led home, to scatter Walnuts among the spectators in the streets. Pliny, lib. xv., cap. 22, assigns the reason, remotely recondite, like so many other of the late conjectural explanations of customs which commenced at social daybreak, no one ever having heard exactly how. Athenæus, ii., 65, also refers to the Walnut. The Romans prized the wood of the tree as much as we do ourselves.

The other Authorised Version allusion to Nuts occurs in Genesis, and as the rendering of a perfectly different term. When, after the detention of Benjamin by Joseph at the Court of the Egyptian monarch, Joseph despatches his elder sons to beg that the boy may be released, "Take," he says, "of the best fruit in the land . . . and carry the man a present, a little balm, and a little honey, spices, and myrrh, *betonim*, and almonds." (Gen. xliii. 11.)

The tree which yielded these *betonim* would certainly not be common in Egypt, even if known there, or the produce would have had no value as part of a present designed to be gratifying and conciliatory. Quite as certainly it would be an occupant of that part of Palestine in which the bereaved old man had his abode, and not only so, but it would be plentiful, for villages thereabouts were named after it, just as Olivet was named from its Olive trees, and other places from their Figs, Dates, and Pomegranates. One of these villages is mentioned in Joshua xiii. 26. Putting together various proofs it is clear that the tree in question was the Pistacia vera, the source of the modern Pistachio Nuts. All that is said of the Pistachio by ancient authors goes to prove its abundance in the regions indicated. "Syria," says Pliny, "has several trees peculiar to itself, among the number is the well-known Pistachio" (xiii. 5). Geographically it is now known to extend from Syria to Affghanistan and Bokhara, though, singular to say, in the Holy Land it has become scarce. Dr. Hooker noticed not more than two or three, and these were near Jerusalem. According to Pliny, the Pistachio was introduced into Italy by Vitellius, and into Spain about the same time by Flaccus Pompeius. This would be very shortly before Pliny's own period, or during the first fifty years or so of the Christian era. Since then it gradually spread, so as to embrace the whole of the Mediterranean.

But in Southern Europe perhaps it exists after all only by restoration to an ancient patrimony! A peculiarly interesting circumstance in the history of the Pistachio is that it appears to have been, like the Myrtle, a member of an earlier European flora than the one to which Vitellius introduced it—a flora from which it disappeared in the pre-historic ages, though in Asia living and flourishing. What wonderful problems we have to deal with in determining the birthplaces and primeval homes of plants. Without going back into the coal-formation times, when Cycads gave a feature to the vegetation of what is now Britain; without going back to the ancient seasons when the immemorial sunshine that to-day makes the Daffodils gave life to quaint Calamites and Sigillarias; without troubling ourselves for a moment about extinguished species, what riddles envelope the history of existing ones? Could we know the history from the beginning of even the commonest weeds—Shepherd's Purse, or Knotgrass—assuredly it would possess all the charms of a poet's romance. Relics of the Pistachio tree, according to Dr. Daubeny, as well as of the Myrtle, have been found among the tuffa of Mount Etna, the date of which is anterior to that of the mountain itself.*

In general appearance the Pistachio tree resembles its near ally the Terebinth, in Arabic called *but'm*, a word significantly like *betonim*. But while the Terebinth is capable of becoming majestic, the Pistachio rarely attains a greater height than 20 feet. The leaves are imparipinnate, 2—3 inches in length, the 3—5 leaflets oval and entire. The flowers, produced in little racemes, are minute, apetalous, brownish green, and dioecious. The fruit is an ovoid and reddish drupe, about an inch in length; the brown and rugged stone splits, when ripe, into two equal valves, disclosing a large, fat, oleaginous kernel, remarkable for being reddish without and green within. The kernel abounds in oil, and has an agreeable and sweetish flavour, much relished in the East, and greatly improved when the Nuts are partially dried, like Almonds. They are best when employed in cookery. In commerce, or as imported into our own country from Italy and the South of France, Pistachio Nuts sometimes go by the name of "green Almonds." Dioscorides well compares them to the seeds of the Stone Pine, Pinus Pinea.

The Pistachio tree was introduced into England in 1770; being subject, however, to perish under frost, it is rather rare. In the southern counties it blossoms, but does not set fruit. In the autumn the green of the foliage changes to a beautiful purplish red, not fading, but improving, and then quits the branches.

That the *betonim* of the Hebrew Old Testament were Pistachio Nuts has long been recognised, though in the Authorised Version obscured. They are spoken of as Pistachios by Fuller, in 1662, in that delightfully quaint, pious and philosophical old folio, one of the books it is impossible ever to tire of: "Pisgah, a sight of Palestine, and the confines thereof:" p. 11. When, in the course of his history, he speaks of the casting of Joseph into the pit, "Oh," he exclaims, "with what heart could they say grace, either before or after meat, while it was so sad with Joseph. Stars, they say, are seen the clearest, even in daytime, by those that are in deep pits; surely Divine Providence appeared brightest to Joseph in that condition:" p. 146. The name Pistachio is of Oriental origin, the Arabic or Persian receiving with the Greeks a shape congenial to other words of similar structure. *Leo Grindon, Manchester.*

* *Vide* Macrobius, *Sat.*, lib. ii., cap. 14.

* *Trees of the Ancients*, p. 93.

New Garden Plants.

TRICHOPILIA BACKHOUSIANA, *n. sp.**

This is a New Grenadan novelty, introduced by Mr. J. Backhouse, who has very properly distinguished it from T. fragrans. This gentleman writes:—"The bulb, indeed the whole plant, is of paler green, and of a much thinner texture. The leaves are faintly spotted and clouded with darker patches. Bulbs less thick, edges rather sharper and with more disposition to curve when old than in T. fragrans. The whole plant has a different aspect." I think I may add that the lip is much narrower, and lobed near its end, while it is twice as broad and lobed in the middle in T. fragrans. The flowers appeared to me much more fleshy than those of that species, and gave me a certain impression of Vanilla flowers when I opened the bag that had luckily escaped the last grand English *razzia* for royal-mail-injuring boxes. I dedicate this pretty species with great pleasure to Mr. Backhouse, who had so well distinguished it. *H. G. Rchb. f.*

CIRRHOPETALUM TRIPUDIANS, *Par., Rchb. f.*†

This is a rather modest but pretty plant. It has a nodding raceme of nine or ten flowers. The chief part of these consists of the light brown rather thick cohering lateral sepals, minutely hairy. The upper sepal is triangular, light brown with red hairs, very much shorter. The very small triangular petals are adorned with hairs, and have a fimbriate margin. They are whitish, with purplish spots. The lip is a fleshy nearly tongue-like body, with two projecting angles at its base, with purplish spots and many broad dark purplish hairs. The bracts are small. John T. Barber, Esq., kindly gave me these remarks when sending me the beautiful quite fresh (*avis au lecteur!*) spike in such a state that it was quite a pleasure to investigate on it. "This also came with Mr. Low's importation last spring, and we both thought it was Pleione Schilleriana. Saying this is almost describing the pseudobulbs in two words; they have the same elasticity when compressed between the fingers as those of some other species, and are so close together that one is afraid of trying to drag them apart to see the rhizoma, whose whole length between the pseudobulbs is but $\frac{1}{8}$ of an inch. The old pseudobulbs are semi-transparent, light shining through and giving the appearance of a little flask of jelly of a very pallid emerald tint. Pseudobulbs $\frac{9}{8}$ to $\frac{7}{8}$ inch high, $\frac{1}{16}$ inch diameter at the base, conical, with an irregular and wavy skin; at the present the plant has no leaves, and I believe they are lost on account of having been kept at one time too dry, at another too wet; the pseudobulbs carry two leaves, almost linear, they are so narrow, and of a pale green; and now I must quote from memory when I say about 2—2½ inches in length. Roots are those of the Cirrhopetalum genus. Although these plants are in low esteem, I must say that I do like this one. Its golden colour, the hirsute edge of the petals, the hirsute and prettily spotted labellum, the pink hairs of the sepals, the carmine dotted column and ovarium, make it very interesting and pretty." The plant is one of the numerous discoveries of the Rev. C. Parish. To me it is a very great riddle. There is a certain similarity to C. Wallichii, Lindl. That has much longer, greater, acuminate bracts,

* *Trichopilia Backhousiana*, n. sp.—Pseudobulbo lato ligulato ancipiti; folio oblongo acuto (nebuloso) basi bene cuneato complicato; racemo pauciloro carnosiloro; sepalis tepalisque sublatioribus ligulatis acutis, labello cuneato antice trilobo, lobo medio retusiusculo, plica una obliqua utrinque in fundo; columna crassa androclinii membrana æqualiter fimbriata integra, fovea oblique anteposita.—Cl. Backhouse dedicata; qui ex Nova Granata introducto.

† *Cirrhopetalum tripudians*, Par., Rchb f.—Pseudobulbis depresso-conicis; foliis lineari-lanceis geminis (fide. egr. Barber)'; pedunculo vaginis arctis ternis distantibus apice prono seu nutante; racemo breviusculo disticho; bracteis latis scariosis brevissimis ovatis apiculatis deciduis; sepalo dorsali perbrevi oblongo acuminato ciliato lacero fornicato; sepalis lateralibus ligulati-acutis in arcum connatis; tepalis triangulis margine ciliato-fimbriatis acuminatis, labello crasso pandurato brevi utrinque incrassato, basi obscure bicarinato, pilorum fasciculis tecto; columnæ setis utrinque productis deorsum falcatis acumine dorsali deflexo.—Simillimum Cirrhopetalo Wallichii, Lindl.! jam bracteis acuminatis elongatis facillime distinguitur, quæ persistent. Bulbophyllum tripudians, Par., Rchb. f.; Trans. Linn. Soc. Lond. xxx., fig. 154.—Burma.—Folia ½ "lata, illis Cynosuri cristati comparabilia" (cl. Barber in litt.).

much longer, thinner, lateral sepals, and most evidently a compressed lip. And yet I have a secret feeling that they should eagerly be compared. It is as if the Burmese climate had changed the plants. I think of Coelogne ochracea, Lindl., subsp. conferta, Par., Rchb. f.; of Bulbophyllum cupreum, Lindl., subsp. stenopetalum; of Aerides crassifolium, Par., Rchb. f.; perhaps a condensed A. falcatum, Lindl. There will be much interesting work to be done when Governments will send out observers in lieu of simple collectors. May we see those days. *H. G. Rchb. f.*

MASDEVALLIA PSITTACINA, *n. sp.**

It is well known that the saccilabiate Masdevalliæ have to be divided in three groups. These are such with a rounded superior lip and a rounded anterior one—Chimæra, Wallisii, Roezlii, severa. To this group belongs the present species, the smallest of them. There are others with a rounded superior and a dilated inferior lip, Nycterinia and Vespertilio. Finally others have the upper lip with angles, and the anterior lip rounded, such as M. Houtteana, spectrum, Benedicti.

FIG. 145.—DOUBLE AZALEA INDICA IMBRICATA.

This one has a quite novel shape. Let us state that its flower membrane is much thicker than it is usual in its allies. The angular part is very wide and rather short. It goes out in three triangles, each bearing a thick tail, more than twice as long as the cupular part including the triangles. The free parts of the cupular part are green, the basilar part is yellow, with very numerous small purplish blotches. The tails are brownish and green at their tips, while the inner surface is covered with innumerable acute warts, making it rough all over. The petals have a crescent-shaped dark eye-spot, and break out as usual between their two apicilar valves in numerous acute warts, shining like so many crystals growing from a solution of some salt. The lip is whitish and keeled in a very peculiar manner. Three keels combine in one at the base of the anterior part. At each side seven nerves rise from this, and each nerve has an upright semi-elliptical blade towards the lip's margin. Since the plant was called Benedicti, I have no doubt it is of Neogrenadian origin. It may come from a sale of Messrs. Patin-Lalinda, or Señor Benito Roezl. I obtained it from the collection of Sir Trevor Lawrence, by its skilful grower, Mr. Spyers. *H. G. Rchb. f.*

* *Masdevallia psittacina*, n. sp. (Saccilabiatæ Chimæræ).—Pedunculo anthesi unifloro; ovario pedicellato bracteam duplo superante; perigonio subcarnoso, sepalis in cupulam amplam brevem coalitis sepalo summo basi late triangulo in caudam parte libera pluries longiorem extenso, sepalis lateralibus latioribus inter se linea subrecta cum sinu minuto coalitis, in caudas bene longiores extensis, omnibus intus densissime acute papulosis; tepalis ligulatis apice dilatato obtuse dipteris cum papulis multis interjectis; labello a basi oblonga subito dilatato carinis in parte inferiori ternis in unam excurrentibus; carinulis labelli anterioris ad marginem membrana semielliptica auctis; columna trigona apice acuta.—Flores virides, basi albidi, guttis multis atropurpureis, caudæ atropurpureæ apice virides.

AZALEA INDICA IMBRICATA.

UNDER this name there was exhibited at the Brussels Centennary Exhibition a very pretty variety of Azalea indica, having the flowers full double—as double as in a double Petunia, which it a good deal resembled. This was exhibited by M. Joseph Vervaene. Its flowers were about the size of ordinary Azalea blossoms, and they were filled in, tier within tier, by petaloid bodies, so that no open tube remained, but the whole formed a close rosette with a funnel-shaped base. The colour of the flower was white, with a few slight flakes of delicate red. Very similar in character (but whether the same or not we should hesitate to decide) was one called imbricata variegata, shown by M. Jean Vervaen. It was equally double with the other, and similarly white, with faint red flakes; but the white did not bleach well in opening, so that the flower retained a good deal of green, in which state it is not attractive. Whether this is all one variety, which becomes whiter under more judicious treatment, or whether two sorts, differing in the features we have above indicated, we are unable to say.

We have seen some very well-developed flowers on imported plants bloomed in England, and the variety has now been certificated (1st class) both at the Royal Horticultural Society's and at the Royal Aquarium Shows. We have to thank Messrs. Veitch & Sons, of Chelsea, who showed it on Wednesday last at South Kensington, for the permission to make the sketch from which the accompanying cut (fig. 145) has been prepared. *T. M.*

GROUPING PLANTS FOR EFFECT AT FLOWER SHOWS.

THE offering of prizes for grouping is decidedly a step in the right direction. A dozen cultivators can be found to grow a dozen plants well for one who can group them for effect; hence any one who is an early visitor at any of the great shows must often have been struck with the demand for the services of old stagers to help the grouping. It is hardly too much to say that in the important open classes, prizes are lost and won almost as often by the grouping as the cultivation. There is such a thing as setting each plant in a group of twelve in such form and place that it shall strengthen the whole group, and it is possible to set each one of twelve fine plants so that it weakens itself and its neighbours all round, and, in fact, drags down the entire group; and what is thus illustrated in the exhibition tent is still more common in private places. Cultural knowledge and proficiency are far ahead of artistic disposition. Fortunes may be more readily made in the artistic disposal of horticultural material than by its production or cultivation. The rage in the fashionable world is arrangement for effect; the able cultivator may wait long for a place, the skilful decorator may command half-a-dozen at once.

No doubt part of this is owing to the legitimate influence of great exhibitions. The first International in London, and most of our large shows, have been more or less examples of tasteful grouping as well as of cultural excellence. It should, however, be borne in mind that in most cases the special prizes offered for groups of plants arranged in definite spaces for effect have been competed for under immense difficulties. Why, the very spirit of taste itself might be abashed at being asked for a sample of skilful arrangement in a basket 6 feet by 4. If that ordeal is not enough to clip the wings of genius, they must be strong-minded. Neither are societies much to be blamed. Many of these have neither much space nor money to devote to this purpose. They wish to encourage taste, but they remember that they are chiefly and primarily cultural societies; hence they legitimately enough devote tent after tent to flowers, fruits, and vegetables, and a few yards square for groups of plants in square baskets arranged for effect. Those who undertake to compete under such circumstances naturally—I had almost written necessarily—put as many pretty things in as they can, and hence the overcrowding complained of. Though it is difficult to see how underfilling would remedy this evil, which is one of impossible area rather than of indifferent taste. It must also be admitted that some of these baskets at provincial shows are marvels of taste and beauty under the circumstances. The Stowmarket and Ipswich shows may be noted as often bringing forth rich baskets of plants well arranged for effect.

You have hinted at certain considerations that ought to determine the judging of such baskets, such as how they would look on a conservatory floor, how long the plants would continue in beauty, how they would look if stripped of their flowers, and what degree of cultural skill the plants exhibit. Now it is not very obvious why either of these tests should be applied to such groups of plants. Most of these groups would be utterly lost on a conservatory floor, others may be of the most fleeting character; as well enquire how one plant would look if stripped of its leaves as how another would appear if stripped of its flowers; and even cultural skill is of quite subordinate importance in regard to these groups. That reigns supreme over all other portions of the show—taste in arrangement here; and it often happens that may be taste is utterly divorced from a knowledge of culture. How seldom, in fact, do we find the two combined. The cultivator is often but the colour-maker for the decorator, who has the genius and the eye of the painter to combine and work up his materials into groups of marvellous beauty.

No, the prize ought to be solely awarded in the exact terms of the schedule—for the best group of plants arranged for effect; and this does not mean, as some judges try to read it at times, for the best group of plants, first, arranged for effect afterwards, but that the arrangement is to dominate and control the awards. Taste, in fact, should be the measure of merit in the awarding of these prizes: the moment we open the door to other considerations we are apt to run into error.

Even the set against colour, now so fashionable, should not be indulged in, in the awarding of these prizes. Deprive the painter of all his most brilliant

tints, and what would become of his pictures? Take a sponge and wipe out the grand living colours from the works of the old masters, and their glory would be gone for ever. Colour is equally needful for the modern decorator. He studies it, breaks it up into shades, blends it down into tints, concentrates it into forcible and telling masses, as the old artists their paints, and with, in degree, similar results. Some seem determined to have the earth all green—a grand, wide counterpart to the blue of the sky. But the gay, bright colours break through from millions of living plants of glorious colouring, teaching us that colour is the complement of verdure and form, and that the three between them are to adorn the earth with their matchless robes of well-balanced beauty.

Now, these baskets may be looked on as brilliant samples of what may be done on a larger scale. As the sample bottle is the same in flavour, colour, bouquet, and body as the vintage, so may these baskets be judged as small samples of the most graceful forms and richest colours in Nature. Looked at thus the mind will not be diverted by a multitude of other considerations, relevant or irrelevant; but each group may be judged on its merits, and the highest prizes awarded to the group of plants (be they what they may) arranged in the best manner for effect. One improvement is easily made, and it ought to be made at once. The square or oblong baskets ought at once to disappear, and round ones to be substituted in their place.

Fancy grouping beauty into the sharp angles of a four-cornered basket. The task of Hercules was light compared to this. In a circular basket one has the line of beauty as an aid. This is a marvellous gain. A central beauty with flowing tresses, reaching to and hiding the basket's edge, would then be possible. Expert decorators will see that little more is needed. Give them a circle, large or small, and they will finish it to perfection. The lines of beauty may be made to sink or swell over a circle, like the waves of the sea, and, more and better, the fringe may rival in softness and beauty of finish the matchless disposition of the polished pebbles that the receding waves lull to sleep on the shore as they dreamily retrace their steps to the ocean.

But where room and money can be found, and in fact at all great shows, prizes ought to be offered for groups of twelve or twenty plants arranged for effect, and a large lofty tent set apart for the purpose. One of the best displays of this sort I ever remember to have seen was at the great horticultural show at Grantham, in connection with the Lincolnshire Agricultural Society. There were several competitors, and, if I remember rightly, my friend, Mr. Ingram, of Belvoir, as might be expected from his well-known culture and taste, carried off the 1st prize. But all the groups were most creditable. There was a fine blending of rich graceful foliage and brilliant flowers, and many of the plants were large and noble specimens. Smaller groups might be made perhaps equally telling, and it would be most unfortunate were the idea to go forth that good taste cannot be exercised in the disposition of small groups, provided suitable areas can be provided for the purpose. As well, in fact, measure the genius of painters by the size of their canvas, as the taste of decorators by the number and size of the plants they arrange, or the number of square yards they cover. Still the painter must have sufficient space to allow his work to be seen, and so must the decorator. Samples of colouring may be shown on inches of canvas or even in square baskets, but pictures of alluring beauty or imposing grandeur require more room, alike on canvas, in the exhibition tent, or on the ground. *D. T. Fish.*

THE ORCHARD AT LEONARDSLEE—A REMINISCENCE.

Your notice of Leonardslee reminds me of an an anecdote, as you there allude to my late dear, worthy employer and friend of above forty years' standing. The late Mr. Beauclerk, of St. Leonards, near Horsham, was uncle to Mr. St. John. I cannot recal to memory the exact year in which the orchard at Leonardslee was planted, though I assisted in planting some of those Apple trees, and indirectly I believe I was the cause of the origin of the orchard, and thus:—I was born at Rushbrooke, near Bury St. Edmunds, and, being the oldest son of an increasing family, and withal precocious, I was, when about twelve years old, placed at a watch and working jewellery business in Knightsbridge, at a shop now in the possession of a Mr. Philpotts. We were kept to work harder and longer then than is the present generation, and the upshot was that in about two years I sickened of it, ran away, and was a "gone coon" as to all knowledge of my whereabouts for a fortnight; and had it not been for a direction pencilled on a slate in the shop, and of a rather dubious geographical bearing, "Robert Fenn, Barbadoes, Jamaica," I may probably have come to grief, for a greater set of blackguards than it was my fate to get amongst during the fortnight that I was striving "to go to sea" in the vicinity of the West India Docks never existed, and this has been a caution to me during the whole afterpart of my life. The direction above, however, gave a clue to my probable whereabouts, and my curiosity to see the "Bury Coach" as it went out of London through Whitechapel in the morning, and the return coach in the evening led to my discovery before I could ship myself, as my father had, knowing how my curiosity would in all probabillty lean, commissioned Watson, the guard of the Bury coach in and out of London, to "pick me up" in the event of his spying me out, and so it happened, and I was taken close prisoner to the "Bull and Mouth;" and Mr. Toham, my employer, was sent for to convey me to Knightsbridge, and to keep me a close prisoner till delivered over into the hands of my friends—for I had fully determined, whatever might happen, to be a watchmaker no longer. The next phase was my calling with my father on a Mr. Saunders (the late Lord Kinnoul's butler), in Green Street, Grosvenor Square, to whom my father related the trouble he was then in concerning his runaway son. Mr. Saunders, who formerly lived with the late Hon. General St. John, replied: "Fenn, I know a young clergyman, a nice young fellow, who has just completed building himself a house at Stanton Lacey, in Shropshire, and he is very fond of poultry and breeding fancy pheasants, and attending to his garden. Now, he wants a lad to assist him in his attention to those things, and to wait upon him in the house, and I have got to procure him a youngster. Now, my advice to you is, send your son down to him for a time. He will probably soon get tired of being down there, and will want to come back to the watchmaking." Poor Saunders! he reckoned without his host; I never did tire of "those things," and I lived to lately close the dear old Rector's eyes in death, after a heavy affliction of three years. Well, I am getting old myself now, and I have been "practising" for the good of my species, I think I may truly say, ever since the planting of the orchard of Leonardslee about forty years ago, and this is how, in all human probability, it came about. The late Colonel Rushbrooke, about fifty years ago, went to reside in France for a term with his family, and when he returned to Rushbrooke he brought with him varieties of grafts of the most famous French Apples, such as Court Pendu-plat, Mère du Ménage, &c., and had them grafted on trees in the "Hall" gardens.

About a year after I went to Mr. St. John I visited my native place, and, of course, I had become a "very energetic young gardener," and, amongst many other things, I begged of Mr. Wigg (the gardener) a bundle of Apple cuttings and the best sorts of Potatos then in existence, for the Colonel was a lover of a good Potato. James Hardwick, our village carpenter at Stanton Lacey, was a famous grafter, and was employed much by Mr. Knight, of Downton Castle, close by. It was grafting time: Mr. Beauclerk was on a visit to his nephew at Stanton Lacey, and both them, Hardwick, and myself were busy as bees grafting some of the above cuttings in "the orchard" when who should call but Mr. Knight himself, as he was on his way to Downton Hall, to visit his daughter, Lady Rose Boughton. Thus the introduction to Mr. Beauclerk took place, and Apples of sorts and for cider gave rise to a prominent parley and a long one. Frequent visits to and consultations at Downton Castle by Mr. Beauclerk took place during his stay with his nephew, and it was a long-standing joke with the dear good soul who is just gone, that on one particular day when it was necessary for him to return to his parish at a particular time for some particular duty, he had the greatest difficulty in breaking up the conference between Mr. Knight and his uncle, who were both of them standing upon the top of a huge dung-hill. A severe and peculiar affliction caused Mr. St. John eventually to leave the home that he had made in Shropshire. I have never seen the place since we left it in 1847; possibly there may be old inhabitants there now who remember the above circumstances, and there may still remain old-growing witnesses of our horticultural works there. At any rate, my having assisted to plant some of the trees in the orchard of Leonardslee was because the Rector and myself happened to be visiting at St. Leonards, the name of the old house at the time. The cider cellars there were made long afterwards, and the "cottage," now I believe called Leonardslee, was built long after them, over the road, and adjoining or near to the orchard, and where Mr. Beauclerk went to reside for the latter period of life, after giving up the old family residence to his son. It is a long time, however, since I was there, but I hope to revisit it once again before I die.

How soon I may be ordered out of this rectory-house I do not yet know, but I trust it may not be before my new race of seedling Potatos are ready to dig. Yes, a new race, gentlemen, which I will not write about yet, as it has always been my practice to maintain reserve till something tangible or beneficial to the public is likely to result Can you let me know if I can claim for them to remain till they are mature, and then be entitled to dig them up after I have left this residence? [Only by arrangement.] I hope I may, as they are of no use to any one else but myself. I know I can cut off any vegetable crop at my departure, and, as I have sorts of Mr. Laxton's new Peas here to give my opinion about, as a point of honour I shall feel bound to cut them off, whether they have arrived at maturity or no; the difficulty is about digging up my new seedling Potatos. I hope I may not meet with any such, as they are a breed that I have been trying for for some years, and only succeeded in gaining the cross last season. I have something I want to say more, which I think of importance, concerning Potatos, though I am too busy and unsettled to do so just now, and possibly by the time I am able Dr. Alex. Hunter (p. 786), and Mr. James Torbitt, of Belfast (see his treatise), may have had time to become thoroughly awakened, for surely they must have been indulging in a sort of Rip Van Winkle nap in regard to what has been going on and "written up" in the horticultural press during the last twenty years at least concerning the raising by crossing of varieties of Potatos from the seed-berry. *Robert Fenn, Rectory, Woodstock, Oxon, June 20.*

THE GARDEN OF M. THURET.

In the current number of the *Annales des Sciences* is a memoir of the late M. Thuret, from the pen of his faithful friend, M. Bornet, and in which fuller details are given of the extraordinarily rich garden, of which several illustrations were given in our volume iii. for 1875, taken from the exquisite photographs made by M. Bornet.

M. Thuret—whose portrait was given in our volume iv. for 1875, p. 40—it appears, bought his property at Antibes in 1837. It consisted then of two fields—one of Wheat, and one of Vines surrounded by Olives. M. Thuret himself laid out the garden, and began to collect plants from the gardens in the neighbouring town of Nice, but not being able to procure many specimens he was obliged to have recourse to seed. As soon as the soil was prepared it was sown with evergreen Oaks, Aleppo and "Parasol" Pines. Between them were sown seeds of the more delicate plants obtained from the experimental garden of Hamma in Algiers, from the Jardin des Plantes at Paris, and elsewhere. For three years the results were deplorable. On this exposed soil even hardy plants froze in winter, were burnt up in summer, and were thrashed by the wind at all seasons, the ground, sloping rapidly, being torn up by the rains. A sytems of drains and trenches soon remedied the latter inconvenience, while the former disappeared as the Pines and Oaks grew up and furnished shelter. After that time the progress was wonderful. Australian Acacias, Eucalyptus, Pittosporum, Photinias, &c., grew with such rapidity that it seemed incredible that the transformation from a barren denuded soil to a well-stocked garden could have been so rapid. Difficulties had to be surmounted as time went on. Plants easy of culture in nurseries and under glass are not always easily grown in the open air; again, many of the plants whose culture was likely to be successful were not be had. Fashion had changed, and the plants of Australia, the

Cape, and the Canary Isles, so many of which are figured in the early volumes of the *Botanical Magazine*, in the works of Sweet, Bonpland, and Ventenat, were no longer to be found in nurserymen's catalogues. It is difficult to realise how much time and trouble were taken in getting together, one by one, from botanic gardens, and specially from the Jardin des Plantes of Paris, the 3000 species of evergreen winter flowering plants that the garden ultimately contained. Besides the woody plants which constituted the greater proportion of the garden, M. Thuret had got together collections of Mesembryanthemum, Stapelia, Iris, Narcissus, Scilla, Aloe, and Agave. Great care was taken in securing the correct nomenclature of these plants. Native plants of difficult determination were cultivated for the purpose of study. Catalogues of the seeds and plants were carefully compiled by M. Thuret, and, thanks to the care with which these lists were prepared, M. Thuret, and his *aide-de-camp* M. Bornet, were often enabled to note the production of spontaneous hybrids between various species of Pittosporum, Polygala, Callistemon, Passiflora, Acacia, Stapelia, Armeria, Statice, Narcissus, Aloe, Scilla, &c. The underwood was composed of Cistuses. These Cistuses, several thousands in number, were the result of artificial fertilisation. All the forms figured in Sweet's *Cistineæ*, such as C. corbariensis, Cyprius, purpureus, &c., were thus reproduced. A special quarter of the garden was specially devoted to the cultivation of specimens of this kind specially devoted to study. M. Thuret and M. Bornet undertook all the work of the garden, except the mere manual labour—the reading of catalogues, the collection of seeds, the labelling, the verification of specimens, the annual inventory, the choice of place, the planting and landscape gardening, were all done by them or under their immediate direction. The garden contains fine specimens of various species of Eucalyptus, Acacia, Banksia, Hakea, Grevillea, Yucca, Jubæa, Chamærops, and various Conifers, such as Araucaria Bidwillii, Pinus canariensis, Cupressus macrocarpa, which are already of large dimensions.

A profusion of Anemones enamelled the lawns in spring. It is impossible to conceive, without having seen it, the richness and brightness of these lawns, where are mingled all the tints comprised between deep violet, red-purple, orange, and white. To keep up this profusion of flowers (for illustration see *Gardeners' Chronicle*, vol. iii., 1875, p. 145) seeds were sown every year in large quantities of Anemone coronaria, and especially of A. hortensis, which is much less robust. The young plants, planted in the open ground the second year, were strong enough to be placed in their allotted quarters the following year. The dwelling-house is covered with climbers—Roses, Clematis, Passiflora, Bignonias, Bougainvilleas, &c. From its windows magnificent panoramic views may be obtained. To the north-east the land slopes rapidly to the Gulf of Nice; in another direction the lawns and shrubberies, overtopped by the lofty Eucalypti, form the foreground to the view of the town and fortress of Antibes, and of the Baie des Anges. A forest of Olives and Pines connects the borders of the Mediterranean with the advanced guards of the Alps, above which gleams the long snowy line of the Maritime Alps, affording a prospect comparable to that of the Swiss lakes, with the vegetation, the light, and the coloration of the South.

ORCHID CULTURE.

MY Cattleyas are all looking most wretched, leaves dry and shrivelling, turning yellow, and all the same. I have given over syringing, as I find that the water gets into the axils and bulbs, and rots me a large number. Mr. Williams recommends syringing, but how am I to do so, so as not to lose plants by rot? And some are too big to shake after syringing, so as to shake the water out of them. Would it be advisable to try it, and trust to chance? *J. R. H.*

The condition of the Cattleyas as described by "J. R. H." is certainly one to be deplored, and to give cause for much anxiety, the more especially as so many of them are specimen plants, and to become plants of such dimensions they must for a considerable time have had a deal of care and attention bestowed upon them. In speaking of Cattleyas in the aggregate, the same remarks apply to them as have already been indicated and shown in reference to Dendrobiums, and, for the matter of that, to almost every genus that is represented by so many different species as the one in question. So many are the different species—these again assuming such different forms of growth—and from such varied and different localities are they sent to us, that what will suit one at one season of the year it would be quite unwise to give to another; this remark applying chiefly to root moisture, for the time of growth of some is as widely different as the seasons themselves, and at almost any month of the year we may be sure some are in a growing state. Take as illustrations of the mode of growth the small, compact marginata, luteola, Regnelli, flowering from the top of the bulbs; Walkeriana—in this case the flowers coming up from the base of the perfect growths on short flower-stems rising from the rhizome or connecting joints of the bulbs; Mossiæ, crispa, Harrisoni, Leopoldi, amethystoglossa, labiata, &c.; of many of these the characteristics are as dissimilar as it is possible for them to be. Let us just see how the case stands with one or two of them, and then, perhaps, we may get an index or a guide to the natural disposition of the plant. That being clearly understood, the probability is that with a little reasoning, coupled with some little amount of experience, we may judge as to the requirements of the different species to bring about the results we have in view when attempting the cultivation of them. C. marginata, flowering in October and November, on the growth formed during the summer; in fact, the flower may be termed the finishing of the growth, coming up as it does immediately the growth is formed. As soon as the bulb of this has become matured, which process is going on whilst it is in flower, let the water be gradually lessened so as to induce rest; and when the resting period has arrived, which in some cases will extend to four months, a very small quantity of water will be needed, just to keep the bulbs from shrivelling; then let it show signs of activity before the amount of water at the roots is much increased. Mossiæ we may consider the Cattleya of every one's choice, and yet it perhaps is the one more than any other that is met with in an unsatisfactory condition.

The reason of this state of things I consider to be this: flowering as a rule in May and June, on bulbs formed during the previous autumn, the plants are almost invariably late in starting into growth; and if, as is often the case, the growths are only half-formed by the time the days are shortening, and the sunlight and heat are considerably less, the new growths as a natural consequence, through the longer period occupied in their formation, are not sufficiently ripened as they should be before the dull winter sets in, and therefore small, weak, and immatured bulbs are too often the result. Trianæ, flowering in the winter, is ready for growth when our summer is present, and by the aid of sunlight and heat the growth starts early, and is well-formed and ripened up ere the dull days come upon us. This is found chiefly in the districts and localities round Bogota in New Grenada, and since this habitat varies from 6000 to 8000 feet above the sea level, it will be readily seen that it must be considerably cooler than the home of Mossiæ, which is chiefly La Guayra and districts on the coast of Venezuela — Mossiæ evidently preferring the later months of our season a little warmer than is to be advised for Trianæ. Mention may also be made of Warneri, which commences to grow in the early spring months, and flowers as early as May and June on the new growths; or, again, labiata, the glorious autumn-flowering species, that starts into growth in May and June, has all the summer months to mature its growth, and at last, by October and November, crowns its labour by its showy and gorgeous spikes of bloom. But enough of this at present; only it is well to keep in mind what a plant is expected to do, if it may be so expressed, and then to give it a course of treatment having such an end in view.

Your correspondent says:—"My Cattleyas are all looking most wretched, leaves dry and shrivelling, turning yellow, and all the same." This is a condition brought about doubtless by a too free use of the water-can, and whilst the soil, as I should say, has been too wet and caused the roots to rot, the atmosphere has been too dry—the result being that, there being no root-action, and therefore no supplies of sap sent to the bulbs and leaves, the sap, &c., already in the leaves has, as it were, been extracted by the ungenial treatment to which they have been subjected. Again, "J. R. H." says that the syringing, which he appears to have pretty often applied, has caused a number of bulbs to rot, and asks whether it would be advisable after syringing to shake them so that the water that may lodge upon the leaves may be induced to fall off or run quickly away. Now, Cattleyas as a rule, are better for having as little water as possible syringed over them, and the amount required at the roots is much less than such things as Aerides, Vandas, &c., require, for as the roots of Cattleyas enter the soil and divide very freely, and thus make so many feeding points, so each root seeks for itself a certain amount of moisture, and if the soil be too wet the roots become as it were surfeited; when damp commences the points of the roots turn black, and rot and decay are sure to make inroads amongst the new bulbs and growths.

In attempting to advise in this matter the first point to notice must be the structure in which they are growing. The form of the house is not an absolute essential, though doubtless a span-roofed one is most convenient; but of whatever form it may be it should be one that can be easily shaded—where air can be given at the top and bottom, and where the stages are not bare, white-painted latticework, but the bed and side-tables, or shelves, should be covered with a moisture-holding material, which should always be of a dark colour. Taking it for granted that these are available, I should say that if any are showing symptoms of rot shake them out (though late, better now than not at all), cut away the decayed parts and pot afresh, using little soil, but crocking more freely than is usually the case; use pots as small as can conveniently be made to suit the plants, and when made fast by a few sticks place them on the stages described. At first only a small quantity of water at the roots must be given, but see that all the surroundings are kept pretty moist; use the syringe chiefly between the pots, and thus keep the stages, &c., moist; and in the afternoon (being guided in this by the position of the house), just before the sun goes off the house, give an extra damping, slightly dew all overhead, but not so that the water runs along the leaves; shut the house up, and let the temperature run up several degrees. They may then be left for the night as far as damping, &c., is needed, but see that the temperature falls gradually, so that the lowest reading of the glass may be from 4 to 6 o'clock in the morning. Under treatment such as this new roots will speedily be emitted, the buds at the base of the last growth will start away, and, all being well, nice plump growth will be formed, perhaps not so large as those that may have been formed a season or two before, but if plump and mature the eyes at the base of these will be stronger and more vigorous for another season, and thus, by gradual advances, the plants will recover their wonted health and strength, and will ultimately add richness and interest to a collection of Orchids. The temperature for such a house now and for the next two months should be about as follows:—6 A.M., 65°, gradually by sun-heat rising to 75° and 80°, remembering, of course, the need of fresh air both top and bottom, shutting the house up and damping round at about 4 P.M., so that the glass may reach 85°; then gradually permit the temperature to fall during the night to the reading indicated. It should be borne in mind that Cattleyas and Lælias, when once in a bad state, take longer than any other class to bring them round, for the old bulbs and leaves that hold the life of the plant can only be cut away by a very gradual process, which depends of course upon the progress and rate of increase of the new growths. I should say it would certainly not be advisable to try the syringing as he mentions, and trust to chance, for the "chance," as indicated by the earlier part of the communication, has had too much certainty about it to let the risk be left to itself. *W. Swan, Falkenfield, June 19.*

SEED ADULTERATION.

ON June 14 a general meeting of the Scottish Nursery and Seed Trade Association was held in the hall of the Chamber of Commerce, Edinburgh, Mr. David Roughead, Haddington, presiding.

The Chairman said that the meeting had been convened to take into consideration the working of the Seed Adulteration Act of 1869, for there had been an immense amount of adulterated seed in the market during this season. That was prejudicial not only to those of the trade who wished to conduct their business in a straightforward and honest way, but to their customers, and it must be remedied. The amount of adulteration this year was more than he had known

during the last forty years. He had had a great many samples sent him by people in the trade asking as to their quality, and on analysing those he had found them to be the most shameful seed that he had ever seen. He was therefore of opinion that the respectable portion of the trade, should try to have the existing state of matters put before the Legislature, in order to have the Act named so amended as to afford protection to the seed trade and the agriculturists. It did not in its present state do that, and it was more likely to do harm than good. The case of Horschitz and Others *v.* Clarke, tried in the High Court of Justice, London, a few days ago [and fully reported in our columns, p. 735], showed indeed that the Act was of little or no use. As an association they should go to some eminent lawyer in Edinburgh to ascertain what really were the defects in the Act, and how it might be amended so as to stamp out the notorious practice of seed adulteration presently going on. If they were advised to communicate with the Government that might be done by sending a deputation to London. When in that city the deputation might possibly have a meeting with the foreign seed merchants to find out what was the law in regard to seed adulteration in France, Germany, and other places from which the great amount of adulterated seed came. There ought to be a Government official to inspect and analyse seed entering Britain from foreign countries, and when a cargo was pronounced to be adulterated it should then and there be burned, and not allowed to be circulated among the trade. Such measures, he believed, would soon put a stop to the evil. If they honestly set about the matter there was every probability that they would get the necessary emendations made in the Act. He hoped they would, as a trade, show themselves determined to put down adulteration, as those who wished to carry on their business honestly had no chance in the market with those who offered impure seed, which could be sold at a lower rate, and thus have a tendency to reduce the price of the genuine article. The adulterators would get the cream, while the respectable traders would only get the milk, and that ought not to be.

Mr. Macintosh, Edinburgh, concurred with the remarks of the Chairman, and spoke of the strong feeling which prevailed against the Act of 1869.

The Chairman said he had forgotten to mention that, had this meeting been held a week earlier, he had intended to bring the matter before the half-yearly meeting of the Highland and Agricultural Society, the members of which were so interested in the purity of the seed that they would, he believed, give the trade assistance in regard to getting the Act altered. He intended to approach the directors of that Society in reference to the matter. He added that it was certainly very hard that the wholesale houses should not be required to give a guarantee as to the seed sent out by them, when the retailers had to do so to the farmers, and when the retailers, if they supplied impure seed, and had to pay damages, could not have recourse against the wholesale firms. This was a point that should not be overlooked in their proceedings.

Mr. Syme, Edinburgh, said that no doubt a large part of the Clover seeds came adulterated from abroad, but they must not blink the fact that a great deal of the seed was adulterated in London. He had no doubt that the adulteration was going on to as great an extent now as it was before the passing of the Act. He proposed, as suggested by the Chairman, that the Association should consult a lawyer as to the defects of the Act, and the manner in which it could be amended.

Mr. Muir Crawford, Leith, seconded the proposal.

Mr. D. Cross, Mr. Renwick, Mr. James Watt, Carlisle, and others, took part in a discussion which followed. Ultimately it was remitted to a sub-committee to carry out the resolution, and to report to a meeting of the Association.

Mr. Syme then said that the remarks made applied wholly to Clover seeds. He did not think Turnip seed was now so largely adulterated as before the passing of the Act.

The usual vote of thanks to the Chairman terminated the proceedings. *Edinburgh Daily Review.*

SEDUM SPATHULIFOLIUM.*

WE are indebted to the Rev. Mr. Ellacombe for the opportunity of figuring this species. It was originally discovered in North-west America by Douglas, but has apparently not made its way into English gardens. It is, however, amply deserving a place on the rockwork, much more so than the poor figure in Regel's *Gartenflora* would lead one to suppose. It is of moderate size, the height of the stem scarcely exceeding a span; the leaves are covered with a bluish, glaucous bloom, and are obovate-spatulate in form, the upper ones on the stem more linear in form. The flowers are bright yellow, and borne in a terminal leafy cyme, the petals being much longer than the sepals. The illustration (fig. 146) shows the plant of about its natural size.

* Hook. *Fl. Bor. Amer.* (1833), i. 227; Regel, *Gartenflora* (1872), t. 741.

Foreign Correspondence.

THE BOTANIC GARDENS AT PERADENIYA AND BUITENZORG.—The Botanic Gardens at Peradeniya and Buitenzorg are probably, each in its own way, the most remarkable of all gardens within the limits of the tropical world, the former on account of the extreme naturalness of its beauty, and the latter because of the immense variety of its plants and the luxuriance of their growth. The Ceylon garden occupies the site of the country seat and paddy fields of the last King of Kandy, who was dispossessed by the English in 1815. Soon after the occupation it was devoted by the British Government to the purpose which it now fulfils, and so successful has it proved that, with the exception of its more venerable and famous sister in Java, it may be regarded as the best known of all tropical gardens. Lying as it does in a sort of basin in a bend of the great river Mahawelliganga, 4 miles from Kandy, and surrounded on all sides by hills varying in height from a few hundred to nearly 3000 feet, it is free from all those cyclones and storms to which many other gardens, such as those of Calcutta and Madras, are exposed. Many of the trees are consequently of gigantic dimensions, and in their luxuriant growth show no traces of having ever suffered from the disastrous effects of wind.

The extent of the garden is about 135 acres, the surface is slightly undulating, and the soil is gravel and alluvium left by the river which forms the boundary of the garden on three sides. The present superintendent has devoted a quarter of a century uninterruptedly to the formation of the garden as it at present exists, and for many years spent several weeks annually at considerable personal risk and inconvenience in the exploration of the jungles in nearly every part of the island. Almost numberless new or rare plants rewarded this search, and after transportation helped to adorn the grounds at Peradeniya. These, after having been propagated and their character and habits studied, were distributed to almost every quarter of the world; and the debt which botanical science and the island generally owes to Dr. Thwaites for the vast amount of original work that he has done in connection with this garden can scarcely be exaggerated. The new plants described by him in his *Enumeratio* number several hundreds, and his last work has been the collection of more than 200 mosses and 1200 fungi. The idea which he has endeavoured to work out at Peradeniya is that of assisting Nature as little as is consistent with the perfect growth of the plants and neatness in the general appearance of the garden. For this purpose many of the forest trees indigenous to the island or long ago introduced into it are allowed to grow together very much in the same natural state in which they would be found in their native jungles, their trunks being covered with Ferns, Peppers, and other creeping plants, whilst another part of the garden bears a strong resemblance to an English park with beautiful undulating grassy expanses broken by the shadows of fine-grown forest trees, which also, however European in appearance they may seem to an untrained eye, are nevertheless thoroughly tropical in habit. Other portions, where the Palms, fruit trees, and imported plants are chiefly cultivated, are necessarily more artificial in character; but there is no sameness—no monotonous repetition of straight lines and squares and circles, which are so frequently to be seen in other purely botanical gardens. The result is a perfect success.

Opposite the entrance to the garden is an avenue of remarkably well-grown India-rubber trees (Ficus elastica), intended originally, no doubt, to form an approach to the gates; but the serpentine, buttress-shaped roots, often rising to a height of 2 feet or more in their windings above the ground, have so filled up the space between the two rows that the roadway can only be used as a footpath. The most noticeable feature about these trees is the immense size of the supports, which, commencing originally as slender pendents from the lateral branches, have so increased since taking root as to appear now more like trunks of trees than mere secondary roots. Immediately in front of the gate are some very fine specimens of the Guinea Palm (Elæis guineensis), with enormous leaves, 30 feet long, or more. On passing the gate a magnificent group of Palms, the chief beauty of the garden, is seen directly in front, with the roadway passing round it on either side. Here are some twenty members of the Palm family, with Calami or rattans and Cycads, all thriving apparently in great luxuriance and presenting a mass of varied and beautiful vegetable forms such as none but Palm trees can produce. [See our figure, 1874, vol. i., p. 439.] The more noticeable plants are Attalea, Elæis, Borassus, Latania, Licuala, Livistona, Sabal, Phœnix, Kentia, Areca, Oncospermum; whilst towering above all is the royal Talipot (Corypha umbraculifera), of which the Singhalese are so justly proud. The leaves of this Palm are so large that many of them contain more than 140 square feet of surface, and when taken from the tree in an early stage form a very valuable material for coverings of various kinds and especially for native umbrellas, for which purpose a portion of one small leaf is amply sufficient. The tree once in its lifetime produces a most remarkable crown of flowers, 15 or 20 feet in height, and of a beautiful straw colour. This continues for eight or ten months; an enormous crop of seeds follows, and the tree, completely exhausted by this effort at reproduction, dies rapidly away. The fan-like leaves of Sabal and Livistona here contrast wonderfully well with the drooping plumage of Attalea and Borassus, as well as with the somewhat stiffly-pinnate Cycads. After passing this group a long avenue, densely lined with foliage of various forms and hues, leads to the centre of the garden. The scent of innumerable trees and shrubs in flower ladens the air, and numbers of bright coloured butterflies hold high festival overhead. Glimpses here and there are obtained of park-like scenery on the left, and on a little rising ground like a tumulus overlooking the river stands the bungalow of the Superintendent. The verandah is covered with the purple and silver foliage of Cissus, amidst which may be seen the scarlet and gold flowers of Gloriosa superba. Beneath, the choicest of tropical Ferns, Begonias, Caladiums, Arrowroots, dwarf Palms, &c., find shelter and care, and by their appearance seem to respond most heartily to their treatment. In front are Norfolk Island and New Caledonia Pines, with the Bermuda Juniper and other Conifers. A little further away some of the indigenous forest trees of the island, and especially a gigantic Banyan, may be noticed. Here, too, is the Durian, a Malayan tree, bearing the most prized of all the fruits of the Straits, but possessing such an offensive odour that it is with the utmost difficulty that a stranger can be persuaded to taste it, and even in Batavia it has frequently to be eaten in the bath-room, instead of at the breakfast-table. This tree has never borne fruit in Ceylon. Not far from it is the Seaforthia elegans, the most graceful of all the Palm family, and the Traveller's Tree (Ravenala madagascariensis), somewhat stiff, perhaps, when standing alone, but here, in the midst of other foliage, adding much to the general beauty of the scene. Few spots in the world can compare with this for beauty, and it is no wonder that its occupant is enamoured of it, and thinks it a very paradise—so many lovely forms of tropical vegetation lie around in profusion, and all the year through apparently are full of eager life. On the one side flows a broad and deep river, on the other the mountains rise near at hand to a height of nearly 3000 feet. The rain often falls in deluges, but rarely injures the garden, and the winds only overthrow the most decrepit of the trees. The spot is indeed a paradise, and not the least charm about it is the air of perpetual youth and joyousness, in which Nature seems ever to clothe herself. The honey-bird hangs her nest from the Hibiscus spray by the window or under the shade of the verandah, and rears her brood conscious of perfect safety. The lizard and the snake, with the exception of the deadly cobra, so long as they behave themselves, may sun themselves on the steps unmolested. As evening closes in, a troop of diminutive bats comes racing through the rooms and along the verandah like a rush of school-boys out of school. In a few minutes these, too, are gone. It was only—the Superintendent says, and he seems to be on good terms with them, and to know all about their doings—only a game at romps before going out to seek their breakfast. Then the fireflies light their tiny lamps by thousands, and flicker about the trees. But to return to my description of the garden.

A narrow roadway on the right leads from the main avenue to the fernery and the nurseries. The former of these is a very lovely spot, full of Ferns from all parts of the Tropics, and of all sizes, from the lordly Tree Fern down to the minutest Hymenophyllum or Trichomanes. Above them, and as a protection from the sun, rise forest trees densely clad with Peppers, Orchids, Arums, and climbing Ferns, whilst the general aspect of the Fern foliage is broken by Begonias, Heliconias, Dracænas, Hedychiums, Marantaceæ, Zingibers, dwarf Palms, &c., producing an effect which, though not so striking as that of the group of Palms near the entrance, is, nevertheless, far superior to anything of the kind that can be met with in a temperate climate. From the Ferns we pass on to the nursery, where Cardamons, Cacaos, Vanillas, Ipecacuanha plants, besides numerous varieties of fruit-bearing and ornamental trees, are being grown for distribution throughout the island. The cultivation of the three former plants is likely to become popular with the natives, and if successful, as seems probable, will add very greatly to the sources of native wealth, as they seem adapted to low lands where little or nothing is grown at present. The Vanilla being a creeper, the plan adopted is to train it up wooden posts, and over a trelliswork of beams, which allows of all parts of the plant being easily reached, the flowers artificially fertilised, and the fruit gathered. This part of the garden lies alongside the river, over which huge clumps of Bamboo throw their feathery foliage, one gigantic species of this plant attaining here sometimes a height of 80 or 90 feet, and a circumference of over 30 inches. Close by is a beautiful avenue of Cabbage Palms (Oreodoxa regia), and some wonderful specimens of the Cucumber family overrunning trees 100 feet in height, and hanging from their branches in long and graceful masses of light-coloured foliage. The road continues to follow the bank of the river through woods, and leaving on the left the "foxery" with its many thousands of flying foxes dependent head downwards from the topmost branches, we presently emerge near the Superintendent's bungalow. Passing this, and prolonging our walk, several more park-like views are obtained, many beautiful and rare trees are met with, and the road terminates near the main entrance, whence we started. Not far from this point are two specimens of the Coco de Mer (Lodoicea sechellarum), or double Coco-nut of the Seychelles, whose fruit, when formerly cast on the shores of India or Ceylon, used to be worth its weight in gold on account of its supposed properties as an aphrodisiac, for before it was known whence it came the plant that produced it was supposed to grow at the bottom of the sea, and the fruit to be thrown up by the waves, when in reality it had been drifted from the Seychelles under the influence of the south-west monsoon. A more noticeable fact is that this Palm is found nowhere in the world except on this little isolated group of granitic islands. The last object that attracts our attention is an enormous mass of a lilac-flowered creeper (Thunbergia laurifolia), which has covered the tops of several lofty trees, enveloping them completely, as well as the shrubs at their base, in a mantle of dense foliage, which produces an appearance very similar to that of an Ivy-covered ruin, with broken column and arch and window, as in old abbeys at home, only the aspect is less sombre, and the whole mass sways bodily in the breeze.

But besides its beautiful the garden has its useful side. Tea plants and seed, Cacaos, Vanillas, Cloves, Nutmegs, Peppers, Cinnamon, and Ipecacuanha, besides other fruit and ornamental trees, with seeds of various kinds, are distributed throughout the island in considerable quantities every year. The Cinchonas are raised at the Hakgala garden, which is situate at an elevation of about 5000 feet, and the numbers of these plants issued during the years 1873 and 1874 were 670 000 and 827,000 respectively. With regard to the climate of Peradeniya, the meteorological statistics of Kandy, which is only 4 miles distant, and at the same elevation, may be taken as giving a very fair idea of it. The following results are the average of the last five years. The annual amount of rainfall is 82 inches, which is spread over 200 days. The maximum and minimum temperatures in the shade are 89° Fahr. and 57° Fahr. respectively, and the mean temperature of the air is 75° Fahr. The average maximum temperature in the sun is 162° Fahr., and the minimum temperature on the grass 43°.5 Fahr. *R. Abbay.*

(*To be continued*)

FIG. 146.—SEDUM SPATHULIFOLIUM. (SEE P. 820.)

PHILADELPHIA: *May* 30.—The collection of plants exhibited by Mr. Williams, already alluded to, is thriving well, in fact as well as they could be in the houses at Victoria Nurseries, under their usual treatment. There are several plants in full bloom and beauty, and attract much attention. Æchmea Marie Reginæ is in full beauty, its spikes of mauve-coloured bracts are very large. Some of the Orchids are also in full bloom. The foliage plants and Palms are making fine young growths; the Ferns, too, such as Adiantum farleyense and gracillimum, are throwing up their tender young fronds: the Anthuriums, with their bright coloured spathes, are in full perfection. *Correspondent.*

THE BLACK WOOD OF RANNOCH, PERTHSHIRE.

THOUGH it is pretty evident that at no very remote period the greater part of Scotland north of the Grampians was covered with Pine forests, yet now woods of indigenous Firs are few and far between. The chief remaining ones are to be found about the heads of the valleys of the Dee in Aberdeenshire and of the Spey in Inverness-shire, whilst another equally beautiful, but perhaps not so well known, lies on the shores of Loch Rannoch, one of the tributary lochs of the Tay, in Perthshire. The latter, from its sombre appearance, is called by the natives the "Black Wood," a name corrupted by such Southrons as penetrate into Rannoch into the "Black Forest."

A "forest," it is perhaps almost unnecessary to remark, means in Scotland a tract of country set apart for red deer, and need not necessarily contain a single tree. "Trees! wha ever heard o' trees in a forest?" was the reply given by an indignant Gael to a tourist who inquired where the trees were in a certain "forest."

The Black Wood lies on the south side of Loch Rannoch, and extends along the shores of the loch for about two and a-half miles, with an average breadth of about one mile. This is about the extent of the dense part of the wood, but including the outlying parts the length is nearly seven miles, and the greatest

breadth five. In altitude above the sea level the wood lies between 700 and 1500 feet.

The earliest notice of this wood that I have been as yet able to find is not further back than about the end of the eighteenth century. In a *General View of the Agriculture of the County of Perth*, drawn up for the Board of Agriculture in 1799, it is stated that "the family of Struan Robertson has from time immemorial drawn a considerable revenue from the Fir wood on that estate, which grows naturally on the side of Loch Rannoch;" and from other information that I have received it would seem that the timber of the Black Wood was at one time extensively used for building purposes, and proved as durable as the foreign timber now so largely imported.

At one time there was a project for bringing the timber extensively into the market. A company was formed and canals made to float the logs down to the loch, and thence by the rivers Tummel and Tay to Perth. The scheme, however, failed, and the Black Wood escaped destruction. Now it seems to be rather increasing in size than diminishing, as the present proprietor of the largest part (Mr. Wentworth, of Dall) has planted extensively on the outskirts of the old wood.

Though the Black Wood in its densest parts consists almost entirely of Scots Fir, yet in many parts there is a considerable mixture of Birch, Mountain Ash, Bird Cherry, and Aspen, the first mentioned being by far the most numerous of the four. The ground which it covers is exceedingly rugged, being hillocky in the extreme. These hillocks are covered with masses of Vaccinium Vitis-Idæa (commonly, though erroneously, called in north Scotland, Cranberry), Blaeberry (Bilberry), and Heather, which in many places is waist-deep. Between the hillocks is marshy ground, in which in one or two spots flourishes the rare Orchid, Corallorhiza innata. The Vaccinium Vitis-Idæa at all seasons forms a lovely carpet by its glossy dark green foliage—at one time variegated with the white pink-tinted flowers, at another by the bright red berries—from which the great red trunks of the Firs rise in massive columns. The wood is traversed by several streams with high rocky banks, on which the trees have planted themselves in many picturesque attitudes. Thus, when the stream takes for some distance a straight course, scenes are formed which would drive a landscape painter almost mad with delight; the burn rippling along far down below, now splashing over some black rock, now resting for a moment in a clear, deep pool, only to ripple again over the smooth water-worn stones, and then again to fall over another rock; the steep, rugged banks at one place revealing the cold, grey granite, at another clothed thickly with Ferns and grasses and wild flowers, with here and there the straight stem of a young Pine or the gnarled bole of an old Birch leaning over from one bank to the other, the graceful weeping branches of the Birch almost dipping in the waters below; and then the long, serried ranks of Fir trees clothing the summit of the banks, column after column of ruddy trunks supporting a massive roof of black-green, through occasional openings of which the intensely blue sky is visible. Or, to take another scene, let us go to the head of the wood near Craig Crois (the Rocky Hill of the Cross), where some of the Pines have been overtaken by death, and stand stretching aloft their weird and leafless boughs. There, when the white mists are streaming down and twisting among the rocky pinnacles of the hill, the Pine wood has quite another appearance. The grey hill with tier above tier of precipices; the living Firs dark and gloomy, with stems no longer lit up by the bright sunlight; the dead trees with their bleached and withered branches; the ancient Birches whose rugged trunks, loaded with moss and lichen, seem borne down with weight of years; all these, half hid, half seen through the mist, make a picture which no word-painting can describe.

It will not do, however, to leave the Black Wood with no allusion to its fauna. Rannoch is well known to every British entomologist as a place peculiarly rich in alpine and boreal insects, and this celebrity is chiefly due to its possession of the Black Wood. It would be out of place to give lists here of the insects of all orders which occur. It will be sufficient to mention that some of them have not been found elsewhere in Britain, and that a few have not been as yet detected anywhere else at all. Of the higher forms of animal life the red and roe deer find congenial homes in the depths of the wood; the capercailzie has re-established itself amongst the branches of the Fir trees, and the golden eagle may still be seen sailing majestically over the wood from its eyrie on Garb Meal.

The Black Wood is the only extensive wood of indigenous Scots Fir (see p. 825) that we now have in Perthshire. In compiling the *Flora of Perthshire* I have been necessarily obliged to find out, as far as possible, what really indigenous specimens of Pinus sylvestris still remain in the county, and I have been rather surprised to find how widely spread that tree still is in its native condition. Most of them are amongst the mountains in the western part of the county, as in Glens Lyon and Dochart. In Athole, which at one time must have been covered with Scots Firs, I have seen but a single tree—standing beside the Tarff, a tributary of the Tilt—which has any claim to be native, and in this belief I am supported by the Duke of Athol, who tells me that this is the only indigenous Fir tree that he knows of in the Athole Forest. But what surprised me most was to find that we have within three miles of Perth a few native Pines—a fact pointed out to me by Mr. McCorquodale, the veteran forester of the Earl of Mansfield. *F. Buchanan White, M.D., F.L.S.*

Apiary.

QUEEN BEE IN A SUPER.—As the time for taking honey will soon be here, I thought it might be interesting to some of your readers if I mentioned a circumstance which happened in the garden here. I have tried various plans for taking honey and saving the bees, but now consider the super placed on the top the best. I get a dinner-plate the full size of the small top hive, when, after gently separating it from the stock, I lift it up quickly, place it on my plate, and step off to some dark room or shed, leaving the door a little way open, lay my prize on one side, and gently tap the hive, when the bees will, one after another, leave it, and make for the light, leaving their honey, bright and beautiful, behind. On one occasion I forgot my honey till next morning, when, on looking at the stock from whence the cap had been removed, all was noise and confusion. I could not at first think of the cause of all this hubbub, but after a moment's reflection I thought, "Surely the queen was not in the super which I removed yesterday afternoon." Away I went to the Mushroom-house, which I had used as my dark room, and there at the door was a knot of bees about the size of a bantam's egg. I parted the little devoted band, and there in their midst was the queen. She had left the super, and in company with the other bees had crawled to the door, but from some cause or other could not fly.

"Take her up tenderly, lift her with care"

—I carried her back to the hive, placed her at the port, where she entered, and in a moment all was peace and harmony where before was confusion and discord, and in less time than it takes me to write this they were off and away for more honey, and also to fertilise and hybridise the blossoms, and that not only in the garden but alike in meadow, moor, and mountain. Now from this little incident I have learnt two things—1st, to look out for the queen in the super; 2d, and it is a valuable lesson, and I tell it you—it is the necessity of a head to direct, and that some one take the responsibility. My moral is—employers, give all your orders to your gardener; and to gardeners, give all your orders to your foreman. *J. Rust, Eridge Castle.*

The Villa Garden.

WINDOW GARDENING AND WINDOW BOXES.—Those who follow this method of decorative gardening know full well what an exceedingly trying time it is for plants growing in exposed positions when a burning sun shines fiercely from an unclouded sky, and a hot wind almost dries up the tissue of the parched leaves:—

"When day is at its sultriest, heaviest heat,
When birds scarce twitter in the noontide shade."

Such a day plays sad havoc with a box of flowering plants, if, as unhappily is too often the case, it is allowed to suffer for want of moisture when it is most needed; and how must those plants suffer that are imprisoned in glass cases, that for the time become a burning chamber without any covering to ward off the sun's rays or cooling breeze to restore the exhausted energies of Nature. Plants are often sadly and inhumanly tortured, and could they only give expression to their emotions what a wail of suffering would go up towards high Heaven!

Blistering sunny days and drying winds are ordinances of Nature, and they will happen and must be endured. How can their trying effects best be mitigated is the question that naturally presses on the attention of Villa gardeners. Some steps are absolutely necessary if the beauty of the plants is to be prolonged. Plants generally used in London boxes at this season of the year, such as Pelargoniums, or, to make it perfectly clear, Geraniums, using the term as comprehending the zonal class; Fuchsias, Calceolarias, Lobelias, and Nasturtiums, are, to a great extent subjects that thrive in the sunshine if kept moist at the roots, and flower successionally during the summer if favoured by conditions likely to bring about this result. It is of the greatest importance that the plants do not suffer for want of moisture, but it is for lack of this that so many exterior window boxes so soon take on a miserable and woe-begone appearance. It is considered that a watering in the morning will suffice for the day, and that no more is needed during a scorching June day than during a cool cloudy day in September. It is a lack of simple common sense more than a want of gardening knowledge, that forgets this important fact; when a box of window plants becomes thickly filled with roots dryness at the roots soon happens in drying weather, and then the blossoms fade and fall, and the leaves turn yellow and drop from the stalks.

A slight screen overhead would be of much service for the purpose of warding off from the box the fierce noontide heat. As a matter of course this recommendation refers to boxes of window plants occupying fully exposed south and south-west aspects; for it is in such positions that the great majority of window boxes are to be found. This screen should be made of some light material, like tiffany, and be spread over an oblong framework, slightly curved, so as to throw off rain from a passing shower. This could be easily fixed to the sides of a box, or to the wall, and be set up or removed at pleasure. It should be open at the sides and back and front. What is required is not a case, but a screen simply, which, while warding off the sun's rays, would not intercept the flow of light through the window to the room. Such a screen could be so securely fastened as to be in no danger of being swept away by a passing gale, and, indeed, being readily removable, it could soon be detached and laid on one side when threatened with the fury of a coming storm.

It is obvious that another great desideratum is a facility for husbanding moisture at the roots. As a general rule, window-boxes on the outside of windows—for it is specially to them these remarks are intended to apply—are filled in two ways: either by planting in soil for the summer, or a good portion of the summer, or by using a box so constructed as that plants in pots can be stood in it and removed at will when deemed necessary to replace them with others. In the latter case it is easy to plunge the pots in damp moss or cocoa-nut fibre, and so keep the roots cool and pleasant for some time. The interior of the box thus affords convenience for economising moisture.

It is clear that in the case of a box filled with plants placed in soil that any agency of this character must be applied on the exterior. We will suppose that the sides of the box fit close up to the brick or wooden framework of the window, and that therefore there is no space for our purpose at the sides. It is therefore to the front of the box that attention must be turned. A false front, so fitted as that it can be fixed and removed when necessary might be provided, and so arranged as to leave a space 2 inches in width between it and the box. This space might be filled with moss or cocoa-nut fibre, and kept moist, and it would prove very cool and pleasant to the roots, and maintain them in a moist condition for a considerable time. If some trailing plant like Convolvulus mauritanicus, which does well in ordinary window-boxes, were employed as a foreground it might be made to droop nicely over the false front, and so form a pretty margin.

Window-boxes are greatly assisted by surface waterings, by sprinkling and even sponging the leaves of the plants, and by the quick removal of all decaying leaves and dead blossoms.

STRAWBERRIES.—The Villa gardener will have to

look to the Strawberry, we fear, for the main crop of fruit he is likely to secure for the season; Apples, Pears, Cherries, and Plums will be but a spare crop, but Strawberries are blooming with great abundance, and are freely setting their fruit. A good watering of the roots during the prevalence of the present spell of dry weather will be found of great service, and then a mulching of short grass, fresh manure, cocoa-nut fibre, or some such material applied. This serves two purposes—it keeps the soil about the plants moist and checks evaporation, and it keeps the ripening fruit clean from the dirt thrown up by splashing showers.

Garden Operations.

PLANT HOUSES.

PLANT STOVE.—The naturally free blooming habit of Ixoras can only be fully brought out by judicious management. If the shoots are cut back when the first crop of flowers are over—a way in which they are generally treated—the plants will at once break again and bloom a second time when the growth has attained sufficient strength; but if, instead of thus cutting-in the shoots, they are bent close in bringing their points down so far as they will reach to the base of the plant, they will push from the eyes near the bottom of the bent shoots much stronger, and produce a far greater quantity of flowers in less time than if cut back in the usual manner. This is nothing more than a simple consequence of the roots not receiving a check such as is inseparable from the removal of so much leaf-surface when the shoots are cut away. If the plants are required to produce a second flower in the least possible time, the growths instead of being bent should be kept in an erect position, just nipping the old blooms out without removing any wood: in this way they will push from the eyes immediately below where the first flowers were produced, and bloom much sooner than when they break lower down, but the plants will have a more straggling appearance. By similar treatment, Clerodendrons of the fallax and Kæmpferi type, and almost any stove plant that flowers from the young wood, can be induced to bloom a second time sooner than if cut-in. Allamandas, Dipladenias, Bougainvillea glabra, and other subjects of similar habit that bloom repeatedly through the summer, should all along be regularly supplied with manure-water from the time they have got the soil filled with roots. If the pots are at all commensurate in size to that of the plants, it is better to support them in this way than by a second shift; but anything of a nature such as the above, that makes such an amount of growth in a single season, cannot possibly keep on without the regular application of stimulants to assist the limited amount of soil they receive at the spring potting. It is the absence of liberal feeding that frequently limits the flowering capabilities of these plants to an extent of one-half of what it otherwise would be. Vigorous, quick-growing things of this description will stand manure-water in a much stronger state than slow growers, and will take it through the summer almost continuously. Where the small yellow thrips exist, Allamandas will require a thorough drenching with the syringe every afternoon, getting the water well into the points of the shoots; nothing else will prevent the young leaves and flower-buds when newly formed from being spoilt by this pest, for the destruction of which fumigation is all but useless. Where mealy-bug is present amongst stove plants it will, at this time of the year, be necessary to keep constantly going over them, or they will soon get in such a state as to make their flowering in anything like fair condition an impossibility. The best method is to spend a short time, early in the morning, at the work before the house gets intolerably hot. Quick-growing twiners will now require continual attention in regulating their shoots so as to prevent them from getting entangled. Spring-struck plants of such subjects as Gardenias, Euphorbia Jacquiniæflora, Eranthemum pulchellum, Plumbago rosea, Justicias, Sericographis, Scuttelaria Mocciniana, Thyrsacanthus rutilans, and Aphelandras, as soon as the small pots they occupy are fairly filled with roots, should at once be moved on into those they are to flower in. The advantage of never letting things like these receive a check, which they will do if allowed to get at all pot-bound, is, that when kept gradually moving they need never be hurried, and consequently the growth is of a much more robust, sturdy character than when it is the result of an over-high temperature with a close, confined atmosphere. The flowering capabilities of plants of the above description do not so much depend on mere size as upon the solidity of the growth, the result of gradual development, in preference to such as have been at any time hurried, with the subsequent attempt to impart the necessary hardening process by an extra amount of air and light. Growth that is made under conditions that give the requisite stamina to the plant as it progresses is much the best. *T. Baines.*

FRUIT HOUSES.

PEACHES AND NECTARINES.—By no means relinquish the ordinary effort which is usually made towards insuring the best results with the crop of fruit of these subjects, but when it is gathered assiduously persevere in the same respect, in order to secure a perfect development of the wood and buds, as herein lies the secret of success in the subsequent season, and especially so in the case of those trees which are to be advanced at an early period for the succeeding season. For the present continue to ventilate as before advised, and wash the trees every day with the syringe or engine, applying it against the roof forcibly so that the water may rebound on the upper surface of the leaves, as here at this season, even in well attended houses, that execrable pest the red-spider will, be almost sure to be present; likewise see to the state of the borders, that these be maintained for a considerable period onwards in a moist condition, and where the trees are at all weakly now is a good time to promote strength in them by stimulants, given in a mild form in the way of guano or other manurial agents. In the case of trees which are already mulched it will speedily operate; and where such materials are not applied it may now be done with beneficial effects, as this valuable medium does not only preserve a suitable state of surface moisture while the fruit is advancing to perfection, but afterwards, when sunshine and air more fully operate on its surface, with ordinary attention it will contribute to the same end, and, moreover, in a great degree counteract the mischief which is caused by its cracking, which, to the detriment of the trees, will oftentimes render copious supplies of water almost ineffectual. An occasional inspection of the trees will also be necessary, to check exuberant growth; the side shoots from these should be kept pinched in to one or two leaves, and where shoots are too thickly laid-in some can be removed now with advantage. In later houses attend to the ordinary wants, such as stopping, tying-in, &c., and ply the syringe copiously and regularly over the trees until the fruit begins to soften. In the case of trees in pots, the limited quantity of soil to which they are restricted will tend materially towards accelerating ripeness in the wood; when its appearance indicates this condition remove the trees to a sunny position outside, and give constant attention to watering, syringing and stopping. At most places a bed of coal-ashes is to be found; here will be a suitable place, and the pots should be partly surrounded with them to avoid the powerful effects of sunshine operating directly upon the roots. *G. T. Miles, Wycombe Abbey Gardens.*

KITCHEN GARDEN.

The late rains, followed by real summer weather, have given a remarkable impetus to vegetation, and weeds, as usual, have not been slow in showing how much they appreciate the desirable change that has recently taken place. To wage war with these must now engage the principal attention, if anything like neatness and order is to be maintained in this department, for, when allowed to get a-head and strew the ground with seed, there is no end to the incessant labour they cause to keep them down afterwards. If taken in hand while small, at least double the amount of work in cleaning may be done, as the hoe can be run quickly through, and by seizing on the right time to use it the weather may be made to aid as a powerful ally in laying them prostrate, and dealing the final death-blow. Independent of the great harm weeds do to young low-growing crops by drawing them up and exhausting the land, their removal, when of large size, causes such a displacement of the soil that plants are a long time recovering from the check received through having their roots disturbed. There is, therefore, every reason why they should be got at before attaining much size, whether they have to be eradicated by the hoe or pulling them up; and if by the latter method, choose a showery time for the purpose, that the rain may make good any disturbance the soil has undergone in getting them out. The final thinning of Beet, Salsify, Carrots, Onions, &c., should be made at once, and in running the hoe between the rows care should be taken that it does not come in contact with the plants, or the bulbs will be injured and deformed. Both the latter, when grown in soils that have been long under cultivation, are very subject to grub, for which a good dressing of soot is the best remedy, and if applied at once it will act as a preventive, besides producing a marked beneficial effect on the growth of the crop. Leeks if sown early will now be sufficiently strong for getting out, and where required of large size should be planted in trenches and treated much after the manner requisite to grow good Celery. They may, however, be had almost as fine by dibbling large holes in a rich piece of ground that has been recently trenched and well manured in which to drop the plants. These should be made 6 or 9 inches deep, and a foot apart in the rows, and in planting scatter only sufficient soil just to cover the roots, that the holes around the shank of the plants may be gradually filled up as growth proceeds, by which means a thick blanched stem may be had. Successional sowings of Turnips should be frequently made, that young juicy bulbs may be had, as when they stand long on the ground at this season their flavour is anything but agreeable. In hot walled-in gardens it is a difficult matter to keep them free from the attacks of fly, the destructive ravages of which have baffled the ingenuity of growers to find a remedy. They have a strong aversion to wood ashes, soot, and lime-dust, and these should be scattered thinly over the leaves early in the morning while the dew is on them. Slow growth favours the attacks of these pests, and, therefore, a few handfuls of guano added to the above will, by its stimulating effects, help the plants out of their way. The time of year has now arrived when mulching may be resorted to with very beneficial results to most growing crops, as it has the twofold advantage of enriching the soil and preventing moisture from escaping, thus enabling the roots of plants to feed near the surface where they can derive full benefit from any showers that fall, or from what liquid matter may be administered artificially. In the case of Peas and Scarlet Runners, to which water has to be applied rather freely during hot dry weather, a mulching is of the greatest importance, and has an astonishing effect both on the quality and quantity of the produce. Either of the above got in now must have the ground specially prepared for them by digging a trench and working in plenty of short rotten manure, keeping the same well down for the roots to lay hold of by the time the Peas or Beans come into bearing. In finishing off the trenches before sowing or planting they should be left slightly lower than the general level, so as to admit of water being easily applied to the rows. For late work I have as yet found no Pea equal to the old British Queen for continuity of bearing and resisting the attacks of mildew, to which all Peas are more or less subject during the summer months. Where Broad Beans are required during the autumn, the dwarf Fan or Royal Cluster will be found the most serviceable, on account of its free-bearing qualities and mild delicate flavour, as well as its adaptability for growing on borders, or positions where the taller varieties would be quite out of character. The ridges on which Cucumbers are now growing should be at once littered down, which will assist in retaining the heat in the fermenting material, and keep the roots in a more uniform state as to moisture. Peg, thin, and train the branches as may be requisite from time to time, and keep clear from aphides by giving a syringing with tobacco-water. Strawberry plants that have been turned out from the forcing houses should at once be planted in beds or borders to succeed others that are becoming exhausted through age or unsuitable soil. To do these well the ground should be trenched or dug deep, and have plenty of manure worked well in; after which tread as solid as possible, and plant in rows 2 ft. 6 in. apart, and 18 in. from plant to plant. This will admit the sun and air freely amongst them, and give proper room to gather the crop. *J. Sheppard, Woolverstone Park.*

Obituary.

DIED suddenly, at 8 A.M. on the 17th inst., at his residence at Forest Hill, JAMES MATTHEWS, aged sixty-seven. Mr. Matthews was known to many of our readers, having been connected with this journal as publisher from its establishment in 1841 to November, 1869. Impaired eyesight compelled him to retire at that time from a post the duties of which he had for so many years conducted with such fidelity and courtesy that he had won the full confidence of his employers, the esteem of his fellows, and the kindly regard of all those with whom he came into contact.

—— On the 12th inst., aged 75, EDWARD NEWMAN. This gentleman has been so long before the public as a naturalist, and has done such excellent service in popularising natural history and extending its bounds, that his loss will be felt as a personal one by a large number of readers, who never, perhaps, had direct communication with him. As publisher of the *Phytologist*, of the *Zoologist*, and the *Entomologist* he effected much good; and his services were always to be counted on when information and help were wanted. He was an early contributor to the *Magazine of Natural History*, to which he contributed a series of articles on the "Natural History of Godalming," subsequently reprinted under the title of the *Letters of Rusticus*. To readers of this journal he is, perhaps, best known by his works on British Ferns.

THE

Gardeners' Chronicle.

SATURDAY, JUNE 24, 1876.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	June 26	Sale of Brazilian Orchids, at Stevens' Rooms
TUESDAY,	June 27	Sale of Greenhouse Plants, Orchids, &c., at Stevens' Rooms.
WEDNESDAY,	June 28	Maidstone Rose Show. Torbay Horticultural Society's Show (two days). Leeds Horticultural Society's Exhibition (three days). Colchester and Essex Horticultural Society's Show (two days). Sale of Orchids, at Stevens' Rooms.
THURSDAY,	June 29	Royal Horticultural Society of Ireland: Summer Show. Richmond Horticultural Society's Exhibition.
FRIDAY,	June 30	Gardeners' Royal Benevolent Institution: Anniversary Festival. Crystal Palace Rose Show (two days).

A PAPER recently published by M. CORENWINDER in the *Annales Agronomiques*, on the effect of the REMOVAL OF THE LEAVES OF THE SUGAR-BEET on the production of sugar, is of such interest that we shall do well, as it seems to us, in calling attention to it. It will be seen that, making the necessary allowances for altered circumstances, the results obtained have a direct bearing not only on the very common practice of removing the leaves of Mangel Wurzel, but also on the removal of the leaves of Strawberry plants, still practised by some gardeners, and indeed on the question of pruning in general. Leaving the reader to apply for himself the principles enunciated, we may briefly summarise M. CORENWINDER'S observations.

The object which agriculturists have in removing the leaves of Sugar-Beet, and in this country those of Mangel, is to obtain fodder for cattle and to let in air to the roots, using the latter term here in its cultural significance rather than in a strict botanical sense.

The leaves are usually removed while the plant is in full growth, and therefore it is not unreasonable to suppose that the gain to the cultivator must be counterbalanced by serious disadvantages, and that this is the case is sufficiently proved by the French experimenter abovenamed. That gentleman, looking at the matter from a chemical point of view, perceived the injurious effects that were likely to follow such a practice, and determined to put it to the test of actual experiment. It is not necessary for us to detail the steps of the experiments, which were made in the field on a large scale, nor to indicate all the precautions that were taken; suffice it to say that the leaves removed amounted to 257 kilogrammes (a kilogramme is about 1 lb. 2 oz.) per are (1 are = nearly 120 square yards). These leaves were supplied to cows, each of which consumed about 100 kilogrammes daily. The quantity of milk was, it is true, increased, but it was of inferior quality, watery, and yielded a relatively small proportion of butter.

From a square space of 100 metres, 863 roots were taken, the leaves of which had not been removed; these weighed, after the removal of the earth, &c., 865 kilogrammes. From a square space of equal dimensions, containing the plants from which the leaves were removed, 859 roots were taken, which weighed, on the whole, 719 kilogrammes, so that there was a loss in weight of 146 kilogrammes in the stripped roots, as compared with those from which the leaves had not been removed.

Proceeding then to examine chemically the roots, the following results were arrived at. In the roots left to themselves there was a percentage (omitting fractions) of eighty-five of water, nine of sugar, four of nitrogenous matters and cellulose, and a trace of mineral matters. Where the leaves had been removed the proportions were—water, eighty-eight; sugar, six; nitrogenous matters, four; mineral matters, rather more than in the preceding case. It will be seen that in the stripped Beetroots the smaller amount of sugar was replaced by a nearly equivalent quantity of—water.

In another series of experiments the leaves from a row of Sugar-Beet were entirely removed, the roots being left in the ground for about six weeks during which time they produced a series of small leaves round the crown. At the same time that the leaves were removed from the one set the roots of a similar number which had been allowed to grow naturally were lifted, and these were at once analysed. Six weeks subsequently the stripped roots were lifted, and ten of them were analysed to compare with the results obtained by the analysis of the unmutilated roots lifted previously. The principal results were that in the ten untouched roots the weight was slightly greater, and the sugar in nearly double quantities as compared with the mutilated roots. The roots thus lost in the course of forty-four days, consequent on the entire removal of their leaves, 45 per cent. of the sugar they contained at the time of removal of the leaves.

M. CORENWINDER, then, is perfectly justified in stating that the removal of the leaves, as usually practised, greatly reduces both the yield and the quantity of sugar, at the same time that the saline matters are increased, and the increase of which latter corresponds with a diminution of both the quantity and the quality of the sugar.

The diminished sugar in the roots of the mutilated plants is accounted for by the demands made upon them by the growth of new leaves round the collar. The carbonaceous materials required to build up these latter are doubtless derived from the sugar stored up in the root. To show the importance of the leaves in absorbing carbonic acid under the influence of solar light, M. CORENWINDER grew under like conditions some small-leaved and some large-leaved Beetroots, and then analysed the two, to ascertain the proportion of sugar in each. The total weight of roots produced was the same, but while in the small-leaved Beet the yield of sugar was 8 per cent., it amounted to 10 per cent. in the large-leaved varieties.

In conclusion it is shown that the leaves of the Beetroot absorb and manufacture the elements necessary for the production of the sugar which is stored up in the root. One of these elements is carbon, which is principally derived from the atmosphere by the leaves, and, even if any be absorbed by the roots, it is by the agency of the leaves that it becomes utilised for the plant.

A more conclusive demonstration of the importance of the work done by the leaves has not been made, and we trust that the lesson will not be lost upon the practical cultivator, who should know how to adapt the truths here put before him to the varying conditions, circumstances, and requirements he has to deal with.

—— MR. SCLATER-BOOTH, in moving recently for leave to bring in a Bill in Parliament to make further provision for the better prevention of the POLLUTION OF RIVERS, said that the present Bill proposed to enact generally that rivers were to be kept free from pollution, and that their pollution in various ways was to be a statutable offence. In the first place it was intended to prohibit the casting of noxious refuse, whether manufacturing or mining, into rivers, so as to pollute the stream or to impede navigation. The second part of the Bill related to the mode of dealing with the sewage of towns, and it was proposed that the pollution of rivers by that means should also be made a statutable offence, but that ample time should be given within which proceedings should be instituted, as well as ample time to the authorities within which to construct necessary works. There was nothing in that portion of the Bill more stringent than had for many years been the law with reference to the streams which flowed into the Thames and the Lea, in both of which cases the arbitrary power of preventing the throwing of noxious sewage into those streams had been prohibited. The manufacturing and mineral pollution of rivers stood in a very different position, but it was not deemed expedient in such a Bill as the present to make any exceptions from the general obligations of the law, but it was proposed in the case of manufacturing and mineral pollution not only that ample time should be given, but that industrial interests should be duly considered, and that no prosecution should be instituted except by the public sanitary authority with the sanction of the Local Government Board. It was proposed also to constitute a Conservancy Board, which would take in hand the function of carrying out the necessary works, and that the sanitary authorities might be permitted to pass bye-laws and regulations, and give facilities for the use of their sewers. The prosecutions under the Bill were, he might add, to be carried on before the County Court Judges. Other points of importance would remain which might be dealt with in future measures, but he hoped the present Bill, as an initiative measure, would in future secure our rivers from pollution.

—— We learn from the *Daily News*, with reference to the recently planted VINEYARD AT CASTLE COCH, near Cardiff, that the young canes grown this year from the short stalks left above the surface at the autumn pruning have now an average height of 2 feet, and are trained to a stout stick placed close beside each. With scarcely any exceptions these canes are all strong and healthy, and the writer has little doubt that in their fourth year what fruit is permitted to grow until the vintage will then be good, and according to the weather prevailing during the summer and autumn, be also ripe and fine. The remainder of the field and the whole of the adjoining one are equally well adapted for growing Grapes, and will, he trusts, be devoted to that object.

—— At a recent meeting of the Academy of Natural Sciences of Philadelphia Mr. MEEHAN showed, not exactly as natural hybrids, but yet as hybrids without intention by man, some Pears raised by Mr. PETER KIEFER, of Philadelphia. For near twenty-five years Mr. KIEFER had grown the Pyrus sinensis, or Chinese Sand Pear, and for some years past had been fruiting seedlings from the original tree, and these have fruit uniformly the same as its parent, and as they seem to do in other parts of the world. Mr. MEEHAN exhibited a fruit, and compared it with a figure given in the *Gardeners' Chronicle* for January 23, 1875, p. 106, the two as similar as if the specimen had been used as copy for the sketch. Some years ago a Flemish Beauty Pear, a well-known variety of our common garden fruit, had flowered in close proximity, and since then Pears mixed in character had been raised from this, supposed to be hybrid seeds. The specimens exhibited by Mr. MEEHAN were much larger than the Sand Pear, the female parent, and as large as the average Flemish Beauty of American markets; the red cheeks, and fine lemon colour, being rather more beautiful than the average of Flemish Beauty, though this kind is popular as a particularly handsome fruit.

—— In a recent communication to the Academy of Natural Sciences of Philadelphia, Mr. MEEHAN concludes that QUERCUS HETEROPHYLLA, which had been supposed to be a hybrid, is simply an outpost in the camp of Quercus aquatica. In the same communication Mr. MEEHAN refers to a supposed hybrid between Juglans cathartica and Juglans nigra, the fruit exhibited having intermediate characters between the species named.

—— The results of the Conference on the HEALTH AND SEWAGE OF TOWNS, lately held under the auspices of the Society of Arts, are thus given in the *Journal* of the Society:—

1. "In certain localities, where land at a reasonable price can be procured, with favourable natural gradients, with soil of a suitable quality, and in sufficient quantity, a sewage farm, if properly conducted, is apparently the best method of disposing of water-carried sewage. It is essential, however, to bear in mind that a profit should not be looked for by the locality establishing the sewage farm, and only a moderate one by the farmer.

2. "With regard to the various processes based upon

subsidence, precipitation, or filtration, it is evident that by some of them a sufficiently purified effluent can be produced for discharge, without injurious result, into watercourses and rivers of sufficient magnitude for its considerable dilution; and that for many towns, where land is not readily obtained at a moderate price, those particular processes afford the most suitable means of disposing of water-carried sewage. It appears, further, that the sludge in a manurial point of view is of low and uncertain commercial value; that the cost of its conversion into a valuable manure will preclude the attainment of any adequate return on the outlay and working expenses connected therewith; and that means must therefore be used for getting rid of it without reference to possible profit.

3. "In towns where a water-carried system is employed, a rapid flow, thorough ventilation, a proper connection of the house drains and pipes with the sewers, and their arrangement and maintenance in an efficient condition, are absolutely essential as regards health; hitherto sufficient precautions have rarely been taken for efficiently ensuring all the foregoing conditions.

4. "With regard to the various dry systems, where collection at short intervals is properly carried out, the result appears to be satisfactory, but no really profitable application of any one of them appears as yet to have been accomplished.

5. "The old midden or privy system, in populous districts, should be discontinued, and prohibited by law.

6. "Sufficient information was not brought forward at the Conference to enable the committee to express an opinion in regard to any of the foreign systems.

7. "It was conclusively shown that no one system for disposing of sewage could be adopted for universal use; that different localities require different methods, to suit their special peculiarities, and also that, as a rule, no profit can be derived at present from sewage utilisation.

8. "For health's sake, without consideration of commercial profit, sewage and excreta must be got rid of at any cost."

The Executive Committee, whilst abstaining from submitting any extensive measures, have no hesitation in recommending that the prevention of dangerous effects from sewage gases should receive the immediate attention of the Legislature, and they submit the following resolutions as the basis of petitions to Parliament:—

1. "That the protection of public health from typhoid and other diseases demands that an amending Act of Parliament be passed, as soon as possible, to secure that all house drains connected with public sewers in the metropolis, and towns having an urban authority, should be placed under the inspection and control of local sanitary authorities, who shall be bound to see to the effective construction and due maintenance of all such house drains, pipes, and connections. Provisions having this object in view already exist in the Act constituting the Commissioners of Sewers in the City of London, in the Metropolis Local Management Act, 1855, and in the Public Health Act, 1875, but practically they seem scarcely sufficient for the purpose.

2. "That plans of such drains and connections be deposited in the charge of the respective local authorities, who shall be bound to exhibit them and supply copies of them to the public on payment of a moderate fee.

3. "That the owners of houses be compelled by law to send to the respective local authorities, within a specified time after the passing of the Act, plans of all house drains on an appointed scale."—Signed by the Right Hon. James Stansfeld, M.P., Chairman of the Conference; and by the following members of the Executive Committee:—Lord Alfred S. Churchill, Chairman of the Council, F. A. Abel, F.R.S., President of the Chemical Society; Sir Henry Cole, K.C.B.; Capt. Douglas Galton, R.E., C.B., F.R.S.; Lieut.-Colonel E. F. Du Cane, R.E., C.B., Surveyor-General of Prisons.

—— The last number of the *Planters' Gazette* says that the valuable timber known as Jarrah Wood, a product of Western Australia, and of a species of Eucalyptus, is growing well in the neighbouring colonies as well as in New Zealand. The wood has a great reputation for durability in any exposed situation, and the Western Australian Timber Company have recently received an order for as many as 100,000 railway sleepers. Large supplies for New Zealand are also being arranged for.

Fig. 147.—Ancient Firs (Pinus sylvestris) at Rannoch. (see p. 821.)

—— In reference to the horticultural department of the Philadelphia Exhibition, the *New Brunswick Fredonian* states that "One of the most interesting exhibits on the Centennial grounds is the display of Rhododendrons, by Mr. Anthony Waterer, of Knap Hill Nursery, near Woking, Surrey, England. A large building has been erected especially for this one display, in which there are over 1500 plants all in full bloom. There are here some 200 or 300 varieties of the Rhododendron, presenting nearly all the colours, beautifully variegated and tinted, and various shapes and sizes. The Rhododendron is a

native of the mountainous regions of this country, and in its natural state is a very beautiful flower. Mr. WATERER has expended a great deal of money in the cultivation of this flower, vastly improved it, bringing out new varieties and colours, and making it really one of the handsomest flowers known. His exhibition is the finest ever seen in the world, and the lovers of the beautiful who fail to see this exhibit will miss one the prettiest shows that can be imagined. It will probably remain in bloom some two or three weeks, and every one who can should go and see it. It is worth going 500 miles to see at any time. This exhibition is near Horticultural Hall. Mr. WATERER has also on exhibition in other parts of the grounds many other beautiful flowers and plants."

—— A recent report on THE PRINCIPALITIES OF MOLDAVIA AND WALLACHIA refers to the national industries as being almost too insignificant to be worth noticing. They consist of a candle manufactory at Galatz, where most indifferent candles are made; of petroleum and Colza oil manufactories, which are for the most part closed; of some distilleries, where strong rough spirit is manufactured; and of proposed paper and sugar manufactories, as yet uncreated. The native brewed beer is described as being good; the preparation of wine is capable of great improvement and development, and the cultivation of Beetroot and the manufacture of sugar might, as an industry associated with agriculture, prosper in the country. Overtures have been made to several proprietors by foreign companies to establish machinery and plant for the manufacture of sugar, if they (the proprietors) will undertake to cultivate a certain amount of Beetroot annually; but they hesitate to enter into an undertaking of such magnitude.

—— *Apropos* of PELOTAS BERRIES and their identity with a well-known British product, namely Acorns, to which we have referred in previous numbers of the *Gardeners' Chronicle*, an illustration of their extensive application for mixing with, or as a substitute for coffee, has recently come to the knowledge of the authorities of the Inland Revenue. Whether the original Pelotas Coffee Company was a failure we are unable to tell, but under the name of "Coffee Surrogate" an enterprising firm at the East End of London has been manufacturing in large quantities a substance resembling in outward appearance ground coffee. This Coffee Surrogate seems to be a composition of roasted and ground Acorns and Chicory, and smells strongly of the latter. It is neatly done up in quarter, half, and 1 lb. tinfoil packages, with trade mark representing a Coffee tree encircled by the word "Surrogatum," the name of the firm, and the intimation that "no packet is genuine unless it bears the label and trade mark." On one side the label tells us that "The beverage is prepared exactly like coffee, and is to be mixed with it in equal proportions, when the flavour is considerably heightened, or it may also be drank alone, when it constitutes a most agreeable beverage." On another side is the following recommendation:—"This speciality, containing a large amount of the coffeine properties, is not only cheaper than chicory, but universally acknowledged to be vastly superior in point of flavour, purity, and nutritiousness. (See analyses, opinions of the press, and medical certificates.)" We have never seen either of these recommendations, however, and probably they exist only in the minds of the inventors of the substance. It is sufficient to know that about two tons of this precious commodity have recently been seized by the Excise officials.

—— The portrait of the late Mr. STANDISH, to which we lately alluded, has been made over to the trustees of the Lindley Library by the committee, and will be, like the Lindley Library and the Rivers' portrait, deposited in the rooms of the Royal Horticultural Society.

—— With reference to the LEAFING of the OAK and the ASH a correspondent of the *Leeds Mercury* says:—

"My annual reports from the four quarters of England are now before me, and I find that had the 'Merry Monarch' required shelter in the Royal Oak this 29th of May he would have found it. Generally the leafing has been good (particularly in Nottinghamshire) for the past three weeks, but the Ash, even in forward districts, is scarcely out of bud, and in some places not a vestige of life has shown itself. The Oak has a good three weeks' start, and this being my twenty-first annual report of the leafing of these two trees and the subsequent weather, I predict a very hot and dry summer for 1876. My prediction for 1874 was questioned in May of that year, but the close of the hot and dry summer, which resulted in an abundant and splendid quality harvest, reproved my questioner and ended in my favour."

—— If we are to give credit to the London correspondent of the *Hants Independent*, it is evident that clergymen have only to take to ROSE GROWING to find—not a bed of thorns, but one of down, and such an addition to their stipends as might almost make a Bishop's mouth water. The writer says: "There is one possible source of income which the clergy might cultivate with great advantage to themselves, at least such of them as live in the country and have good gardens—I mean Rose trees. One clergyman of my acquaintance, who has a living in a midland town not far from the hardware capital, has made as much as £240 in a single season from a single Rose tree. This is better than bee-keeping, but there is no reason why a cleric should not go in for both Roses and honey." Can this famous Rose tree be the old Cloth of Gold, that it produces real coin in such abundance, or is it a wondrous Maréchal Niel, producing 4800 blooms at a shilling each? At any rate we should like to know this Rose tree, and if not breaking the Tenth Commandment, could wish to own just such another El Dorado.

—— The *Builder's* representative at Philadelphia writes:—

"Æsthetics will have a hard struggle against the 'dollar standard,' the only one that is of universal application. This occurred in WATERER'S Rhododendron tent:—'Well, I guess these are "elegant."' Where did they come from?' The attendant replied, 'From England.' Questioner—with much disappointment that they were not American, but with as much conceit as if the whole three millions of square miles of territory belonged to him—'Why don't they grow in "our country"?' 'They do grow wild, and in this neighbourhood.' 'Then why don't "we" show them as fine as these?' 'Because you have no gardens.' Here a lady struggled to the front, and said, 'Will you tell me which are the finest?' 'That depends upon your taste.' 'But, I mean which are the best?' The attendant here saw she meant 'dollar standard,' and handed her a catalogue, the prices marked on which might aid her in the formation of her opinion."

—— In a recent number of the *Comptes Rendus* M. CLOS states that the comparison of a large number of flowers has convinced him that the FILAMENT of the STAMEN, far from being the representative or homologue of the leaf-stalk, represents ordinarily in the case of polypetalous Dicotyledons, and in the Monocotyledons with many segments to their flower, the MIDRIB or central portion of the PETAL. This seems very much a question of words, for the midrib is the direct continuation of the leaf-stalk, or of the claw of the petal, and has a similar structure.

—— While we are fancying ourselves hot, it is well to note the TEMPERATURE our MADRAS friends are subjected to. On the 15th ult., according to the report of the Government Astronomer, the maximum in the shade was 109°.5, the minimum in the shade 83°.1—the maximum solar heat in vacuo being 148°.3.

—— The following, from the *Proceedings* of the Agri-Horticultural Society of India, is described as an effectual mode of PRESERVING SEEDS. The writer says:—

"Hitherto I have found great difficulty in preserving the seeds of China Asters and Heart's-ease—in fact, I never could get them to germinate until I hit upon the plan of preserving them in dry earth. This refers to home-grown seed. Formerly I used to put the seeds by in bottles, year after year, with great care, but not a single seed came to anything. In the Benares public gardens they are also unsuccessful with Asters, and the only place where they can manage to raise a few plants is in the Maharajah's garden at Benares. How they manage to preserve their seeds I am unable to say. My present plan is, directly the seeds are ripe, to dry them thoroughly in the sun for two or three days; at the same time some earth from the garden is reduced to a fine powder, and exposed to the sun; the seeds, and the earth whilst still hot, are mixed in about equal proportions and put into dry bottles, when the bottles are at once tightly corked. I have made two sowings of the Asters, and they have come up splendidly; some French Aster seed (acclimatised), which were subjected to the same treatment, have also germinated in a most satisfactory manner."

From the success which has attended this experiment the writer believes that all seeds might be packed in dry earth with advantage. It is right to add that this plan has already been adopted with partial success.

—— The recent flower show at the Westminster Aquarium brought out a greater number of PALMS, in proportion, than we are accustomed to see on such occasions in this country. Palms are so elegant and, as it were, so aristocratic, that we can but look upon any indication of growing taste in this direction as a step in the right course. Size need not debar the cultivator, for some of the most elegant are relatively small plants. The nomenclature of these plants in gardens is in a very unsatisfactory state, but we hardly see how it is to be improved with the material at our disposal.

—— A visit to the HEATH HOUSE AT KEW just now will induce many to regret that these bright-flowered plants should be out of fashion. The plants at Kew are not large, but they are very varied and now in full bloom

—— We are informed, on the authority of General MUNRO, that the hardy Bamboo which has flowered in so many places this year is not Arundinaria falcata but Thamnocalamus Falconeri. In most cases of this kind the plant dies down after flowering, but in the present instance fresh breaks are produced from the old canes. We do not know if this is universal.

—— A very elegant greenhouse plant has lately been in bloom in the Kew temperate-house in the form of BOSSIÆA LINOPHYLLA. It is a shrub, with graceful slender pendent branches and linear leaves; just now it is covered with myriads of small orange-coloured, pea-shaped blossoms, with a darker centre. It would make a desirable exhibition plant, but we never see it so treated now. This leads us to suggest that managers of flower shows in offering prizes for stove or greenhouse plants might introduce some classes wherein variety should be an element encouraged; as it is, in the ordinary twelve greenhouse plants we know we shall see year after year a great bush of Erica Cavendishii, another of Dracophyllum gracile, another of Darwinia tulipifera, and so on. We do not disparage these old favourites when we beg for the reintroduction of some of those grand plants figured in the early volumes of the *Botanical Magazine*, *Botanical Register*, *Paxton's Magazine*, and similar works.

—— The native country of the HORSE CHESTNUT (Æsculus Hippocastanum) has long been an enigma to botanists. The enigma has, however, been solved by Professor ORPHANIDES, of Athens, who, according to a note in the French translation of GRISEBACH'S *Végétation du Globe*, made by M. DE TCHIHATCHEF, has discovered the tree in a wild state in the mainland of Greece, thus confirming an opinion long ago expressed by DECAISNE.

—— The HOWARD PRIZE ESSAY for 1875, entitled *The Peasant's Home*, 1760—1875, was written by Mr. EDWARD SMITH (Stanford). In it is contained a general sketch of the efforts made during the last century to improve the condition of the British peasant's home, and the necessary steps to be taken to march more rapidly and effectually in the same direction. Incidentally the author refers to various cottages and villages erected by landlords and men of property, who have had a proper feeling for the needs of their poorer brethren, and put that feeling into practical shape. Among other instances that of cottages at Culford, built by Mr. BENYON DE BEAUVOIR, are alluded to in terms of praise, as well as those on Lord EVERSLEY'S estate at Heckfield, and various others, showing that a proper feeling is abroad, and that improvement, if gradual, is at least steady. In seeking an explanation of the great disparity that exists between the condition of the labourers in the west and south-west of England as compared with those in the east, and specially with those in the north, the writer finds it

bound up in great measure with garden allotments and drink; and he considers all attempts at improving the condition of the labourer will be futile, without furnishing him with an allotment or other garden; and secondly, "teaching him the proper position of beer in relation to his animal economy . . . The possession or non-possession of a garden frequently makes all the difference between a peasant, whose mind oscillates between dulness and low joys, and another whose mind is improved, whose intelligence is sharpened, whose soul is elevated, and whose heart can learn the first principles of contentment."

—— If ignorance prevail as to the AGRICULTURAL HOLDINGS ACT, 1875, it will not be for want of expositors. We have already mentioned more than one work on the subject, and we now have to announce the issue of a reprint from the Royal Agricultural Society's *Journal* of a paper on the subject by Mr. FREDERICK CLIFFORD, Barrister-at-Law (Clowes & Sons), comprising first of all an exposition of the Act, and then the Act itself.

—— Judging from various reports on the amazing rapidity with which many INTRODUCED PLANTS spread in our AUSTRALASIAN COLONIES, the aspect of the vegetation, in some districts at least, seems likely to change more in 100 years than that of the British Isles has within historical times. It is true that we are not now able to distinguish with certainty between introduced and indigenous species in Britain; but as the majority of them belong to the same type of vegetation the changes wrought by introduced species are not so striking. We speak only of those species which spread and reproduce themselves freely, to the detriment of the native plants, leaving cultivation out of the question. Now, the plants introduced from the northern into the southern hemisphere form a marked contrast with the native flora. In the seventh volume of the *Transactions of the New Zealand Institute* Mr. G. THOMSON gives a list of 106 species (which he says by no means exhausts the number) observed by him in the neighbourhood of Otago and Dunedin, interspersed with remarks on their frequency, &c. Some, such as the Clovers, are valuable pasture plants, and their spread can only be regarded with satisfaction, especially when we remember that there is not a single Leguminous plant indigenous to New Zealand of any value as a fodder plant. It appears that Trifolium medium and repens are increasing very fast, and in fact the latter is found everywhere from sea-level up to 1500 feet. The common Furze and Broom, on the other hand, have become a pest in some pastures. Carduus lanceolatus, Sonchus oleraceus, Rumex spp., &c., are already very troublesome weeds, quickly overrunning large tracts of land. The list also includes a number of grasses purposely introduced, and it is satisfactory to note that they flourish and spread. In connection with the dispersion of introduced plants in New Zealand, it has been observed that floods are very active agents.

—— Mr. F. PARKMAN, the raiser of the fine LILIUM PARKMANNI, is stated in American papers to have raised numerous seedling Lilies, using the pollen of L. auratum. In all cases, except the one above mentioned, the seedlings were like the female parent, and no cross was effected.

—— Dr. FORBES WATSON has recently published in pamphlet form his plea for the establishment of a series of MUSEUMS devoted respectively to INDIA and the several COLONIES. The site advocated is on the Thames Embankment, between it and Whitehall Yard, close to Whitehall Place and the new Northumberland Avenue. A map of the globe so arranged as to show at a glance the extent of our dependencies in Europe, Asia, Africa, America, and Australia, is appropriately given, as it shows at a glance the immense extent of the British Empire, and is very suggestive of the vast importance of the commercial products it is the object of the proposed museums to develope and extend. We sincerely hope the project may be realised.

—— According to a statement in the *Revue Horticole*, two plants of SCIADOPITYS VERTICILLATA, each about 3 feet in height, in the nurseries of Messrs. THIBAUT & KETELEER, at Sceaux, have produced cones. We have not heard of the production of cones in this country

CULTIVATION AND TRAINING OF FRUIT TREES.

By W. PEARD, M.D., LL.B.

STONE FRUIT. — Special instruction necessarily precedes practice in almost every science and in all professions. Nor can the gardener hope to obtain proficiency in his art without it. He should at least acquire the elements of botany, and possess a tolerably accurate knowledge of the nature of the soil, temperature, method of culture, amount of rainfall, and the like, in the countries to which many of the trees under his care are native. It is true the majority of them have long been acclimatised in these islands, but it is equally true that many of their inherent requirements remain unaltered. The object, therefore, of the special knowledge alluded to is to recognise and supply these requirements as far as possible. Few of the more choice trees in our gardens can dispense with this fostering care. They may live, in spite of neglect, carelessness, or ignorance, but they will not thrive. The skilful physician knows the strong and weak points in the constitutions of his patients. He knows something of their antecedents, something of their habits, wants, and wishes. The gardener is in some sort a doctor of trees, and should make himself master of the history and wants, the strength and the weakness of the members of the vegetable world placed under his care.

A correct estimate of the general principles connected with vegetable life is not less important than what has been termed "special knowledge." The perfection of plant life depends, for example, on suitable sites, and a due amount of food, light, and air.

The ungenial caprice of our climate, which has given rise to the well-known phrase "wall fruit," brings us to the subject of the cultivation of borders. This is a point of no little importance if we desire that our trees should produce good and regular crops. They must "make wood," but not in excess. They must possess constitutional force, and not exhibit spasmodic or exhaustive vitality, and, to insure these results, nutrition should as a rule be stimulating and abundant. The management, therefore, of the borders in which the trees grow is obviously of no small importance.

Working the soil renders it light and porous, and fits it to receive the genial influences of sun and rain, as well as to absorb the different elements of which the atmosphere is composed. The depth to which the digging or, more properly, forking, should be carried will be determined by the species of trees about which the gardener is employed, for, as M. Du Breuil tells us, "trees grafted on Plum, Quince, or Paradise stocks always develope themselves more superficially than others."

It is a common practice to grow fruit and vegetables on the same border, but a more wasteful method can scarcely be adopted, for the constant diggings to which the ground is subjected necessarily exposes the roots of the trees to mutilation, while the plants absorb the larger share of the nutritive elements of the soil. The consequence of this ruinous economy of space is frequently seen in one of the following conditions: A Peach or Nectarine blossoms freely and sets well; a slight frost, insufficient to kill vigorous and well nourished germs, destroys the crop. Again: a tree may have passed safely through the critical nights of May—it will be observed, however, that the fruit grows slowly, or does not grow at all. Permanence without progression is as impossible to wall-fruit as it is to nations. A sickly hue steals over it, canker spots appear and grow, the footstalks darken in colour, and one by one the young crop dies of starvation. A more humiliating result can scarcely be studied by the grower. It might be thought that one such lesson would have lasted him for life. But the connection between cause and effect is not always traced. It is due to blight, to ungenial weather, to any cause but the true one; and so borders are cropped, and fruit, worth all the salading, Strawberries, or the like, grown on them ten times over, is lost from year to year. It is indisputable that the spring frosts are sadly fatal to the fruit of unprotected wall-trees; but it is equally certain that the force of any agency hostile to animal or vegetable life is destructive in the ratio of the weakness of the thing attacked. As we have implied, the cold which kills fruit weakened by starvation would have passed comparatively harmlessly over a well-nourished crop.

Having spoken of the effects of starvation, we naturally turn to the consequences of over-feeding.

Gardeners, as a matter of course, desire that their young trees when placed in the position they are intended to occupy should cover the walls as soon as possible. It is, however, malpractice to force them by excess of manure, inasmuch as under such stimulant treatment they mature little or no fruit until they have attained their proposed dimensions. If placed in a favourable aspect, and in a soil of average quality, but without an excess of manure, their growth will be less luxuriant, but they will be productive in the ratio of the bearing wood. Even when Peach and Nectarine trees have reached maturity, the question of feeding them is a delicate one, since over-stimulation, while liable to injure the flavour of the fruit, tends also to induce "gum disease." The best manures are crushed bones, woollen rags, waste wool, hair, or feathers. These substances decompose so slowly that it will be sufficient to renew them at intervals of seven or eight years.

There are other general principles connected with the management of borders in which fruit trees are placed that deserve notice. Want of space, however, compels us to allude to them very briefly. The constituents of the atmosphere, for example, supply more or less directly a large part of the food of plants; and, in order that these may be fully absorbed by the earth, it is necessary, as has been already implied, that it should be kept light and open. To this end frequent waterings are necessary during the heat of summer, more especially in light soils. To prevent the surface from caking, litter, grass cut from lawns, the leaves of garden vegetables, such as Rhubarb, Lettuces, and the like, should be spread over it. It may be added that forking to the depth of 2 inches is also useful.

Having touched on the advantages to be derived by cultivators from a special knowledge of their subject, and having indirectly attempted to show that general principles have a practical bearing, we will assume that the trees have been placed in their allotted stations, and that they have grown and thriven. We pass lightly over the time that intervenes between vegetable infancy and adolescence, and have now to consider these tests of the successful management of garden trees—pruning and training. We propose to apply these arts to the Peach and Nectarine, to the Apricot, Cherry, and Plum.

M. Du Breuil, Professor of Arboriculture in the Conservatoire Impérial, when touching on these parts of his subject, tells us that training and pruning give the following results. They impart to trees the form suited to the place they occupy, and cause them to develope wood regularly and systematically, promoting fruit-spurs throughout the whole extent of the principal branches. Besides these advantages, the arts of which we are speaking render the fructification more equal, for by cutting away the superabundant buds and branches two useful ends are promoted, namely, the formation of a due supply of fruit-buds for the ensuing season, and the economisation of sap.

Let us attempt a pen-and-ink sketch of two fruit trees, one of which shall have been "carefully brought up," the other being destitute of educational advantages. In the former, bearing branches commence at the base of the stem, and are continued at the shortest intervals, compatible with the size and excellence of the fruit, to the extremities. There is no waste of space; no profitless wood. Our model pupil may perhaps have lost some artistic graces, but has become a useful member of the society of trees, filling its place in the world, and doing the maximum of work with the minimum of display. The latter may be likened to a gay, dashing spendthrift. The life blood —only another name for the sap—flows freely through all its veins. Too much occupied in stretching out its arms to catch the pleasant air and sunshine, it neglects the business of life. The lower branches become impoverished, cease to flourish, and gradually die off. The evil grows, till at length there is a naked stem and a wild, undisciplined head, capable, indeed, of bearing fruit under favourable conditions, but not to be relied on. Nor is this all; for our prodigal is by no means a good neighbour, hindering, by his unrestrained licence, the honest returns of the trees which he deprives in a greater or less degree of light and warmth. But in order to correct these natural instincts, the thought and skill of the gardener are taxed to the uttermost. Let us suppose, for instance, that the circulation of sap in a wall tree has become irregular, that one part has grown weak, that branches

have withered, that symmetry and economy of space have been lost; in short, that beauty and efficiency are alike gone. What is to be done to correct this tendency to deformity and to ensure uniformity? If we take only a very cursory glance at the steps necessary to effect its restoration we shall be able, in some measure, to estimate the principles implied in the term "training."

The general object proposed is to retard the flow of sap to the strong branches and to direct it to the weak ones. To promote this end the former are severely pruned, while the weaker ones are allowed to grow freely. The sap is drawn by the leaves. By removing the greater number of wood-buds from the vigorous shoots, they are deprived of conductors, the flow diminishes, and power is reduced. Again: by allowing the wood-making buds to remain on the weak parts they will be covered with leaves; abundant vegetation follows, and growth will be the result. This, however, is but a part of the process, for the herbaceous extremities of the strong parts must be pinched off, while only such growths must be removed from the weaker portions of the tree as are useless from the position they occupy. The growths on the strong side should be nailed as nearly as possible close to the wall or trellis. By this means the circulation is retarded where necessary, and is promoted where it is most needful. Then as to the treatment of the fruit. This should be allowed to stand on the strong branches, and should be removed from the weak ones.

The *rationale* of the method is that the fruit possesses the property of drawing to itself the sap from the roots, and of absorbing it largely in its own growth. By this means all which flows to the strong side will be absorbed, and this absorption will practically develope the weaker parts. The principle of restoring the balance of power may be further promoted by painting the young wood on the weak side with a solution of sulphate of iron. "This solution, in the proportion of 24 grains to a pint of water," we are told, "if applied after sunset, is taken up by the leaves, and powerfully stimulates their action in drawing sap from the roots." The scientific gardener has other plans of treatment for the restoration of trees whose circulation is abnormal. Sufficient, however, has been said to show the extent of his resources in this special case, and the skill necessary for their proper application.

Roots are not only the anchors of trees, they perform also the functions of mouths and stomachs, and are as capable of being pruned or trained as the branches. The longer and smoother roots are the supporters; the minute bodies at the extremities of the hair-like rootlets are the mouths. The digestive organs represent the stomach, and prepare the fluid matter received till it has become food suited to promote the growth and vigour of the body. It may therefore be readily believed that the management of the roots exerts a large influence for good or evil on fruit trees. For example, when a tree is planted the roots should be disposed as far as possible in equidistant lines, and should be placed so superficially as to be within the reach of atmospheric influences. The method of root-pruning must be noticed more at large.

There are two distinct conditions which render this operation necessary. A tree may be unfruitful from the excess, or from the want of, a due supply of blood. Life, whether animal or vegetable, obeys a law essentially uniform. Higher organisms suffer from hyperæmia or anæmia; members of the vegetable kingdom become barren from having too much or too little sap; in other words, the roots are out of order.

Let us glance at the remedies calculated to remove the former morbid condition. "In the month of February," says M. Du Breuil, "make an annular incision with the hand-saw near the base of the stem, rather less than a quarter of an inch in width, and sufficiently deep to penetrate the exterior layer of the wood. The sap ascends from the roots to the leaves, passing through the sap vessels imbedded in the exterior layer of wood. The incision has the effect of retarding the ascent of the sap, the branches acquire less vigour, and the tree forms fruit." To practitioners less skilful than the author of the work from which we have quoted, the foregoing method may seem somewhat heroic. To our thinking a wire ligature would answer as well as the hand-saw; with it the necessary compression could be made, and a dangerous operation avoided. But there are other means of attaining the end in view. If the soil is removed from the foot of the tree in the early spring, so as to expose the principal roots nearly throughout their entire extent, and, further, if they are allowed to remain in this position during the summer, the action of light and air retards their absorbing power, and thus, by restraining the supply of sap, the fruit-bearing faculty is increased. Another method of producing the same result is to uncover the foot of the tree in the spring, cut away part of the roots, and replace the earth. This operation, which is more energetic than the preceding, must be resorted to with caution. If trees, whose tendency is to make too much wood, are transplanted soon after the fall of their leaves, the removal has the effect of weakening them. In the following year fruit-buds will be made at the expense of branches and leaves. In short, all methods within reasonable limits, which tend to diminish vigour, tend also to augment the crop. The *rationale* of all this is very simple. The branches monopolise something more than their full share of sap. If the shoots are strong and numerous, it follows that they absorb an undue proportion of the nutriment. It is obvious, therefore, that the fruit is more or less starved. This explains why, other things being equal, vigorous trees are inferior bearers to weak ones.

FIG. 148.—VIEW IN A JAPANESE GARDEN. (SEE P. 829.)

Peaches and Nectarines require deep and open soils for their perfect development. The ground should contain a certain proportion of calcareous matter, and be free from superabundant moisture. The best aspects are south or south-west. It is less generally known that several varieties of these delicious fruits succeed well with an east frontage. The stocks on which the buds of these trees are grafted have much to do with their success. For outdoor planting in our trying climate the St. Julian and Pear Plums are the best for the more delicate kinds, and for pot-culture. For general purposes Mussel stocks are to be preferred. At the present time there are something more than fifty varieties of the Peach alone. It forms, however, no part of our design to enter into this subject. In speaking of the training of the trees in question we shall touch only on two methods, namely, the "Verrier palmette" and the simple oblique cordon. These forms are the most easily obtained, and can best be accommodated to local requirements.

The "Verrier palmette" is composed of a trunk and a series of equidistant branches, trained at first horizon-

tally and then upwards in a vertical direction, each branch forming two sides of a figure, which might be called a square if the corners were not rounded off. This form M. Du Breuil considers preferable to the palmette with oblique branches. It may not be out of place to observe that at the time of planting each tree should be allowed a wall surface of about 20 square yards for its subsequent growth. (*Extracted from the Journal of the Bath and West of England Society.*)

(*To be continued.*)

Home Correspondence.

Bearing-Reins on Mowing Machine Horses.—Mr. Rust deserves the thanks of all humane people for directing attention to this matter. Nothing could be more improvident of force, as well as more cruel, than to rein up a horse's head in a mowing machine. Bearing-reins on carriage horses are kindness itself compared to the same instruments of barbarous cruelty on a horse in a mowing machine. A carriage runs on smooth roads, and generally long distances without stopping; a horse, therefore, once started may keep its head in rein without much suffering, unless at a steep hill; but in a mowing machine progression is made through a series of turns and stoppages, each of which involves a new point of departure. At each fresh start the horse naturally throws its head and fore-quarters forward, to overcome by the momentum of its weight the dead weight of the machine at rest or in slow motion. In performing this natural and necessary movement its mouth is almost torn open by the jerks of the bearing-rein on the bit, and this happens thousands of times in the course of the day, to the excruciating suffering of the best worker in the garden, and the hindering also of good work, for all cruelty is wasteful and improvident. Many of those jerks and sudden fits and starts that throw mowing machines out of working gear have their origin in the sufferings of the horse, and the ruin of his temper from such causes. We have a great deal of mowing here. The horse goes five days and a-half a week as a rule from February to December, for we find the mowing machine in winter the cheapest sweeper and lawn cleaner until the frost stops it. The horse thrives on it. It has its head, and at every brief stoppage it is allowed to pick a bit of grass for itself. No one who has not thus made a pleasure of a toil for a horse of very hard work can imagine the delight they express in face and eye as they pick up the scant mouthfuls, sweet, however, in the ratio of its shortness. Gardeners generally are humane men, and a word to them should be enough. Therefore, let every horse, pony, donkey in mowing machines have their heads at once, and also let them pick a bit of sweet grass by the way to lighten the monotony of their dreary toil, which must affect them somewhat as the treadmill does bipeds. I notice, notwithstanding our abolition of bearing-reins, a bite by the way, and many a juicy Apple as I pass by "Willie" mowing, that he is nevertheless delighted to get into the light cart and will bound along after a day's mowing as if he was fresh out of stable on a Monday morning. *D. T. Fish.*

Japanese Gardening.—The taste for flowers and gardens is universal in Japan. The garden given in the accompanying illustration (fig. 148) is somewhat historical, which led to its being admirably photographed by Mr. Beato. It appears that the owner, though one of the labouring class, had devoted his spare time to his garden with such success that people went to see it, and at length the Tycoon himself paid it a visit, when he was so pleased with what he saw that he raised the happy owner to the honour of the two-sworded class, as an encouragement to all "good gardeners" for ever. "*Over the Sea and Far Away*," *by T. W. Hinchliff*, (p. 351). Longmans.

Notes on Plant Names.—In a book I have I see that it is said the name of Sambucus is given to the Elder tree because "Sambuca," a musical instrument thought by the ancients to be the "Sackbut," used to be constructed from its wood. "Boor tree" is a common name for the Elder in some parts of the North, and there are a great many superstitions connected with it. A singular-looking fungus occasionally found on the trunk of the Elder, called "Judas' ear," has several wonderful properties attributed to it. If "Danewort" be rare in Scotland, a plant called the dwarf Elder, which I always thought was the "Danewort," is a very flourishing weed in this neighbourhood. Many local plant names are very amusing, and it is interesting to trace their origin to some real or fancied virtue possessed by the plants. The "Angelica" is an example of this, being taken from *Angelicus* on account of its efficacy at the time of the Plague, and even now country people make what they call a spirit of "Angelica;" but to be well up in all its good qualities one should read Gerard's *Herball*, where it says that it "cureth the bitings of mad dogs and all other venomous beasts." Many of our wild plants are also called after different "saints." "Herb Bennet" comes from "St. Benedict," "Herb Robert" from "St. Robert," but "Herb Paris" is said to be derived from "Par" (equal), in allusion to the regularity of its parts, its four leaves forming a sort of cross, hence it is called in some places "Herb True-love" and "True Lover's Knot." The Dandelion is often called "Monk's-head," *Caput Monachi*, from the bald appearance presented by the receptacle after flowering. The English name of "Foxglove" is said to have originated in "Fuchs'-glove," Fuchs being the first to apply the term "Digitalis" to this plant, digitate signifying the finger of a glove. But I must not trespass on your space with this plant gossip. *H. E. Watney.*

Malaxis paludosa, Sw.—This tiny green gem flowered in the Hamburgh Botanic Garden as a most unexpected guest in April, growing amidst sphagnum in company with a Phalænopsis. If that moss were not cleaned so well, we should, no doubt, grow a most complete flora of our bogs in our stoves. As a rule, only Droseras' are spared, as was also recorded by Mr. W. Swan, at p. 791 of your columns. Malaxis is so very scarce around Hamburgh that its appearance in the stove caused great surprise. We will try to keep it under cool treatment. *H. G. Rchb. f.*

Snake Millepedes in Strawberries.—While eating some Strawberries procured from Devonshire (as the fruiterer informed me), one of my children complained of her tongue having been pricked as if by a needle, and on searching for the needle, one of the accompanying myriapods was found. On looking over the remainder of the Strawberries, several more were found in and upon fully ripe fruits. I have put them into a bottle, and send them herewith for identification. They are elegant little creatures, from half an inch to an inch long, with jointed antennæ, the joints thickening towards the last but one, and they have two pairs of legs to each segment. They are creamy white, and every segment, excepting two or three at each end, has a pale crimson spot on each side of it. I suspect it will prove to be a Geophilus, or "something after that way." Can it be possible that this little head can have jaws strong enough to pinch a human tongue? or did the pricking arise from an acrid acid, squeezed out of its crunched body? Perhaps one of the Editors will kindly bite one, and, having thus in one way "given tongue," will in another way "give tongue" by recording the result. Expectation waits. *W. T. T.* [The Snake Millipede mentioned in the preceding note is the Julus pulchellus, figured in *Gardeners' Chronicle*, 1841, p. 196. In the woodcut which is reproduced above, 1 is Julus terrestris; 2, J. pulchellus; 3, J. complanatus. *J. O. W.*]

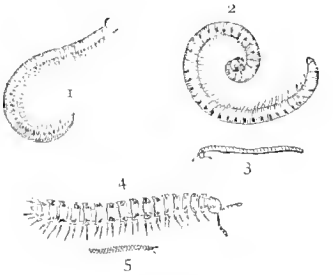

Fig. 149.—The Snake Millipede.

Cinerarias from Seed.—Any one who pays the smallest attention to the "signs of the times," or watches with minuteness the fickleness of fashion or custom, or whatever else we may like to term it, cannot fail to observe that there are "rocks ahead" with respect to the general cultivation of Cinerarias from seed. It will not require a very great stretch of memory in any one to remember the time when named varieties began to recede in the estimation of cultivators, on account of the difficulties experienced in growing named varieties as compared with those raised from seed. I am not prepared to deny but there was some ground for such an assertion, but I have come to certain conclusions, and there can be no harm in stating publicly what I think. I do not exactly understand how it is that we all seem to chime so together, or fall into one groove, as we do when a little upturn occurs in the fashions for the year; it seems as if there were a piece of magnet fixed at some given point, and that we are all drawn irresistibly to that point, there to receive a little tuition on the popular craze of the year; and he who refuses to receive his lesson must needs be expelled from the craft for all time, or at least until such time as a reformation takes place in his opinions favourable to the public weal. But I think it would be well to have a few watching birds in our camp, to notify to us the disappointments we are likely to meet with before or about the time those changes are brought about. It strikes me as very probable that ere long we shall have the raising of Cinerarias from seed denounced in no measured terms, simultaneously with such announcement the public will be informed of some gigantic collections, replete with all the most choice-named varieties, upon which no pains has been spared to retain only those varieties that have been proved superior to anything that can be expected from a packet of seed. Now, I do not say that there are such collections retained in obscurity with a view to coming events; but if there be, and they should turn up accidentally, they will prove both useful and profitable to the vendor. I have built a case on hypothesis; let us assume it to be a fact; what would be the harm in selecting a few of our own best varieties to propagate from? We can either save a little seed ourselves, or, what is a very good plan, although an old-fashioned one, cut down old plants, shake them out, plant in a cold frame behind a north wall in leaf-mould, and pay attention with moisture, and I will guarantee an ample stock of nice young plants to grow on for another season. I do not throw out these suggestions without a cause. I have had occasion to note the falling away in quality of Cinerarias from seed for some time past. I had excellent batches of plants last season, and congratulated myself on my success; but as flowering-time came round, I found out to my sorrow that I must needs be content with a crop of leaves from a large percentage of my plants. To obviate a recurrence of such a state of things, I have just made a little start towards having a small choice collection of my own. One may as well have flowers with the leaves. My case is not an isolated one; and the natural conclusion is, that there is not the same care bestowed on saving the seed as there used to be, hence the degeneracy in the flowering properties of the plants. *W. Hinds, Otters Pool, Liverpool.*

Poisonous Plants.—I am forcibly reminded of the justness of some remarks made by one of your correspondents the week before last (*à propos* of my carelessness when writing of the Speedwell), on the propriety of giving plants their full botanical names, by an incident which has this morning occurred. A lady informed me, speaking of salad herbs, that Celandines were used by the French, adding that she had just read an account in a well-known publication of a French woman's having gathered a basketful of Dandelions and Celandines, sufficient for a good family salad, and she was determined to try some. You know the lines—"A man convinced against his will," &c.; well, I fully expect to hear of a case of poisoning from Celandine in salad one of the next days. I have no doubt but that the plant alluded to in the paragraph she saw was the Ranunculus Ficaria, the young leaves of which, Linnæus said, were sometimes used as greens in Sweden, and which is called the lesser Celandine, though it is quite a different plant to the Chelidonium majus, common Celandine, which is now in full bloom and exceedingly poisonous. *H. E. Watney.*

Yucca californica.—As we see that the flowering in England of Yucca californica is mentioned with interest in your paper of June 17 (p. 794), it may interest you to know that in our nursery there is a nice plant of this Yucca going to flower; the stem is at present 1.45 metres high, the flowers are not yet expanded. We suppose this to be the first time this plant has flowered in Holland, if not on the Continent. *E. H. Krelage & Son, Haarlem.*

Wellingtonia gigantea variegata.—There is a beautifully variegated specimen of the above in the garden of Alderman Stewart, Bishopthorpe, near York; it is growing on the lawn, and forms a most conspicuous object, its variegation being more distinct than any I have seen before; the plant must be at least fifteen years old. On the opposite side of the flower garden was the green form of the Laurel tree in the same flourishing condition: the contrast of the two was a very good one. I was surprised to find such a specimen so equally variegated for the whole height of the tree, and the little green there was showed the variegation off to perfection. I send a piece, so that you may form an idea of the way in which the clusters of variegation grow, and also of the surpassing beauty of the specimen. Mr. Stewart is a great enthusiast among plants; he has a fine collection of Auriculas, Pelargoniums, and pot-Roses, fine specimens of each; Ranunculus in pots were full of bloom, and produced a pleasing effect. I noticed in some of the houses some fine Calceolarias, mostly specimens with splendid blooms. Many of these were at the York show, and were awarded 1st prizes; the Pelargoniums also received prizes. Mr. Stewart is a great lover of florists' flowers, and does a great deal

of good for horticulture; he has also been one of the most useful and energetic members of the York Gala Society, which is one of the best paying shows in England. *B. S. Williams.*

The Gooseberry Caterpillar.—If any of your numerous subscribers' Gooseberry bushes are infested with the caterpillar, they can get rid of them by a very simple remedy, which I have used here for the last five years, and it has never failed. As soon as the caterpillar makes its appearance place branches of the common Elder (Trammon they call it here) in the bush, and they will disappear in a few days. On Thursday, June 15, I observed it here, and I used this simple remedy, and now not one is to be seen. *W. D., Gr. to R. Penketh, Esq., Hampton Court, Isle of Man.*

The Potato Disease.—Dr. Alexander Hunter can hardly have been a reader of the *Gardeners' Chronicle* of late, or else he would not have placed before the Botanical Society of Edinburgh the long array of defunct arguments on the subject of the Potato disease, published at p. 786. A special product of the discussion to which the Potato disease has given rise has been the periodical revival of assertions, all of which have been time and time over proved to have no foundation in fact. The entire discussion for the past thirty years might not inaptly be likened to a game of nine-pins, at which some set the pins up and others continually floored them. Dr. Hunter excels as a setter-up of argumentative nine-pins, and we have seen them so often that it needs only the application of the ball of practical good sense to sweep the whole from off the board, where they will lie until some other unpractical and unread player will set them up again. There is a curious inconsistency in Dr. Hunter's first paragraph, in which he states that the Potato originally was of the size of Walnuts, but have been brought to their present greatly improved appearance and size by judicious culture—an assertion that admits of no disputation; but then he goes on to point out that now the Potato is deteriorating from three causes, all of which in combination mean culture of the most injudicious kind. In what respect has the recent cultivation of the Potato differed from that practised by our forefathers? There is not a grower that will not bear witness that far more care is now taken with the seed tubers, that over-manuring is avoided, that more space is given to the plants, and that much more consideration is generally applied than prevailed years ago. Dr. Hunter wants us to try the production of new kinds from seed over again. That remedy for the disease has been well tested for years past, and has not proved successful, indeed, raisers know this fact so well in raising seedlings that they have scarcely hoped disease-proof kinds could result. Good croppers of improved form and quality have been looked for, but beyond that experience has proved all to be hopeless. I must at once dispute his assertion that the Potato is deteriorating; it is all nonsense, and utterly without foundation. Equally so are many of the platitudes uttered with regard to other plants. If we want Potatos that are robust enough to produce haulm the height of a man and tubers as big as Melons, they can be had, but no one cares to grow such coarse types as these, and of the best kinds for general purposes it is possible to name fifty or more, all of which are full of vigour, of health, and of life, and offer all that cultivators can desire in the constitution of a good Potato. If some kinds that were known to our fathers are now non-existent, it is not that they have died out, but have been elbowed out of life by the introduction of improved sorts that have displaced them. Dr. Hunter's panacea is the old nine-pin "raised solely from the seed-apple, and thus acquire renewed vigour;" and he proceeds to make the oft-repeated statement that the absence of the seed-apple on the haulm is an indication of the want of vitality in the plant, but not content with this he makes the sweeping and foolish assertion "that if a liberal prize were offered for a few hundredweights of the Potato-apple they could not be had for love or money." Now, this is not only absurd but untrue, and displays most forcibly the ignorance of Dr. Hunter in dealing with this question. I have here said before, and repeat it, that the well-known Red Emperor is a most prolific bearer of seed-apples, and a single acre of this sort, if grown well, would alone produce the quantity of seed-apples he asks for. Yet it is notorious that the Red Emperor is of all Potatos the soonest affected by the disease, and also the worst. The defect of many good kinds is this production of seed-apples, and not to injure the crop of tubers it is well to pinch out the blossom to save the haulm from the consequent exhaustion. We have proved over and over that in regard to the attacks of the disease on various kinds, the production of seed-apples or not has nothing to do with it. Dr. Hunter, to back up his reckless argument, asserts that to the lack of raising from seed do we owe the loss of many of the best kinds of Apples, Pears, and other fruit trees; but this must be news to fruitists, as there is not a kind of these fruits worth preserving that cannot be had in quantity if required. The occasional death of an Apricot or Prince of Wales Plum is not to be accepted as evidence of deterioration, and probably arises more from unsuitability of stock than from any other cause. The idea that our fruit trees are affected with modern diseases is unfounded, the only exception is the Vine, but even this is not affected through absence of vigour, but in spite of it. And we have seen that both the oïdium and the Phylloxera are more destructive among the Vines grown in a suitable climate and under natural conditions, than with those grown here artificially and in the most unfavourable conditions. The assertion that the continued production of the plant from the root is unnatural would apply with equal force to many other tuberous-rooted plants and to all bulbous-rooted ones. The fact that Nature has made every Potato tuber a living, although perchance for the time a dormant plant, is conclusive evidence that it is adapted and intended to reproduce its kind. From Potato seed alone we should never get a crop of edible tubers, and it is not until they have been reproduced from the seed-tuber that a crop is obtainable. Naturally we come to the conclusion that the path pointed out by Nature is the best to follow, and in making the seed-tuber the chief crop producer we have taken the only step to make the existence of the Potato possible. With equal force it can be said that no kind has worn out. This has been said, for instance, of the old Forty-fold, but sometimes it is met with as good as ever it was—it has simply been put aside for newer kinds; and this is the case with all old and extinct sorts. I have at times met with a strain of the old Ashleaf that has been in the growers' hands for a generation, and yet has continued to bear as good crops as ever. If a sort is worth preserving it will be preserved in spite of prophecies as to deterioration and the disease. The proposition to import fresh tubers from South America is one of the worst imaginable. We want to get the Potato as far removed from its exotic form as possible, and our intelligent raisers of new kinds know quite as well as Dr. Hunter on what lines to proceed, and probably better. *A. D.*

Reversion in the Pelargonium.—The original cutting of the plant sent was the variegated one. Last summer the original plain form sprung from one bud, and is now the strongest branch of the plant although both are growing vigorously. I do not know if such cases are common, neither do I know the names of the Pelargoniums. *C. C. Babington.* [Such cases are not uncommon. We presume in this case the phenomenon is due to reversion to the original form. EDS.]

Daphne indica.—I was very pleased to read the excellent article in your paper on the above, written by my esteemed friend Mr. Baines. It is a real pleasure to see the champion plant grower fix his cultured gaze upon a plant of sterling worth, and looking through the cluster of new faces into the past and calling to mind the fact, realised over and over again by his own experience, that reliance can be fully placed on an old friend for desirable qualities. He does good service to keep the merited plants before the public, lest they might be forgotten or neglected. I wonder the Daphne indica is not in every garden. I regret it is not in every window. It is by no means tender, and it is sweeter than any other pot plant. It is not difficult to propagate. Some years ago I raised over fifty in the autumn—I believe every cutting grew. They were placed in a spent Melon-frame, and had precisely the same treatment as the cuttings of Tricolor and Bronze Pelargoniums. They had no heat beyond what they derived from early shutting up the sun-heat, and they grew most freely. According to my experience this is the correct way to raise them. Close by my house here may be seen in a cottage window a grand plant of the Daphne, raised by the cottager's daughter from a branch picked up on the road, and each spring this plant is covered with its deliciously fragrant flowers, admired by every one. I have a number of them planted here against the walls and trained like fruit trees and nailed when required; they are planted in ordinary garden soil, and have a mulching of rotten dung to protect the roots from frost and drought. Some of them are planted due north, others east, as those are the most exposed positions I could give them; and they have not only withstood the last very trying winter, but have supplied me with hundreds of bunches of flowers through the winter, and they are now thoroughly healthy and full of vigour, and will give me an ample crop of cuttings besides. Within 200 yards from where I write is a Daphne indica, a large bush, from which the owner cuts and gives away large bunches of flowers, and this is also growing quite out-of-doors, and is in the most vigorous condition. I could point to very many such instances—so many, in fact, that I believe heat and over-attention are the enemies and the ruin of the constitution of this invaluable plant. I know it will grow in very warm houses. There is now a plant of D. indica variegata growing in the conservatory of Lady Gore Langton, quite 15 feet in circumference, and from 3 to 4 feet high, and is of immense service to Mr. Carter, the gardener; still I believe this plant would be healthier if outside. I should say, according to my experience, the variegated and plain leaved are equally hardy. I believe we have not realised half the value, nor developed half of the capabilities of the Daphne. I will give one instance of what is done by a gentleman amateur residing a few miles from here. In his plantations there are numbers of the Spurge Laurel, both in old plants and seedlings, and on these are grafted the D. indica. No one can describe the superabundant fragrance that fills the air when they are in bloom, and they last long when sweet flowers are rare. I believe the Daphne should never be cut. It is best to pinch the young wood to form bushy plants, but old shoots should be bent and tied down, to make them break. I hope some one will propagate and circulate this unique and useful plant, so that it may be found in every garden and cottage window. The Daphne Cneorum is a very desirable, sweet, and perfectly hardy pot plant, and well deserves a place amongst our favourites. *William Payne, Manager, The Exotic Nurseries, Taunton.*

Meconopsis nepalensis.—In your account of the rockwork at Kew (p. 795), you speak of the Meconopsis Wallichii with one or two other allied plants with several flower stems well advanced. Last week I had the pleasure of seeing M. nepalensis in full flower in Mr. Elwes' interesting garden at Misenden in this county, and a most striking plant it is. The plant is nearly 6 feet high, well covered with flowers; each flower, if fully expanded, would be quite 4 inches across, of a rich lemon-yellow, with a boss of golden anthers in the centre. The leaves and stems have a pleasant yellowish-brown hue over them which is very peculiar. Altogether I think it one of the best introductions to the hardy garden that we have had for some time. It is perfectly hardy, but, perhaps, not perennial. It however seems likely to produce plenty of seed. *Henry N. Ellacombe, Bitton Vicarage, Gloucestershire.*

Eucalyptus coccifera.—By the same post I forward a box of blooms of the Eucalyptus called here E. stenophylla, but I am not quite sure of the name. It is now a perfect mass of white bloom, some on one, two, and three year old wood. I enclose also seed-vessels of last year, which if opened or bruised are highly perfumed. The tree is 55 ft. in height, 5 ft. 8 in. at 5 ft. from the ground, and 7 ft. 9 in. at base in circumference. The stems generally are very naked, until near its extremities, having small shoots and pendent, giving it a little of the appearance of a Weeping Willow. It is inclined to be conical in growth, as the enclosed sketch represents. Its wood is of glaucous appearance, and seems as if it had been polished. It has received two severe checks by frost, but the past winter did not seem to affect it. I may mention that the bark comes off annually in stringy portions; the bark altogether has a whitish appearance. *D. C. Powell, The Gardens, Powderham Castle, near Exeter.* [It is the Eucalyptus coccifera, figured in the *Bot. Mag.*, tab. 4937. There is also an illustration in the *Journal of the Horticultural Society*, vol. vi., p. 222, from a plant shown by Messrs. Veitch at a meeting of the Society in June, 1851, and the accompanying remarks which we quote:—"According to Messrs. Veitch, it is perfectly hardy at Exeter, where it already forms a fine, open, spreading tree, 20 feet high, and from 15 to 18 feet through. It has grown there for eleven years, and when in flower in June looks like an Apple tree or Pear tree loaded with blossoms. According to Dr. Hooker, it is a species inhabiting the highest mountains of Van Diemen's Land, where it becomes a bush or small tree about 10 feet high. In the garden it has a thick bluish bloom spread over every part. The branches are purplish brown, and slightly rugged; the leaves oblong, more or less narrow, long-stalked, usually equal-sided, and most commonly extended at the point into a long and slender awn, by which it is readily recognised. The flowers are produced on short, compressed peduncles, in clusters of three to five; the tube of the calyx is pear-shaped, and the lid rugged and convex, but slightly concave in the centre. The fruit when ripe is nearly hemispherical, with a slightly raised, even border." For some further remarks on this plant, see p. 503. EDS.]

Notices of Books.

THE fourth number of the *Indian Forester* contains the continuation of Mr. Kurz's paper on the Bamboo and its uses, in which he describes the Bamboos of the Indian Archipelago and Malaya. Dr. Brandis contributes notes on the Burmese varnish procured from Melanorrhœa usitata. Mr. Cross' report on the results of his journey to the Isthmus of Darien, for the purpose of procuring seeds and plants

of Castilloa elastica (India-rubber), is also published, from which we learn that the temperature of the forests in which the tree grows ranged from 75° to 88°. Mr. Cross' report contains many matters of interest, from which we may probably take some extracts on a future occasion.

—— The *Floral Magazine* for June appears under the editorship of Mr. F. W. Burbidge. The plants represented are Phalænopsis Veitchii, of which only a single plant (in the possession of Messrs. Veitch) is known. It is to be regretted that of so rare a plant, not previously figured, analyses were not given and fuller textual details. Hibiscus Collerii, is a double-flowered, buff-coloured variety apparently belonging to Hibiscus rosa sinensis. The plant was introduced from the South Sea Islands, by Mr. Bull. Auricula Alexander Micklejohn is a fine grey-edged Auricula, highly spoken of by the Rev. F. D. Horner. Duke of Connaught Rose, H.P., is a brilliant full crimson Rose, with reflexed petals, raised from Madame Victor Verdier by Messrs. Paul & Son, of Cheshunt.

Publications Received.—Bulletino della Societa Toscana di Orticultura.—Sempervirens.—Proceedings of the Academy of Natural Sciences.—O Cultivador.—Gardeners' Monthly.—Report of the Royal Botanic Garden, Mauritius.—Indian Forester.—Gartenflora.—Revue Horticole.—Moniteur Horticole Belge.—The Southern Planter and Farmer.

Reports of Societies.

York Gala: *June* 14, 15 *and* 16.—This, the eighteenth great floral *fête* of the Society, was held on the above dates, as usual, in the spacious, well-adapted grounds in Bootham, adjoining the Asylum, and was in every way a success. The committee, in common with the promoters of other important exhibitions throughout the country, had some misgivings as to the result, from the large number of these gatherings in different parts that now offer tempting prizes to exhibitors, who do not exist in numbers sufficient to keep pace with the inducements thus held out to them. But, as the result showed, the York committee had no need for gloomy forebodings on this head, for the show was well and numerously represented in almost every department, and was unquestionably one of the very best that has been held during the present season in any part of the kingdom. Through the long series of years that the Society has existed the committee have not, as is too often the case, been composed of one or two workers, the rest only taking a nominal part; but here collectively, with their indefatigable secretary, all go to work with a will to make the arrangements such as gives assurance that exhibits, from the most important down to the least significant, will be fully cared for. The result, as might be expected, that exhibitors attend from far and wide with their best productions. To this is attributable the fact that the Society has at command an ample reserve fund in the bank, and has also been able to contribute handsomely to the various charities in the town.

Plants of most kinds were well and numerously shown; Roses in particular, although not of such dimensions as those of Messrs. Turner and Paul, were big enough to exemplify their natural character, and were extremely well done, clothed with clean healthy foliage and large, finely-developed flowers. Produced as they were in numbers sufficient to completely fill the centre of a large tent, they had a grand appearance; in fact, fine as are the immense pot Roses, meritorious examples of skilful cultivation, yet we have come to the conclusion that moderate-sized specimens, such as shown at York, with from eight or ten to a score of their massive flowers, many of which were as large and full as ordinary-sized Pæonies, are equally effective and more generally useful. The Pelargoniums, with the exception of a line of Fuchsias down the centre of the middle stage to act as a break and relieve the extended even surface of glowing colour, completely filled a large tent; they were, taken as a whole, beautifully done—not so large as they were seen at the London shows some years ago, but quite big enough, foliage healthy and sufficient, flowers large and profuse, especially the large-flowered and zonal kinds. Some of the fancies would have been better out in bloom in a few days.

The principal productions were, as is usual here, arranged in a large circular marquee, from which radiate, like the spokes in a wheel, five other spacious tents. This arrangement, although not possessing the advantage of displaying the whole to the eye in one complete picture, as seen when an extended canvas-covered space is enclosed, as at the Regent's Park or the Royal Horticultural Society, South Kensington, yet affords a series of views, gives a better opportunity for critical inspection, and causes less crowding at any one point—an important consideration where room has to be made for from 20,000 to 25,000 visitors in a day. The presence of this number is no uncommon occurrence at York.

In the middle of the central marquee were staged the large collections of twenty Stove and Greenhouse Plants, twelve in flower and eight in foliage (excluding Orchids). In this there were three exhibitors. T. M. Shuttleworth, Esq., Preston (Mr. Thornber, gr.), was 1st, with the best group we have seen him show, even and well matched. Amongst his flowering subjects the best was a very fine Pimelea mirabilis, 5 feet through; Statice profusa, equally good; the glowing rose-coloured Azalea Holfordii, Dracophyllum gracile, the delicate-tinted Erica florida, and the highly scented, pink-bloomed Boronia serrulata. In the foliage was probably the finest specimens ever produced of the generally considered difficult-to-grow Cordyline indivisa, with immensely long and broad leaves; Gleichenia speluncæ and rupestris, a grand Cycas circinalis, and others to match. There was a very close competition for second honours between Mr. House, of Peterborough, and T. F. G. Williams, Esq., Henwick Grange, Worcester. The latter gentleman's plants were considerably damaged in shunting one of the trucks on which the vans were conveyed by rail. Mr. House had the best foliage, whilst some of Mr. Williams' flowering specimens were of more than usual merit. After close inspection on the part of the judges the verdict was given in favour of Mr. House, who had good examples of the bright Azalea Mars and Stella, Bougainvillea glabra, and a very large Kalosanthes coccinea, not sufficiently in flower; Pandanus Veitchii, Phormium tenax variegatum, and several Crotons, including C. pictum, which, although old, will still, when well coloured, hold its own against the newer varieties. Mr. Williams had a magnificent Anthurium Scherzerianum, a large flowered highly-coloured form with some fifty expanded blooms upon it, a good Dipladenia amabilis, a moderate sized profusely flowered Hedaroma (Darwinia) tulipifera, Erica Aitoniana Turnbulli, the fine Palm Pritchardia pacifica, Latania borbonica, and Croton interruptum.

For six Orchids, Dr. Ainsworth, Manchester, was 1st, with a fine and well-flowered lot, including Saccolabium guttatum with fourteen spikes, fresh, and in beautiful condition; a grand Aerides Schroederi bearing four spikes, one of which had seven side branches, and Acrides Fieldingii. Messrs. Cole, Withington, were 2d.

For three Orchids Dr. Ainsworth was also 1st, showing a very fine Saccolabium guttatum, with seven spikes; 2d, G. Talbot, Esq., Leeds.

For eight ornamental foliage plants, F. J. S. Foljambe, Esq., Worksop, was 1st, his best being the fine massive-leaved Palm, Stevensonia grandiflora, Anthurium crystallinum, Pandanus Veitchii, Phormium Colensoi, and Areca Verschaffeltii; Mr. Dixon, Norwood Nurseries, Beverley, was 2d, having amongst others an Encephalartos, Dicksonia antarctica, and Cycas revoluta; 3d, Mrs. Pease, Darlington, with smaller but handsome plants of Dæmonorops plumosus, Croton Weismanni, C. Youngii, and Cocos Weddelliana. Extra prizes were awarded to J. Ringrose, Esq., Cottingham, and Mr. House. In the corresponding class of five ornamental ptants, confined to amateurs, Mrs. Wood, Armla, Leeds, was 1st, having a nice Latania borbonica and Cordyline indivisa: 2d, Mrs. Pease, in whose lot was a handsome Phœnix reclinata, and Areca Verschaffeltii; 3d, Mr. J. Ringrose.

For three Palms, Dracænas or Cordylines, Mr. Shuttleworth was 1st, and he had the elegant variegated form of Curculigo recurvata, and the Fern-leaved Cupania.

Calceolarias were nicely shown, and produced in considerable quantities, making a good display. Mr. Alderman Steward, York, was 1st.

In the class for sixteen distinct bedding plants (excluding Pelargoniums) the exhibits were in large pans, and in a way to show their habit and colour. Amongst them we noticed the new intensely deep blue Lobelia Ebor, a most telling variety, apparently good in habit, free flowering, and very effective. 1st, W. Dove, Esq.

For eight exotic Ferns Mr. Dixon was 1st. In his exhibit was the somewhat difficult-to-grow Gleichenia dicarpa, Asplenium nidus, and Todea superba.

For a pair of Tree Ferns Mr. Dixon was 1st, showing two good examples of Dicksonia antarctica.

For a single exotic Fern Mr. Shuttleworth was 1st, with a grand specimen of Gleichenia flabellata, 8 feet through.

Twelve hardy Ferns: These were well shown—Mr. Shuttleworth 1st, having most of the best plants, in excellent condition.

Thirty-six varieties of British Ferns, in 6 inch pots: 1st, Mr. Rodwell.

Six Lycopodiums.—These also were beautifully grown, the varieties being very distinct and good. 1st, R. Hornsby, Esq., Grantham (his best were splendid panfuls of L. rubricaulis and L. umbrosa).

Pelargoniums, as we have already said, were a fine feature. For twelve show varieties Mr. May, Hope Nurseries, Bedale, was 1st, showing in his usual style. The plants were varied in colour, and well matched in every way: they were not over-tied, only sufficiently supported to preserve the flowers in transit. The most effective were Desdemona, Conqueror, Queen of Whites, Rob Roy, Example, and Dick Turpin. Messrs. Lazenby & Sons, York, also staged a very good dozen, the best of which were Claribel, Brigand, Queen Bess, Maid of Honour, Selina, and Desdemona.

For nine French and English spotted varieties Messrs. Lazenby were 1st. Their most telling plants were Hiawatha, Lord Raglan, Lovina, and Digby Grand.

For six Zonales J. Simpson, Esq., Leeds, was 1st, with, in fine condition, Mrs. W. Paul, Clipper, and Cherry Cheek.

For six Nosegay or Hybrid Nosegay Pelargoniums Mr. Simpson was again 1st, with splendidly flowered plants; amongst them Princess of Wales, Grand Duke, and the old but excellent variety, Rose Rendatler, stood conspicuous.

For six Fancies Mr. Tetley took the lead; his specimen of Arabella Goddard was flowered as this proverbially free bloomer is not often produced; Roi des Fantaisies was also beautifully done.

For three Fancies Mr. Alderman Steward was 1st; Undine was in this lot remarkably fine.

The classes for double Pelargoniums, as also Tricolors and Bronzes, were, like those we have already named, well represented. For six Tricolors, W. Walker, Esq., York, was 1st. Bronzes were finely coloured, the cold winds we have had appear to have imparted additional colour to them. 1st, J. S. Lightfoot, Esq., York.

Fuchsias, as a rule, were not sufficiently in flower, and many of the plants had their branches tied-in too closely, which gave them a stiff appearance and destroyed their natural gracefulness. For six, G. Talbot, Esq., was 1st.

For a single foliage plant Mr. Shuttleworth was 1st, with a very large Croton undulatum; 2d, Mr. A. Hughes, showing a good Cycas revoluta.

Twenty alpine and herbaceous plants: These were both varied and beautiful. 1st, Mr. Simpson, Selby.

Coleus in sixes were produced in good condition. W. Dove, Esq, was 1st, his most effective being Sunrise and Crown Jewel.

In this tent was a group of alpine and other hardy plants, exhibited, not for competition, by Messrs. Backhouse; they were planted out amongst rockwork so as to form a sort of index to the nature of the positions they should occupy. From the well-known *recherché* character of the collection it will be easily imagined that it contained some of the first gems amongst this most interesting family.

Gloxinias were well done. Those which took the 1st prize, shown by W. J. Hood, Esq., were very fine varieties, excellently grown and flowered; 2d, Mrs. Wood; 3d, Mr. A. Kitching.

For six dinner-table plants Messrs. Cole were 1st with a very nice group, fresh and just right in size.

Six Palms, Dracænas, or Cordylines, in 10-inch pots: For these Mr. House was 1st.

The tent devoted to amateurs' stove and greenhouse plants, and both the open and amateurs' classes of Azaleas was the weakest part of the show, especially in the Azaleas, which, with few exceptions, were very indifferent. Six stove and greenhouse plants: 1st, T. F. G. Williams, Esq., showing a neat Anthurium and Stephanotis. Three stove and greenhouse plants: Mr. Dove, 1st. Six Azaleas: 1st, Messrs. Lazenby & Sons. Three Azaleas: 1st, Mr. Dove.

For a single stove plant Mr. Shuttleworth was 1st, showing a profusely bloomed Dendrobium nobile; 2d, Mr. Talbot, with Eucharis amazonica; 3d, Mrs. Wood, with the now seldom seen Tabernæmontana coronaria flore-pleno, not sufficiently in bloom.

Single greenhouse plants: Here also Mr. Shuttleworth was 1st, with a very good Dracophyllum gracile, fresh and in nice condition; Mr. Hornsby, 2d, for Rhynchospermum jasminoides; and Mr. Varvill, 3d, showing a large, well flowered Brugmansia suaveolens, a useful conservatory plant.

We never before saw such Pot Roses grown in the provinces—fresh, and shown in numbers sufficient to make a very fine display. For fifteen in 8-inch pots Mr. May was 1st: most noticeable were François Michelon, Madame Lacharme, Paul Néron, Captain Christy, Louise Peyronet, Marie Baumann, and Marie Rady. 2d, Messrs. Jackson & Co, who had La France, Madame Denis, Prince Camille de Rohan, and President, very good. In the class for 9 and 8 inch pots, Mr. May was also 1st: amongst these Marie Baumann, Madame Rival, Centifolia rosea, and Princess Christian, were especially worthy of notice.

For six in unlimited sized pots, Mr. May took the 1st prize. Messrs. Jackson received an extra prize in this class. Six (amateurs): 1st, Mr. Dove. Three (amateurs): Mr. Tetley, 1st.

Cut Roses, as might be supposed from the backward-

ness of the season, were confined to under-glass productions, and consequently were limited in numbers.

FRUIT, notwithstanding the ungenial season we have had, was not only forthcoming in large quantities, but in remarkably fine condition; this especially applies to Grapes, Strawberries, Peaches, and Nectarines; the more than usual colour in some of the dishes of the latter fruits shown proved conclusively that colour can be had even in such a sunless spring as the present by full exposure to light, and although we now and then hear an attempt made to make it appear that colour in fruits to which it is natural is not an index to flavour, even when the other evidences of good cultivation are present, it will be long before fruit growers believe such doctrine.

For six dishes Sir H. M. Thompson, Kirby Hall, York, was 1st, with good Black Hamburgh Grapes—large Chasselas Musqué, a grand dish of Grosse Mignonne Peaches, splendid Violette Hâtive Nectarines, Keens' Seedling Strawberries, and a Melon. The Duke of Cleveland, Raby Castle, Darlington, was 2d, showing Black Hamburgh and Duke of Buccleuch Grapes, Royal George Peaches, Figs, a Pine, and a Melon—all good. Lord Bagot, Blithfield, Rugeley, who was 3d, staged Muscat and Hamburgh Grapes, beautiful Violette Hâtive Peaches, Elruge Nectarines, Snooth Cayenne Pine, and Trentham Hybrid Melon.

In the class for four dishes Lord Bagot took 1st, with Hamburgh Grapes, very good Peaches, Nectarines, and a Melon. T. F. G. Williams, Esq., Worcester, was 1st for a Pine, showing a very fine Queen. Black Grapes: 1st, Sir H. M. Thompson, with very good Hamburghs. White Grapes: 1st, Sir W. Milner, Tadcaster. New variety of Grapes: 1st, Lord Bagot. For a dish of Peaches Sir J. Ramsden, Byrom Park, was 1st, with Violette Hâtive, very fine and in beautiful condition. Nectarines: 1st, H. W. F. Bolckow, Esq., Middlesborough; 2d, Sir H. M. Thompson. A number of Melons were shown, Colonel Loyd Lindsay, Wantage, Berks, being 1st for both scarlet and green fleshed.

Royal Botanic: *June 21.* — Favoured with brilliant weather, a good show, and a large company of visitors, the second summer exhibition of this society must be chronicled as a success. The heat was very oppressive throughout the day, but that did not prevent the Princess of Wales, the Duke and Duchess of Teck, and other personages of distinction from visiting the show during the morning. The display under the large marquee was very brilliant, flowering plants of first-rate quality preponderating largely over the subjects grown for the beauty of their foliage only. Orchids and Pelargoniums were specially well represented, the bank usually devoted to the former being very much better covered than has been seen lately, while of the latter it is not too much to say that for numbers and quality such a display as they made to-day is by no means common.

ORCHIDS.—In the amateurs' class for twelve Orchids there was an unusually good competition. Mr. Denning, gr. to Lord Londesborough, came out very strong, and won the 1st prize with a grand lot, which included Cattleya Leopoldi with eight spikes, Lælia purpurata with eight grand flowers, Cattleya Warneri with five splendidly coloured blossoms, Epidendrum elatum with three well branched spikes, Oncidium Lanceanum with two good spikes of richly coloured flowers, a nice Cattleya Mossiæ, Cypripedium Veitchii with six grand flowers, and a large mass of Anguloa Clowesii. Mr. Ward, gr. to F. G. Wilkins, Esq., came in 2d, having, amongst others, a very fine mass of Cypripedium barbatum superbum, Odontoglossum Blantii, with a head of flowers about 3 feet through; a nice fresh Dendrobium nobile formosum, with nine flowers; and Odontoglossum vexillarium, with nineteen good blooms. The 3d prize went to Mr. Salter, gr. to W. Cobb, Esq., The Elms, Sevenoaks; and in his collection were a very fine Oncidium macranthum, Epidendrum vitellinum majus, with ten spikes; Dendrobium Bensonæ, Chysis bractescens, and Odontoglossum Alexandræ, &c. Mr. Heims, gr. to F. A. Philbrick, Esq., Avenue Road, Regent's Park, had also a nice dozen, the most conspicuous of which were Odontoglossum vexillarium, with four spikes and nineteen flowers—the same number as on Mr. Ward's; and Saccolabium guttatum, with half-a-dozen good spikes. In the amateurs' class for six the awards went to Mr. Douglas, gr. to F. Whitbourn, Esq., Mr. Ward, and Mr. Heims, in the order named; Mr. Douglas having a beautiful Lælia purpurata, with nine blooms; Cattleya gigas, with three fine flowers, and nice pieces of Aerides Fieldingii and Odontoglossum Roezlii. In the nurserymen's class for a similar number Mr. B. S. Williams came in 1st with a capital lot, including Odontoglossum citrosmum roseum, with six beautiful spikes; a Cattleya Mossiæ, with twenty-one flowers; and Orchis foliosa with over two dozen spikes. Odontoglossum citrosmum roseum and O. citrosmum carneum, and a fine mass of Cypripedium barbatum purpureum were nicely shown by Mr. Bull. In a group of twelve from Mr. Williams we noticed a very fine example of Brassia verrucosa, a well-flowered Lælia purpurata, and a good Cattleya Mossiæ superba, &c. Messrs. T. Jackson & Son, Kingston, had a nicely flowered piece of Lycaste aromatica, a finely coloured Cattleya Warneri, and nice pieces of Aerides crispum and Odoratum.

NEW PLANTS.—These, as usual, formed an interesting feature of the exhibition, being contributed in considerable numbers by Messrs. Veitch & Sons, Mr. W. Bull, Mr. B. S. Williams and Messrs. E. G. Henderson & Son, forming part of the extensive miscellaneous groups set up by each. The most interesting subjects contributed by Messrs. Veitch were some additions to the numerous varieties of the jasminiflorum type of Rhododendron which they have introduced, and which are likely to be useful plants for the decoration of warm conservatories, or to furnish choice flowers for cutting. Those certificated on this occasion were named Princess Frederica, an indian-yellow self-coloured flower; Prince Leopold, a bright buff-orange with salmony red throat and centre; and Prince George, a large, bright, waxy pink self-coloured. The pretty yellow flowered Masdevallia Davisii was also certificated. The group also contained Acalypha macrophylla and Rottlera tinctoria, two plants with large coloured foliage; Anthurium Vetchianum, not enough developed; Dracæna McArthuri, a rosy variegated sort with short leaves and close habit, not sufficiently in character; and D. brachyphyllum, also short-leaved, but broader and variegated with rosy red; Croton McArthuri, a form with long irregular-shaped leaves, marked unequally with yellow; the showy but not new Hæmanthus cinnabarinus, a very attractive plant; Ficus Mooreana, with broad oblong-ovate acuminate shining bright green leaves, having a white midrib; and an unnamed Alocasia, far from handsome but interesting, a cross between Caladium Chantini, and one of the Alocasias. Mr. Bull had certificates awarded for the following:—Ixora regina, a bright-coloured variety, probably bred from amboinensis, producing fine heads of orange-scarlet flowers, with which are intermingled others of a clear yellow; Hibiscus Collerii, a free-blooming variety of rosa sinensis, with double buff-yellow flowers, crimson at the base; Maranta Massangeana, one of the most beautiful of the Marantas, having an unequal central silvery band, outside which is a broad band of rich velvety brown, through which run the silvery ribs; Smilax Shuttleworthii, a climber with large cordate, deep green leaves, mottled with dull grey; Aralia splendidissima, a single-stemmed plant, with long pinnate leaves, having the shining leaflets entire or lobed and wavy at the margin, and A. spectabilis, an elegant plant, with pinnato-pinnatifid leaves, the pinnæ lanceolate ovate, and the lobes falcate; Artocarpus Cannoni, whose shining dark bronzy purple leaves are lobed towards the apex; Croton Mortii, a fine variety with oblong-obovate leaves, and rich yellow variegation; Dracæna insignis, a pretty plant, with short leaves thickly set, the variegation mixed rosy-red and blush—a distinct narrow close-set type; and Dieffenbachia Shuttleworthii, a dwarf species, with erect lanceolate-oblong leaves, having a broad feathery silver-grey band down the centre, overlying and spreading on each side the costa. Mr. Bull also showed the interesting Croton imperialis, with blunt-ended leaves, having an excurrent horn, the costa and margins taking on a yellow hue, and eventually changing to red, Davidsonia pungens, Dieffenbachia majestica, D. triumphans, and Catakidozamia Hillii, one of the forms of Macrozamia Denisoni. Mr. B. S. Williams exhibited Rhopala pubescens, a neat-looking shrubby plant, having the young growths covered with whitish pubescece (this was certificated); Dieffenbachia Parlatorei, Croton Queen Victoria, with yellow, and C. Williamsii, with white variegation; Maranta mediopicta, Dracæna lutescens, and Lomaria gigantea, which appears to be the same as L. heterophylla. Messrs. Henderson had a number of plants of a pretty variegated creamy-white striped grass, Dactylis glomerata latifolia aurea, to which a certificate was granted. Mr. J. H. Ley, Croydon, exhibited the curious Pteris serrulata Leyi, in which the upper part of the segments is depauperised into a linear tail; and Zamia duplicata, a cone-bearing plant of which was shown in Mr. Williams' group under the name of Zamia Lehmanni.

Floral Certificates were awarded to the Rev. A. Matthews, Gumley, Leicestershire, for two show Pelargoniums—Wallace, crimson mottled with scarlet, and dark velvety purple upper petals; and Henry S. Ryder, soft rosy pink, with a white eye, and dark, almost black, spots—both flowers of fine form. To Mr. J. Laing, Stanstead Park Nursery, Forest Hill, for Fuchsia Laing's Hybrid, a valuable seedling from Fuchsia fulgens, with flowers having long tubes of a bright rose colour, and the sepals and corolla of a darker shade. It has a fine free habit, and no doubt will prove of great service to the hybridiser. To — Foster, Esq., Clewer Manor, for show Pelargoniums Bridesmaid, rosy purple, with very dark spots; and Purity, salmon-red, with very dark coloured upper petals—the colours very soft and the flowers of good form. To Mr. Burley, nurseryman, Brentwood, for Zonal Pelargonium Charming, remarkable for its bright cerise colour and fine pips; and for silver-edged Pelargonium Mrs. J. C. Quenell, which has pure pink flowers. To Mr. William Bull, for Lobelia cœrulea albo-marmorata flore-pleno, an abominably long name for a pretty innocent little flower, which may be said to be a good double variety of L. Paxtoni; and to Mr. Turner, for show Pelargonium Sappho, brilliant rose with black spots, a free-growing, short, stocky-habited plant, which promises to make a useful decorative subject, and perhaps prove a good one for market work.

PELARGONIUMS.—With nine show Pelargoniums the competitors were Mr. J. Ward, Mr. Turner, and Messrs. Dobson & Sons, and the prizes were taken in the order named. Mr. Ward's plants as usual were of the highest character, and especially examples of Caractacus and Royal Albert, which measured more than 4 feet over, and were grandly flowered. The other specimens were but a trifle smaller, and those of Ruth, Example, Maid of Honour, Emperor and Admiration, were finely bloomed and remarkable alike for the purity of their colours. Mr. Turner's plants were smaller but in all other respects quality itself, and the softness and delicacy of the colours in such varieties as Charlemagne, Admiration, Pompey, and Pickles, left nothing to be desired. Messrs. Dobson & Sons were a good 3d. In the amateurs' class for six the competition was strong between Mr. G. King, gr. to R. Jew, Esq., Wolsey Grange, Esher, and Mr. James, gr. to W. F. Watson, Esq, Isleworth, but the former having a decided advantage over his opponent in a greater display of flowers won the 1st prize, and Mr. James had to accept second honours. Mr. King's plants measured about 3 feet across, had good foliage, and were well flowered; while Mr. James' plants were thinly bloomed, though in other respects very fine. Zonal Pelargoniums were shown in fair numbers, but, with one or two exceptions, must be considered poor. The finest half-dozen—and very well grown and flowered plants they were—came from Mr. G. King. Each specimen measured about 4 feet over, and were almost flat, the varieties being Delightful, salmon-pink; Leonidas, Clipper, and La Grande, scarlets; Gloire de Courtenay, salmon; and Mrs. William Paul, pink. Mr. Catlin, gr. to Mrs. Lermitte, Finchley, was 2d, but hardly in such good form as we have seen him. A remarkably good class was that for six Fancy Pelargoniums, in which Mr. King again came in 1st, with the finest lot that has come under our notice for some time. The largest specimens must have been quite 4 feet over, and they were perfect masses of bloom, the varieties being Madame Sainton Dolby and Roi des Fantaisies. Mr. James was a very good 2d, and Mr. J. Weir, gr. to Mrs. Hodgson, Hampstead, 3d. In the corresponding class for nurserymen Mr. Turner was 2d, and Messrs. Dobson & Son 3d, no 1st being awarded.

STOVE AND GREENHOUSE flowering and fine-foliaged PLANTS and Heaths were, generally speaking, well shown, but as there was nothing that we have not given the name of over and over again this season, we need only say that of the first-named the leading exhibitor was Mr. Ward, and that he was well followed by Mr. Donald, gr. to J. G. Barclay, Esq., Leyton, &c. Amongst nurserymen the leading honours went to Mr. B. S. Williams and Messrs. Jackson & Son. Mr. Donald was the winner of the 1st prize for fine-foliaged plants amongst amateurs, and Mr. Williams amongst nurserymen. The last-named exhibitor also sent a fine group of Palms. Mr. Ward and Messrs. Jackson & Son had the best Heaths.

The cut flowers and fruit were shown in the long corridor. The former consisted almost entirely of Roses, but we hope not the best Roses we shall see this season, unfavourable though the weather may have been. Upwards of thirty boxes were staged, and the principal exhibitors were Mr. Turner and Messrs. Paul & Son amongst nurserymen, and Mr. Chard, gr. to Sir F. Bathurst, Clarendon Park, Salisbury, amongst amateurs. In the classes for cut hardy flowers, Messrs. Hooper & Co., Covent Garden, and Mr. Chard exhibited some very fine Irises; while Mr. Roberts, gr. to W. Terry, Esq., Peterborough House, Fulham, and Mr. G. Wheeler, each sent interesting miscellaneous collections, the awards going in the order named.

With the exception of Grapes and Queen Pines, the show of fruit was very poor. Thirteen dishes of Black Hamburgh Grapes were staged in competition, and the prizes went in the following order:—1st, Mr. Akehurst, gr. to S. Copestake, Esq.; 2d, to Mr. Nash, gr. to the Duke of Beaufort, Badminton; and 3d, Mr. J. Douglas. Good examples were also shown by Mr. Roberts, gr. to W. Terry, Esq.; Mr. Woodbridge, Syon House; Mr. Sage, Asbridge; Mr. Shrimpton, Halton, Tring; and Mr. Robins, Hartwell House, Aylesbury. Of Muscat of Alexandria there were eight dishes, all fine samples had they only been better coloured. The finest came from Mr.

Grimmett, gr. to J. Wilmot, Esq., Isleworth; Mr. Douglas, and Mr. P. E. Kay. Three fine bunches, with large but green berries, of the Canon Hall Muscat, came from Mr. A. Philip, gr. to A. Moss, Esq., Chadwell Heath; and a very fine dish of Foster's Seedling, also wanting in colour, was contributed by Mr. Atkins, Lockinge Garden, Wansford. Mr. Sage, Ashridge, also sent a good sample of the same variety. About a dozen 12 lb. baskets of Grapes were staged, and all may be classed as of good quality. The best blacks came from Mr. Akehurst, Mr. Kay, and Mr. Douglas; and of white the finest were contributed by Mr. Grimmett, Mr. Douglas, and Mr. Kay. Of Melons there were only five, these consisting of Hero of Bath and Heckfield Green-flesh, from Mr. Wildsmith, gr. to Viscount Eversley; Longford Castle Green, and Longford Castle Scarlet, from Mr. H. W. Ward, gr. to the Earl of Radnor; and Golden Perfection, from Mr. Sage. There were seventeen Pines, and the best pair of Queens were shown by Mr. Ward, gr. to J. N. Miller, Esq., Bishop's Stortford, the fruits averaging about 5 lb. apiece. For the pair Mr. Harris, gr. to Mrs. Vivian, Singleton, Swansea, was 2d; and Mr. Bond, gr., The Beeches, Weybridge, 3d; the corresponding positions in the single class being filled by Mr. Ward, Mr. Miles, gr. to Lord Carington, and Mr. Harris. Mr. H. W. Ward also sent a good Providence. The best Cherries came from Mr. Miles, and the finest Strawberries from Mr. Douglas, and fine Figs were staged by Mr. Miles and Mr. Sage. Mr. Woodbridge and Mr. Miles sent the best Nectarines, and Mr. Sage and Mr. Shrimpton the finest Peaches. Tomatos were well shown by Mr. Miles and Mr. Douglas, and some particularly good Vanillas came from Mr. Woodbridge.

Royal Horticultural: *June* 21.—Lord Alfred Churchill in the chair. There was a very small attendance of Fellows, and the usual 3 o'clock meeting was of very short duration. The Rev. M. J. Berkeley commented upon the few subjects brought under the notice of the committees, the most remarkable of which were flowers of a white Clematis, raised by Mr. Noble—the nearest approach to a good white form of C. Jackmanni that has yet been seen; a very distinct variety of the old Mormodes luxatum, from Sir Trevor Lawrence, M.P.; and a plant of Pelargonium Cleopatra (a sport from Cerise), from the Society's garden at Chiswick, reverting back two generations.

SCIENTIFIC COMMITTEE.—A. Murray, Esq., in the chair.

Growth by Day and by Night Respectively.—Mr. Edgeworth gave the results of several measurements made by him on the growth of the Virginian Creeper and Tamus, in all of which the daylight growth greatly exceeded that by night.

Reversion in Pelargonium.—Specimens of Pelargonium Cleopatra were shown bearing dimorphic flowers, and other specimens from Professor Babington of a similar nature, and in which a variegated plant had thrown a green-leaved sport.

Injury to Conifers.—The Hon and Rev. J. T. Boscawen sent shoots of Deodar browned and killed. He considered that it could not be due to frost, but other members of the committee, familiar with similar appearances, attributed it to frost or excessive radiation.

Variations in Plants.—Dr. Masters showed a number of specimens of Clover, Rumex acetosa, and other species taken from Mr. Lawes' experimental plots at Rothamsted, and which presented very great variations in character even when growing side by side on the same plot; thus confirming the opinion arrived at in the course of the experiments made at Chiswick, where in the same boxes individual plants produced seedlings varying very greatly in character—similar variations occurring in other boxes with a quite different manurial combination. Various malformations produced by parasitic fungi were exhibited, and the meeting adjourned.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. The counter-attraction at Regent's Park was the cause of a very thin meeting to-day, and only a few subjects were staged for adjudication. Messrs. Veitch & Sons had a First-class Certificate for Azalea indica imbricata, figured at p. 817. Sir Trevor Lawrence, M.P., Barford Lodge, Dorking, received a First-class Certificate for Mormodes luxatum var. eburneum, a distinct variety, with white sepals and petals, a broad white incurved lip, with a well-defined band of rosy purple in the centre, and a curiously twisted column. Along with this came a plant, with one fine spike of yellow flowers, of the rarely seen Mexican Mormodes pardinum, which Mr. Berkeley thought was the variety unicolor; a fine darkly marked Odontoglossum Roezlii, named atropurpureum; and a fine specimen, with seven beautiful spikes, of × Calanthe Dominii, which is a hybrid raised by Mr. Dominy between C. masuca and C. veratrifolia, and which has lilac sepals and petals, and a deep purple lip. A Cultural Commendation was awarded to this specimen. The Hon. and Rev. J. T. Boscawen, Lamoran, Cornwall, sent a very fine blue Iris, which proved to be a variety of I. xiphioides; and Colonel R. Trevor Clarke, Welton Place, Daventry, sent a very interesting Pink with rosy purple flowers, raised from a purple-flaked Carnation crossed with a purple Indian Pink. It is not a florists' flower, but will make a nice border plant, closely resembling the old mule Pink, and illustrating the mode of origin of that flower. Mr. Miles, of the West Brighton Nursery, Cliftonville, Brighton, sent examples of a good strain of Mignonnette, said to be a cross between Parson's Giant White and the old dwarf form, and having very fine spikes and a good habit. Messrs. Waite, Barnell & Co., Southwark Street, S.E., showed a dwarf compact variety of Saponaria calabrica named pumila; and Mr. R. Dean, Ranelagh Road, Ealing, sent cut flowers of his fine new strain of Canterbury Bells.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, JUNE 21, 1876.

MONTH AND DAY.	BAROMETER. Mean Reading, Reduced to 32° Fahr.	BAROMETER. Departure from Average of 18 years.	TEMPERATURE OF THE AIR. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 Years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	WIND. Average Direction.	RAINFALL.
June	In.	In.	°	°	°	°	°	°			In.
15	29.67	−0.12	66.6	47.1	19.5	55.6	− 3.4	49.2	83	SW: S.	0.16
16	29.68	−0.11	64.8	46.7	18.1	53.3	− 5.8	48.7	84	NW, NNW, SW.	0.10
17	29.70	−0.09	59.4	45.5	13.9	51.5	− 7.8	50.1	94	SSW	0.03
18	29.99	+0.11	69.0	52.6	16.4	59.5	0.0	45.8	60	WSW: SSW	0.00
19	29.95	+0.15	75.2	46.3	28.9	58.7	− 1.0	53.8	83	S: SSE, SSW.	0.00
20	29.85	+0.06	83.1	51.9	31.2	66.3	+ 6.4	54.9	67	ESE: E	0.00
21	29.72	−0.08	84.9	56.4	28.5	69.2	+ 9.1	59.6	71	SE: E.	0.00
Mean	29.78	−0.01	71.9	49.5	22.4	59.2	− 0.4	51.7	77	variable	sum 0.59

June 15.—Fine and bright till evening, then dull, with heavy rain.
— 16.—Fine but cloudy, and dull at times. Heavy rain before 9 A.M. Cold.
— 17.—Dull, cold, and cloudy throughout. Occasional slight rain.
— 18.—A very fine day, partially cloudy.
— 19.—Very fine, bright, and warm throughout.
— 20.—Very fine and hot. Strong breeze of wind.
— 21.—A fine hot day. Clear till evening, then cloudy.

—— During the week ending Saturday, June 17, in the vicinity of the metropolis the reading of the barometer at the level of the sea decreased from 30·23 inches at the beginning of the week to 30·01 inches by the afternoon of the 12th, increased to 30.05 inches by the morning of the 14th, decreased to 29·80 inches by the evening of the 15th, increased to 29.92 inches by the evening of the 16th, and decreased to 29·85 inches by the end of the week.

The mean reading for the week at sea level was 29·98 inches, being 0.01 inch above that of the preceding week, and the same as the average.

The highest temperatures of the air varied from 74¾° on the 12th to 59½° on the 17th; the mean value for the week was 66¾°. The lowest temperatures of the air ranged from 43¼° on the 11th to 55° on the 13th; the mean for the week was 47½°. The mean daily range of temperature for the week was 19¼°, the greatest range in the day being 28½° on the 12th, and the least, 8°, on the 13th. The mean daily temperatures of the air were as follows:—11th, 56°.5; 12th, 58°; 13th, 57°.5; 14th, 56°.5; 15th, 55°.6; 16 h, 53°.3; 17th, 51°.5; and the departures in defect of their respective averages were—1°.8, 0°.5, 1° 2, 2° 4, 3°.4, 5°.8, 7° 8. The mean temperature of the air for the week was 55°.6, being 3° below the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo, placed in the sun's rays, were 120° on the 11th, and 113° on the 14th; on the 13th the reading did not rise above 78°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 32° on the 11th, and 38¼° on the 12th: the mean for the seven low readings was 41¾°.

The direction of the wind was variable, and its strength gentle. The weather during the week was fine, but cloudy, cold, and showery.

Rain fell on three days in the week; the amount measured was 0 59 inch.

In England the highest temperatures of the air observed by day were 81° at Cambridge, and 79¼° at Nottingham; at Liverpool the highest temperature was 65°; the mean value from all stations was 73½°. The lowest temperatures of the air observed by night was 36½° at Nottingham; the next in order was 37½° at Leicester; and 38° at Cambridge, Sheffield, and Eccles; the general mean from all stations was 40¾.

The range of temperature in the week was the least at Liverpool, 18°, and the greatest at Cambridge, 43°; the mean range from all stations was 32½°. The mean of the seven high day temperatures was the highest at Cambridge, 70½°, and Nottingham, 69¾°, but the lowest at Liverpool, 60¾°; the mean from all stations was 66½°. The mean of the seven low night temperatures was the lowest at Eccles, 43½°, but the highest at Plymouth, 50¾. The mean value from all stations was 47½°. The mean daily range of temperature in the week from all stations was 19°; the greatest was at Nottingham, 24½°, and the least at Liverpool, 11°. The mean temperature of the air for the week was 55½°, being 1½° higher than the value for the corresponding week in 1875. The highest was 56½°, at Cambridge, and the lowest 52½°, at Liverpool.

Rain fell on four days in the week at most stations; the amounts measured varied from an inch and one-tenth at Leicester to a quarter of an inch at Brighton and Bradford; at Newcastle-on-Tyne no rain fell; the average fall over the country was half an inch.

The weather during the week was fine, but cold, cloudy, and showery.

In Scotland, the highest temperatures ranged from 74° at Edinburgh to 64½° at Glasgow, and 65° at Greenock and Paisley. The lowest temperatures varied from 39° at Paisley to 45½° at Glasgow. The average of the former was 69½°, and that of the latter 41½°. The mean range of temperature in the week from all stations was 27½°. The mean temperature of the air for the week was 54°, being 1½° colder than in England, and the same as the value for the corresponding week in 1875. The highest occurred at Edinburgh and Dundee, both 55°, and the lowest at Paisley, 51½°.

The amount of rain measured at Greenock was 1¼ inch, at Glasgow three-quarters of an inch fell; but at Aberdeen two-hundredths of an inch only was recorded; at Leith no rain fell; the average fall over the country was half an inch nearly.

At Dublin the highest temperature was 71½°, the lowest, 37½°; the range, 33½°; the mean, 53¾°; and the rainfall 0.57 inch,

JAMES GLAISHER.

Enquiries.

He that questioneth much shall learn much.—BACON.

110 ANT-HILLS.—I have numberless ant-hills about my grounds. Ants find their way into my greenhouses, forcing-house, &c., and infest all the young shoots of my fruit trees. Will you tell me how I am to destroy the nests, also how to drive them from the houses? *C. A.*

Answers to Correspondents.

ALLAMANDA NOBILIS: *P. O.* The possibility of getting an Allamanda nobilis in flower in the time mentioned depends upon the state of the plant at the present time. It will take five or six weeks to get it fully in bloom from the time the bunches are set and discernible in the points of the shoots, and this with a night temperature of 75°, and a proportionately higher temperature in the day, without any shading over it. The plant must have been insufficiently ripened last autumn, or not have received enough heat through the spring, or it would have been in flower ere this. There is no difficulty in having Allamandas in bloom by the end of May or beginning of June. *T. Baines.*

CATTLEYAS: *J. R. H.* Your question is answered at p. 819

CUCUMBERS DISEASED: *S. H. C.* Your Cucumbers are affected by the disease known as gumming. You can do nothing to cure it; but, as a preventive, we would recommend you to have a good clear out, and start afresh, with a change of soil and seed, obtaining both from a distance, if possible.

EFFECT OF COLD ON VITALITY OF SEEDS: *X.* The lowest temperature to which, so far as we know, seeds have been subjected was 100° Cent. below freezing point—a degree of cold obtained by congelated carbonic acid, to which seeds were exposed by Boussingault without losing their vitality.

FERN: *J. Meredith.* It is much like Pteris serrulata Applebyana, but the specimens sent appear dwarfer and better tasselled. If this is constant it is an elegant plant and a desirable novelty, and might be called gracillimum.

GALLS ON LEAVES: *Camjee.* The galls on your leaves, which are those of the Sycamore, not the Plane (though often so called in Scotland), are the work of a minute Acaroid, a species of Volvulifex. The appearances on the leaves of Mountain Ash are also due to a minute four-legged Acaroid.

GRAPES: *J. A. R.* The berries of your Grapes are affected by what is known as "scalding." It is caused chiefly through imperfect attention to the giving of air to the houses on very bright sunshiny days.

HORSE CHESTNUT: *J. H. Ware.* Probably the work

of the caterpillar of the Leopard Moth, repeatedly figured in our columns.

MELON ATTACKED BY AN INSECT: *P.* When the specimen reached us there was no insect present. Please send us a specimen of the insect corked up in a quill. *A. M.*

MILDEW ON VINES: *A. B. P.* Dust all the affected leaves, &c, with flowers of sulphur, give as much air as possible, and keep the atmosphere drier.

NAME OF APPLE: *J. W., Pavenham Gardens.* Dumelow's Seedling, or Wellington, as it is very commonly called.

NAMES OF PLANTS: *Subscriber, H.* 1, Cupressus Lawsoniana aurea variegata (raised by Mr. John Waterer, Bagshot); 2, Juniperus chinensis variegata; 6, Abies (Tsuga) canadensis; 7, the ordinary form of Cupressus Lawsoniana, or it may have been cut from the same plant as No. 1, as large branches of this not unfrequently come quite green.—*St. Andrews.* We do not recognise the scrap.—*W. S. Stevens.* We cannot name your Coleus leaves. We do not undertake to name florists' flowers or garden hybrids.—*W. A. C.* 1, Chlorophytum orchidastrum; 2 Oxalis Martiana; 3, Saxifraga sponhemica; 4, Veronica gentianoides; 5, Papaver bracteatum; 6, Valeriana officinalis.—*M. Sparke.* Stanhopea saccata.—*J. Murton.* 1, Thrixspermum unguiculatum, Rchb. f. (Sarcochilus unguiculatus, Lindl.)—a plant created to annoy poor Orchid growers. You should be entitled to get your money back, for it has nothing to do with Phalænopsis cornu-cervi. When Mr. Cuming came back it was bought at an immense price, believed to be a Phalænopsis; and a modern traveller sent his employer we believe a thousand plants, which were believed to be Phalænopsis grandiflora, that were not Philippinese at all; 2, we did no receive; 3, Oncidium pulvinatum, Lindl, var. Sphegiferum, Rchb f. (Sphegiferum, Lindl.). *Rchb. f.—F. F. Gallmagh* 1, Nepeta glechoma; 2, Potentilla anserina; 3, Sisymbrium officinale; 4, Stellaria Holostea; 5, Veronica Beccabunga; 6, Lepidium Smithii; 7, Galium aparine; 8, Hieracium pilosella.—*J. S.* Ornithogalum latifolium.—*J. R. H.* We cannot name hybrid varieties of Rhododendrons.

ONYCHIUM JAPONICUM: *W. S.* You may show this as one of twelve hardy Ferns, if there is no stipulation as to their being British.

ORCHARD-HOUSE: *T. W. L.* The result arises from a cold, damp, dank atmosphere and sourness of the soil. Get a more bracing, sweeter air, &c. Apply the flowers of sulphur to arrest the mildew.

RAINFALL, &c.: *Portugal.* We will endeavour to get the information for you from headquarters.

VINES: *T. W. L.* Your Vines are evidently suffering from imperfect root action. The symptoms are those resulting from a cold, damp, sour soil and little root energy.

☞ FOREIGN SUBSCRIBERS sending Post Office Orders, payable at the post-office, King Street, Covent Garden, London, are requested to be good enough to write to the Publisher, at the office of this paper, 41, Wellington Street, Covent Garden, at the same time, to inform him of the fact.

COMMUNICATIONS RECEIVED:—T. W. Z. (you had better complain to the agent from whom you receive your copy of the *Gardeners' Chronicle*. There is no reason that our publisher knows why you should not always get it on Saturday)—J. R. J.—W. M. W. (too late).—C. H. B.—W. P—D.—J. M.—Amateur.—J. Fraser.—J. S.—G. Rudd (next week).—W. H. W. B.—D. D. (next week).—W. F.—W. M.—C. D. S (It may be speled either caravansary or caravansera).—W. W.—S. S., Mauritius.—A. Muller.—R. A.—J. D.—W. G. S.—J. Chapman (next week)—E. M.—W. G. K.

Markets.

COVENT GARDEN, June 22.

Business during the week has been brisk, clearances of all classes of goods being easily effected, with heavy supplies, at a slight reduction in prices—with the exception of late house Strawberries, which, owing to the large quantities arriving from Southampton and the West of England, have experienced a fall to quite one-half last week's prices. St. Michael's Pines are still arriving in good condition, though preference is given to home-grown fruit at moderate rates. *Jas. Webber, Wholesale Apple Market.*

VEGETABLES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	4 0– ..	Horse Radish, p. bun.	3 0– 5 0
— Eng. Globe, doz.	6 0– ..	Leeks, per bunch	0 2– 0 4
Asparagus (English), per bundle	2 0–10 0	Lettuces, per score	2 0– ..
Beans, French, p. 100	1 3– 2 6	Mint, green, per bunch	0 4– ..
— Longpod, ½-sieve	2 0– ..	Mushrooms, per pott.	1 0– 2 0
Beet, per doz.	1 0– 2 0	Onions, young, bun.	0 4– 0 6
Cabbages, per doz.	1 0– 2 0	Parsley, per bunch	0 4– ..
Carrots, per bunch	0 6– ..	Peas, green, per qt.	1 6– ..
— new, do.	1 6– ..	Potatos, Sweet, p. lb.	0 6– ..
Cauliflowers, spring, per dozen	4 0– 9 0	Radishes, per bunch	0 1– 0 3
Celery, per bundle	1 6– 2 0	— Spanish, doz.	1 0– ..
Chilis, green, doz.	1 6– ..	Rhubarb, per bundle	0 6– 1 0
Cucumbers, each	0 4– 1 0	Shallots, per lb.	0 6– ..
Endive, per doz.	1 0– 2 0	Spinach, per bushel	2 0– ..
— Batavian, p. doz.	2 0– 3 0	Tomatas, per doz.	3 0– ..
Herbs, per bunch	0 2– 0 4	Turnips, new, bundle	0 9– 1 0
		Veg. Marrows, each	0 6– ..

Potatos (new).—Jersey Kidneys, 14*s.* to 18*s.*; Rounds, 12*s.* to 14*s.* Cherbourg Kidneys, 14*s.*; Rounds, 11*s.* to 12*s.* Penzance Kidneys, 16*s.* to 20*s.* per cwt.—Old: Rocks, 10*s.* to 11*s.*; Regents, 14*s.* to 18*s.*; Flukes, 13*s.* to 16*s.*; Victorias, 12*s.* to 16*s.* per ton. Stocks nearly exhausted

FRUIT.

	s. d. s. d.		s. d. s. d.
Apples, per ½-sieve	1 6– 5 6	Melons, each	3 0– 8 0
Apricots, per box	2 0– 3 0	Nectarines	6 0–24 0
Cherries, per box	1 0– 3 0	Oranges, per 100	6 0–12 0
Cobs and Filbts., lb.	0 9– 1 0	Peaches, per doz.	6 0–24 0
Figs	..10 0–20 0	Pears, per doz.	3 0–15 0
Gooseberries, gr., qt.	0 3– 0 6	Pine-apples, p. lb.	3 0–10 0
Grapes, per lb	2 0– 8 0	Strawberries, per lb	0 6– 1 0
Lemons, per 100	6 0–10 0		

CUT FLOWERS.

	s. d. s. d.		s. d. s. d.
Arum Lilies, per doz.	4 0–12 0	Pelargoniums, zonal, 12 sprays	0 4– 1 6
Azaleas, 12 sprays	0 6– 2 0	Pinks, white, 12 bun.	3 0– 9 0
Carnations, 12 blooms	2 0– 4 0	— coloured, 12 bun.	2 0– 6 0
Eucharis, per doz.	6 0–12 0	Primula, dbl., p. bun.	1 0– 1 6
Gardenia, per doz.	2 0– 0 0	Rhododend., 12 hds.	1 6– 6 0
Heliotropes, 12 spr.	0 6– 1 0	Roses, indoor, p. doz.	1 0– 9 0
Lily of Valley, 12 spr.	1 6– 3 0	— outdoor, 12 bun.	6 0–12 0
Mignonette, 12 bun.	6 0– 9 0	Spiræa, 12 sprays	1 0– 4 0
Nemophila, 12 bun.	1 6– 4 0	Stephanotis, 12 spr.	3 0–12 0
Pelargoniums, 12 spr.	0 6– 2 0		

PLANTS IN POTS.

	s. d. s. d.		s. d. s. d.
Arum Lilies, per doz.	6 0–18 0	Lobelia, per dozen	4 0–12 0
Begonias, per doz.	6 0–12 0	Mignonette, do.	6 0– 9 0
Bouvardias, do.	12 0–18 0	Myrtles, do.	3 0– 9 0
Calceolaria, per doz.	9 0–24 0	Nasturtiums, dozen	4 0– 9 0
— herbaceous, doz.	6 0–18 0	Palms in variety, each	3 6–21 0
Campanulas, p. doz.	12 0–18 0	Pelargoniums, scarlet, per doz.	3 0– 9 0
Coleus, per dozen	4 0– 9 0	— in variety, doz.	12 0–30 0
Cyperus, do.	6 0–12 0	Petunias, double, doz.	9 0–36 0
Dracæna terminalis	30 0–60 0	— single, per doz.	6 0–12 0
— viridis, per doz.	18 0–24 0	Roses, Fairy, do.	9 0–15 0
Ficus elastica	2 6–15 0	— various, do.	18 0–30 0
Fuchsia, per doz	6 0–18 0	Spiræa, per doz.	9 0–24 0
Heaths, in var., doz.	12 0–30 0	— palmata, each	2 0– 5 0
Hydrangea, per doz	12 0–18 0		

CORN.

At Mark Lane on Monday trade was quiet. English Wheat, being in very short supply, was well held; foreign Wheat, however, was rather plentiful, and the previous Monday's rates were not in all cases maintained. Fine Barley was quite as dear, though there was very little inquiry. Malt was unaltered. An average trade was experienced for Oats, and no material change took place in prices. Maize quotations were generally lower. Beans and Peas changed hands slowly at about late rates. In flour the general course of prices was adverse to the holders.—There was very little doing on Wednesday in Wheat or other classes of produce, and the general tendency of prices was towards reduction; holders of English Wheat, however, remained somewhat firm, and in most instances the best descriptions of spring corn were held for the rates current on Monday. Maize was decidedly flat.—Average prices of corn for the week ending June 17:—Wheat, 47*s.* 11*d.*; Barley, 34*s.*; Oats, 28*s.* 3*d.* For the corresponding week last year:—Wheat, 42*s.* 3*d.*; Barley, 39*s.* 6*d.*; Oats, 30*s.* 8*d.*

CATTLE.

At the Metropolitan Market on Monday trade in beasts was dull. For sheep prices were rather reduced. The lamb trade was also dull at lower rates. The demand for calves was only moderate, and the average quality inferior; trade was slow at a reduction in price. Quotations:—Beasts, 4*s.* 8*d.* to 5*s.* 6*d.*, and 6*s.* to 6*s.* 4*d.*; calves, 4*s.* 6*d.* to 6*s.* 2*d.*; sheep, 5*s.* 6*d.* to 6*s.* 2*d.*, and 6*s.* 6*d.* to 7*s.*; lambs, 7*s.* 6*d.* to 8*s.* 4*d.*; and pigs, 4*s.* 6*d.* to 6*s.*—Thursday's market was moderately supplied with beasts, but a good supply of sheep and lambs, and a very large supply of calves. The trade was irregular, the hot weather tending to depress values. In beef, however, there was not much change, but mutton, veal, and lamb sold in most cases lower.

HAY.

At Whitechapel on Tuesday good fodder was firm, but the trade for inferior kinds was dull. Prices showed no change. Prime Clover, 100*s.* to 145*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 135*s.*; inferior, 55*s.* to 75*s.*; and straw, 35*s.* to 40*s.* per load.—On Thursday the supplies were moderate, and trade steady. Quotations:—Clover, best, 115*s.* to 145*s.*; inferior, 85*s.* to 95*s.*; hay, best, 110*s.* to 135*s.*; inferior, 55*s.* to 75*s.*; and straw, 35*s.* to 46*s.* per load.—Cumberland Market quotations:—Superior old meadow hay, 138*s.* to 147*s.*; inferior, 98*s.* to 120*s.*; new hay, 100*s.* to 116*s.*; superior Clover, 150*s.* to 160*s.*; inferior, 120*s.* to 132*s.*; and straw, 46*s.* to 52*s.* per load.

POTATOS.

The Borough and Spitalfields markets reports for Monday state that trade was slow for Potatos, but, owing to the small supply, prices were rather firm. Kent Regents, 160*s.* to 170*s.* per ton; flukes, 180*s.* to 200*s.*; Victorias, 160*s.* to 180*s.*

COALS.

In the market on Monday there was a good demand for house coals, at 6*d.* per ton advance for "best" and 3*d.* per ton for "seconds." On Wednesday house coals advanced another 6*d.*, and Hartleys were also higher. Quotations:—Bebside West Hartley, 18*s.* 3*d.*; Holywell Main, 17*s.* 6*d.*; Seaham West Hartley, 17*s.*; Walls End—Hetton, 21*s.*; Lambton, 20*s.* 6*d.*; Original Hartlepool, 21*s.*; Tunstall, 17*s.* 9*d.*; Vanes, 17*s.* 9*d.*; Kelloe, 18*s.*; East Hartlepool, 20*s.* 0*d.*; Tees, 20*s.* 9*d.*

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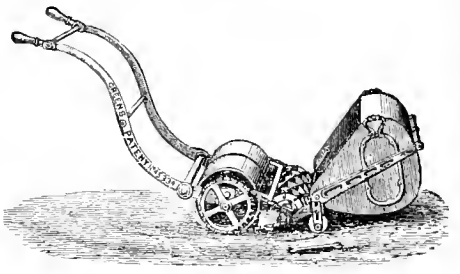

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These advantages no other Lawn Mowers possess.

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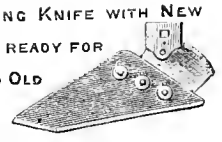
N.B.—Those who have Lawn Mowers to repair will do well to send them either to our Leeds or London Establishment, where they will have prompt attention, as an Efficient Staff of Workmen is kept at both places.

TURF CUTTING KNIFE WITH NEW DRUM FIXING READY FOR ATTACHING TO OLD MOWERS.



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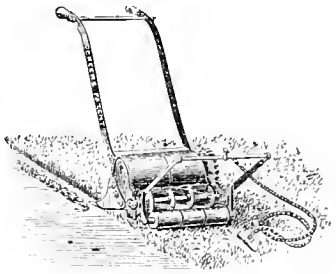

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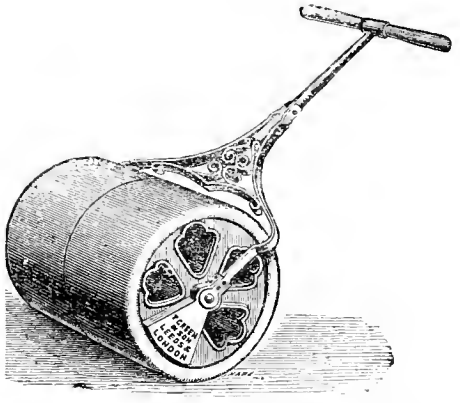

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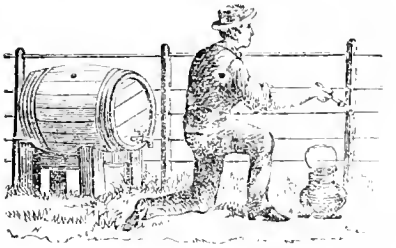

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UNSOLICITED TESTIMONIAL.

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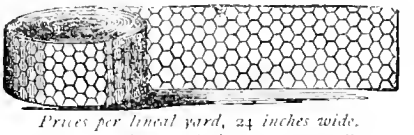

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2 inches	0 3 ..	0 3½ ..	0 4½ ..	0 6
1¾ ,, ...	0 3½ ..	0 4½ ..	0 5½ ..	0 7
1½ ,, ...	0 4½ ..	0 5 ..	0 6½ ..	0 8
1 ,, ...	0 9 ..	1 0 ..	1 3 ..	1 8
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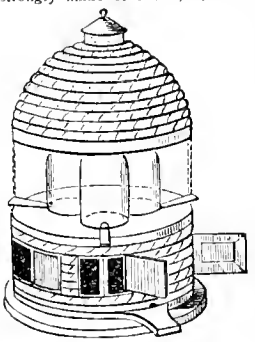

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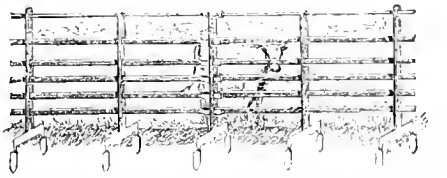

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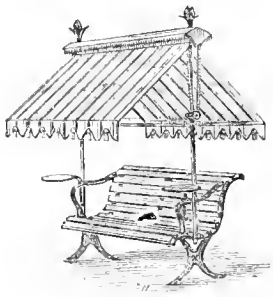

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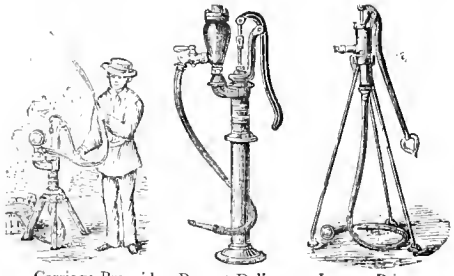

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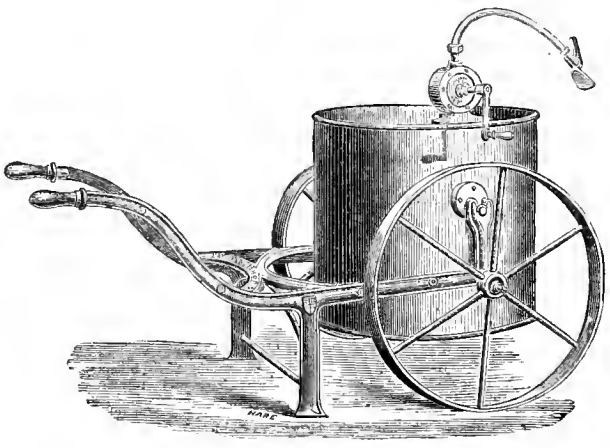

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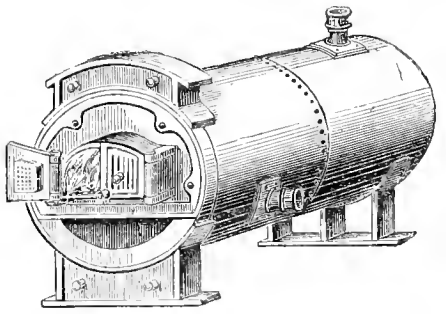

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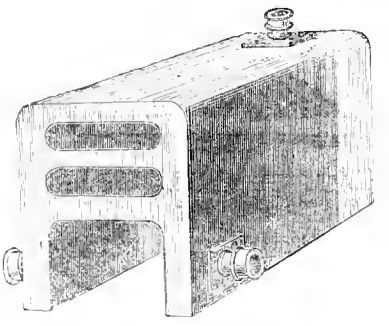

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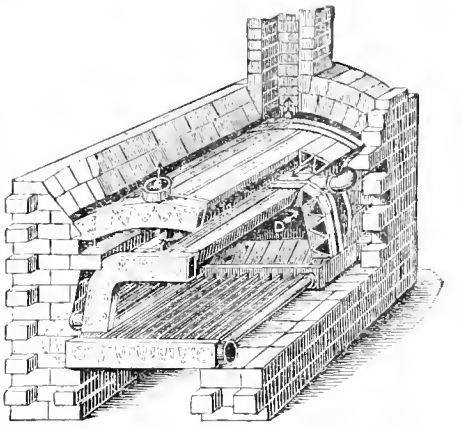

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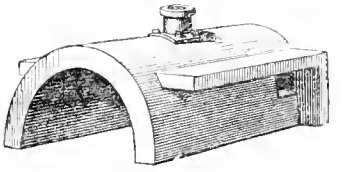

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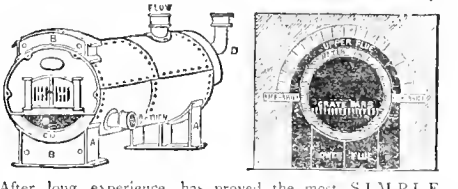

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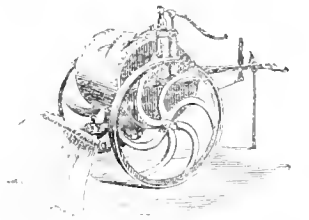

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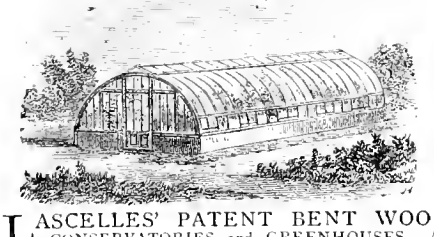

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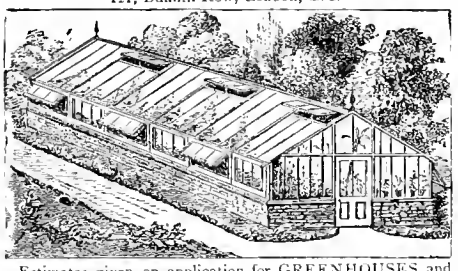

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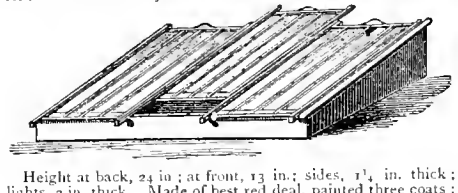

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WITH POWERFUL GARDEN ENGINE.

Cash Prices. Carriage paid to any Station in England.

Complete (36 gallons) £7 10 0 | If without Pump .. £4 10 0

This new article is very complete, and most useful in large gardens; is fitted with valve and spreader for distributing water or liquid manure. Waterpots and pails can be filled when the spreader is not in use.

The engine is bolted to the top of the barrel, and fitted with suction pipe, which is useful either for drawing water direct from a pond or out of the barrel.

GARDEN ROLL,

Balance Handle.

These are very heavy and well made.

SINGLE-CYLINDER.

18 in. long by 18 in. diam.	..	£2	10	0
20	,,	20	,,	..	3	5	0
22	,,	22	,,	..	4	0	0
24	,,	24	,,	..	4	15	0

DOUBLE-CYLINDER.

18 in. long by 16 in. diam.	..	£2	17	0
20	,,	18	,,	..	3	10	0
22	,,	20	,,	..	4	5	0
24	,,	22	,,	..	5	0	0
26	,,	24	,,	..	5	15	0

PORTABLE PUMP

For Liquid Manure or Water.

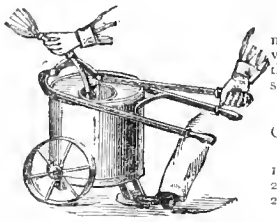
With stand .. £2 7 6

10 feet of India-rubber Suction Pipe, with Clip and Strainer.. 1 12 6

Powerful Garden and Conservatory Engine

Can be used with a pail or Water-barrow, £2 10s.

IMPROVED GARDEN ENGINE.



A first-class article, made extra strong, with very powerful engine, throws a continuous stream of water 50 feet.

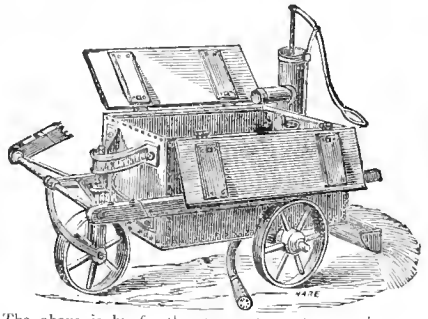
Cash Prices.

Carriage paid to any Station in England.

15 gallons	..	£4 0 0
20 gallons	..	4 10 0
25 gallons	..	5 0 0

The Judges at the late Great International Horticultural Exhibition held at Manchester (1873) tested this Engine very severely, and, although all the principal makers competed, it was declared to be the best, and was awarded the only prize, a Silver Medal.

WATER or LIQUID MANURE CART.



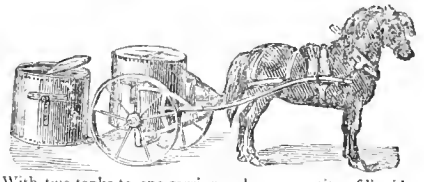
The above is by far the strongest, most convenient, and cheapest implement of the kind yet introduced. For conveying and distributing liquid manure it is invaluable. A pump can be attached for emptying cesspools, &c. As a drinking trough for cattle, and for many other farm purposes, it is most useful. The shafts and lids are arranged to turn back out of the way. Carriage paid to any Railway Station in England. Cash Prices.

To hold 140 gallons	.. .. ..	£12	0 0
,, 200 ,,	.. .. ..	14	0 0
,, 250 ,,	.. .. ..	16	0 0
Galvanised Iron Pump and 10-feet Indiarubber Suction Pipe	.. ..	4	0 0
Spreaders	each	0	15 0

The 140 and 200 gallon carts are best suited for one horse.

SWING WATER or MANURE CART,

SUITABLE FOR A PONY.



With two tanks to one carriage a large quantity of liquid can be carted in a short time, one tank being filled while the other is conveyed away. The tanks are galvanised, and can be set down and left in the fields for cattle to drink from.

Cash Prices. Carriage paid to any Railway Station.

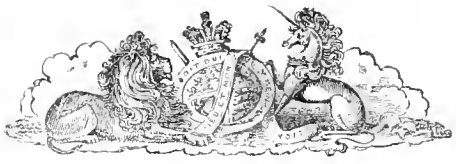
With one Tank to hold 60 gallons	..	£6	10 0
,, ,, 100 ,,	..	10	0 0
Valve and Spreader for dito	.. ..	1	0 0

Goods amounting to 40s. sent carriage free to any of the principal railway stations in England. Cash or references respectfully requested with transmission of all first orders.

J. WEEKS & CO.'S IMPROVED

CAST-IRON & SLATE FOUNDATIONS

A SPLENDID SUCCESS.



A SPLENDID SUCCESS.

Encouraged by the IMMENSE SUCCESS of Iron and Slate Foundations, as applied for many years to Peach Wall Coverings, we have been induced to extend their application in an IMPROVED and UNIQUE form to every description of Horticultural Building.

SPECIAL ADVANTAGES:

ECONOMY OF COST,
ECONOMY OF LABOUR,
ECONOMY OF SPACE,
EXTREME RIGIDITY,

NO FRONT BRICKWORK REQUIRED,
NO BUILDING OF ARCHES,
EASY OF REMOVAL,
TENANT'S FIXTURES.

UNIQUE IN NEATNESS AND GENERAL ADAPTABILITY.

J. WEEKS & CO.,

HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS,

KING'S ROAD, CHELSEA, LONDON, S.W.

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